Research

ISSUE 93 October 1, 2020 | 7:20 PM EDT

BEYOND 2020: POST-ELECTION POLICIES



The US presidential election is shaping up to be one of the most contentious and consequential in modern history, making its potential policy, growth and market implications Top of Mind. We discuss the candidates' economic policy priorities with Kevin Hassett, former Chairman of the Council of Economic Advisers under President Trump, and Jared Bernstein, economic advisor to former Vice President Biden. For perspectives on US foreign policy, we speak with Eurasia Group's lan Bremmer, who sees significant alignment between the candidates on many key foreign policy issues—including trade. We then assess the impacts of various election outcomes, concluding that a Democratic sweep could lead to higher inflation, an earlier Fed

liftoff, and a positive change in the output gap, which we see as negative for the Dollar and credit markets, roughly neutral for US equities and oil, and positive for some EM assets. Finally, we turn to the actual race and ask Stanford law professor Nathaniel Persily a key guestion today: how and when would a contested election be resolved?

The president is very likely to pursue an infrastructure package in a second term, and is probably prepared to recommend legislation amounting to up to \$2tn of infrastructure spending.

- Kevin Hassett

Higher taxes are critical to pay for the more permanent measures required to make our economy, cities and people more resilient to adverse shocks... But I don't believe these narrowly targeted taxes will hurt the economy, especially when we net out the benefits from what they're paying for.

- Jared Bernstein

I don't think US tariffs on China would just come off under Biden; China would have to provide something in return.

- Ian Bremmer

INTERVIEWS WITH:

Kevin Hassett. former Chairman of the Council of Economic Advisers in the Trump administration

Jared Bernstein, Economic Adviser to former Vice President Joe Biden

lan Bremmer, President and Founder, Eurasia Group

Nathaniel Persily, Professor of Law, Stanford Law School

ECONOMIC IMPLICATIONS OF THE ELECTION Alec Phillips, GS US Economics Research

GROWTH VS. VALUE AND THE ELECTION Ben Snider, GS US Equity Strategy Research

ASSET IMPACTS OF ELECTION OUTCOMES **GS** Markets Research

POLLS VS. PREDICTION MARKETS Blake Taylor, GS US Economics Research

...AND MORE

Allison Nathan | allison.nathan@gs.com | Gabriel Lipton Galbraith | gabe.liptongalbraith@gs.com | Jenny Grimberg | jenny.grimberg@gs.com

Investors should consider this report as only a single factor in making their investment decision. For Reg AC certification and other important disclosures, see the Disclosure Appendix, or go to www.gs.com/research/hedge.html.

Macro news and views

We provide a brief snapshot on the most important economies for the global markets

US

Latest GS proprietary datapoints/major changes in views

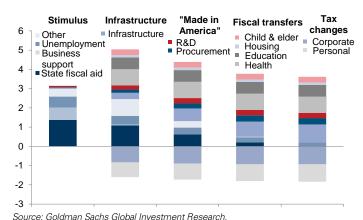
- We see less chance of pre-election fiscal stimulus, but see a ~\$2tn package as likely under a Democratic sweep.
- We lowered our Q420 growth forecast to 3% qoq ann. on the likely lack of further fiscal support, and now expect -3.5% and +5.8% full-year growth in 2020/2021, respectively.
- We now expect the unemployment rate to fall to 7% and 5.6% by year-end 2020 and 2021, respectively.

Datapoints/trends we're focused on

 US elections/Fed; we think a Democratic sweep would likely lead to more stimulus and a positive change in the output gap, which could pull forward Fed liftoff to as early as 2023.

The Biden agenda implies a large fiscal boost

Estimated budgetary effect of proposed Biden agenda, % GDP



Europe

Latest GS proprietary datapoints/major changes in views

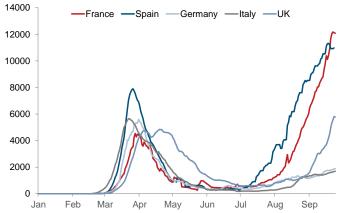
- We lowered our Q420 and Q121 growth forecasts to 2.2% and 1.6% qoq-na as a result of a rising virus drag, but raised our forecasts for Q2-Q421 given more scope for catch-up.
- We raised our expectations for macro support, and see Euro area-wide fiscal stimulus reaching 1.5% of GDP in 2021.
- We expect the ECB to announce an extension of the PEPP programme to the end of 2021 in December.

Datapoints/trends we're focused on

- Virus resurgence; daily confirmed cases have spiked past April peaks in Spain/France, leading to local lockdowns.
- Brexit; we still see a "thin" free trade agreement by year-end.

New virus cases surge in Spain and France

Daily new cases of COVID-19, 7-day moving average



Source: ECDC, Goldman Sachs Global Investment Research.

Japan

Latest GS proprietary datapoints/major changes in views

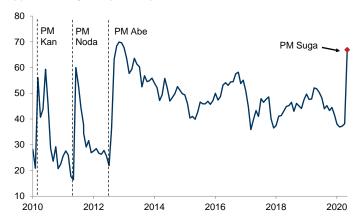
- We expect newly appointed PM Yoshihide Suga to push forward with Abenomics, particularly the combination of active fiscal and monetary easing, with a greater focus on structural reforms.
- We lowered our CY2020 core CPI forecast to 0.0%.

Datapoints/trends we're focused on

- Early elections, which we think are likely before next fall, though the precise timing will depend on COVID-19 and public opinion.
- A third supplementary budget; we expect any early election will focus on the need for further fiscal support, which PM Suga sees as critical to reviving the economy.

Suga's high approval makes snap elections more likely

Approval rating of Japanese prime ministers, %



Source: RealClearPolitics, Media reports, Goldman Sachs GIR.

Emerging Markets (EM)

Latest GS proprietary datapoints/major changes in views

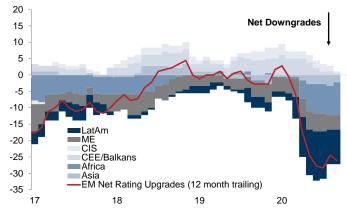
- We lowered our full-year 2020 China growth forecast slightly to a still above-consensus 2.7% on less dovish monetary policy.
- We expect EM growth to slow by ~1/3 in Q4 from ~30% qoq ann. in Q3 reflecting a smaller tailwind from easing lockdowns.

Datapoints/trends we're focused on

- EM ratings downgrades, which have started to slow after accelerating in March at the height of COVID, with momentum improving in LatAm and continuing to worsen in EMEA.
- A tale of two debtors; following their restructurings, the outlook in Ecuador and Argentina has diverged; we see further upside in Ecuador but remain cautious on Argentina.

The pace of EM ratings downgrades has slowed

12-month cumulative rating changes for EM, notches



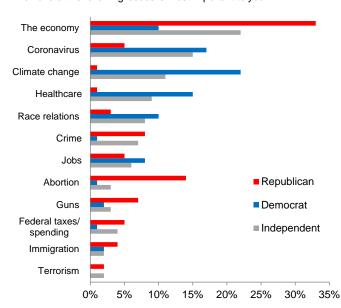
Source: Bloomberg, Goldman Sachs Global Investment Research.

Beyond 2020: Post-election policies

The fast-approaching US presidential race is shaping up to be one of the most contentious and consequential in modern history. Given the candidates' radically different worldviews and policy agendas to enact them, the potential policy, growth and market implications of the election are Top of Mind.

We first focus on the economic policy priorities of both candidates by speaking with economic policy experts from each party: **Kevin Hassett**, former Chairman of the Council of Economic Advisers under President Trump, and **Jared Bernstein**, economic advisor to former Vice President Biden. They each offer a detailed overview and defense of their candidate's economic policy priorities, which largely focus on the same issues—taxes, pandemic relief, infrastructure investment and (de)regulation—but differ dramatically in size and execution in some cases (e.g. pandemic relief and spending plans), and in outright direction in others (e.g. taxes and regulation; see pgs. 12-13 for details on the candidates' specific policy proposals.)

Top election issue? Depends on who you ask Which one of the following issues is most important to you?



Note: Survey of adults residing in the US; conducted from Sept. 11 – 16, 2020. Source: NPR/PBS NewsHour/Marist, Goldman Sachs GIR.

Alec Phillips, GS Chief Political Economist, then offers his own perspectives on the policy differences between the two candidates and their implications for economic growth and Fed policy. He finds that even partial realization of Biden's policy agenda that includes a substantial amount of fiscal stimulus, spending and investment is likely to lead to a positive change in the output gap—defined as actual minus potential GDP—and higher core inflation than would likely be the case under a second Trump administration, and, for that matter, than what is currently embedded in our baseline forecasts. This, in turn, could pull forward the Fed's first rate hike by up to 2 years—from our current forecast of early 2025 to sometime in 2023.

We then turn to lan Bremmer, President and Founder of Eurasia Group, for a broader perspective on Trump and Biden's policy agendas. He argues that the differences between the two candidates are far sharper on domestic policy, where he views a Biden win alongside a Democratic sweep of Congress as heralding potentially the largest shift in US domestic policy in decades. On foreign policy, however, he sees the candidates' policies as differing more in approach than in substance on issues as far-ranging as China, the Middle East and Russia. In particular, he doesn't expect a meaningfully positive shift in US-China relations, including on trade. And while he expects Biden to pursue a revised nuclear deal with Iran, he doesn't think any deal will materially alter the adversarial relationship between the US and Iran, and doesn't see any material progress occurring on it until after Iran's presidential election in June 2021. The one area of foreign policy where Bremmer does see substantial differences between the candidates is towards Europe, where he believes US-European cooperation on global issues like climate change and vaccine distribution would increase markedly under Biden.

So what would a Trump versus a Biden policy agenda mean for markets? Our markets economists assess this by asset class on pgs. 16-17, generally seeing a Biden win that results in more fiscal stimulus, higher corporate taxes and increased regulation as negative for the Dollar and credit markets, roughly neutral for US equities and oil, and positive for some EM assets, although credit and equity market impacts in particular will likely depend on the sequencing of these policy initiatives.

Ben Snider, Senior US equity strategist, then digs deeper into the potential equity market impacts. He argues that the election outcome could be a catalyst for a rotation away from growth stocks towards cyclical stocks—a shift that he believes would likely occur anyway should the approval of a COVID-19 vaccine later this year lead to a sharp acceleration in the economic recovery, as we expect.

Finally, while our primary focus is on the policy implications of the potential election outcomes, with what promises to be an historic Election Day less than five weeks away, we can't help but address some of the peculiarities of this year's election. GS US economist **Blake Taylor** looks at the difference between polls and prediction markets and what it may be telling us about perceptions of election odds today. And we turn to Stanford law professor, **Nathaniel Persily**, to discuss how the large number of absentee and mail-in ballots amid the pandemic may impact the election outcome and when we know it, as well as perhaps one of the most pressing questions today: how and when would a contested election be resolved?

We also include backgrounders on the US Electoral College (pg. 21) and the demographic shift underway in the US voting population (pg. 22). P.S. Don't forget to check out the podcast version of this and other recent GS Top of Mind reports—on Apple and Spotify.

Allison Nathan, Editor

Email: allison.nathan@gs.com
Tel: 212-357-7504
Goldman Sachs and Co. LLC



Interview with Kevin Hassett

Kevin Hassett is the former Chairman of the Council of Economic Advisers and Senior Advisor in the Trump administration. Currently, he is Vice President and Managing Director of The Lindsey Group and a Distinguished Visiting Fellow at the Hoover Institution. Below, he discusses what economic policy might look like under a second Trump administration.

The views stated herein are those of the interviewee and do not necessarily reflect those of Goldman Sachs.



Allison Nathan: What would be the top economic priorities of a second Trump administration?

Kevin Hassett: President Trump's economic agenda in a second term would likely focus on three main areas. First is taxes, where the top priority would be extending the expiring provisions of the Tax Cuts and

Jobs Act (TCJA). I would also expect another tax proposal that would include additional tax cuts for the middle class. Second is passing a large infrastructure plan. The president is passionate about improving and expanding our nation's infrastructure, and there was probably a year's worth of meetings spent in the Roosevelt Room when I was working at the White House developing an infrastructure plan. Unfortunately, the issue never made progress during President Trump's first term because other policy initiatives—like tax cuts—took priority on a limited legislative calendar, and the president never succeeded in getting Congress to pay attention to it. But given the tremendous amount of work already done on the issue at the White House, cabinet and regulatory agencies, the president is very likely to pursue an infrastructure package in a second term, and is probably prepared to recommend legislation amounting to up to \$2tn of infrastructure spending. Finally, additional fiscal stimulus would likely be pursued if we don't get more stimulus before the election and the economy continues to struggle from the pandemic.

The president is very likely to pursue an infrastructure package in a second term, and is probably prepared to recommend legislation amounting to up to \$2tn of infrastructure spending."

Allison Nathan: What would this additional fiscal stimulus look like?

Kevin Hassett: The exact size of the package, and what's included in it, would depend on what's happening on the ground in terms of controlling the virus as well as the state of the economic recovery when the stimulus is being pursued. For example, when we were negotiating the Phase 3 stimulus bill back in March, most of the health experts on the president's COVID-19 taskforce expected the disease to be controlled by the summer, so the goal was to provide a bridge to individuals and businesses through then. Of course, the summer is now behind us and COVID-19 remains a problem, which suggests the need for another bridge. But with the

economic recovery so far running way ahead of schedule and advances in testing—let alone a vaccine—likely to further help the economy move toward normalization, the need for a stimulus package as large as the one that was being contemplated over the summer—on the order of \$3tn—is just not apparent at this point.

One thing that fiscal stimulus legislation during a second Trump administration won't include is state and local aid anywhere close to the amount that Democrats originally requested. The concept of making states whole for the pandemic-related hit to revenues they're incurring—just as the extra unemployment benefit intended to do for individuals no longer earning income due to the disease—is reasonable. But I estimate that the amount the Democrats initially requested for state and local governments was around five times greater than what the Congressional Budget Office GDP forecast implied the revenue shortfall would be. And that forecast turned out to be too pessimistic, since the economy has recovered faster than expected. Providing this amount of aid would be akin to bailing out states that had mismanaged their finances and had run massive deficits even before the pandemic, which would offend members of Congress from fiscally responsible states on both sides of the aisle. So if President Trump is reelected, that's not going to happen.

Allison Nathan: Given possible further reductions in taxes and increased federal spending, how concerned is President Trump about running up larger deficits?

Kevin Hassett: President Trump is very aware of the need to balance the budget and achieve deficit reduction over the long run, so this is something I could see him turning his attention to during a second term. However, in order to successfully pursue a fiscal consolidation package, the economy must first be in a strong and healthy place. President Obama understood this; although he ran on a platform that centered on repealing the Bush tax cuts, he tabled this move after the onset of the Great Recession. So, while deficit reduction is important, it would basically take the economy returning to its pre-COVID growth path for President Trump to pursue it.

Allison Nathan: With so much focus on the importance of the virus trajectory to the health of our citizens and our economy, would there be any adjustments to the federal government's pandemic response in a second Trump administration?

Kevin Hassett: Progress on the vaccine front has been encouraging, and the Trump administration has been actively engaged in securing vaccine doses for the US population as soon as they become available. Of course, we don't know exactly when that will be given the necessity of strict testing protocols to ensure the safety and effectiveness of any vaccine. But even before President Trump would start a second

term, significant advances in testing are likely to go a long way in terms of controlling the virus and supporting the continued recovery in economic activity. For example, a number of companies are currently developing rapid tests that could possibly be conducted at home so that people could test themselves each day before going to work, to a restaurant, or anywhere where they might potentially infect others. The federal government has already agreed to buy 150mn of these tests, which it will distribute according to the guidance of health professionals. Over 10x that amount will likely be needed in order to successfully control the virus, but the Trump administration's commitment to buy tests in such large volumes gives companies a strong incentive to invest in capacity. So I am confident that a substantial amount of these tests will be available by the end of the year, which should help contain the virus and its economic impact.

Allison Nathan: Can we expect any changes to the Trump administration's approach to trade in a second term?

Kevin Hassett: No. President Trump's approach of saberrattling with tariffs has been very effective in extracting concessions from trading partners that had no incentive otherwise to come to the negotiating table given the advantages they had in the asymmetric trade deals that President Trump inherited. With this approach, the president got the Europeans to increase their contributions to NATO, extracted long-desired concessions from Canada and Mexico under the USMCA and from South Korea in a re-negotiated KORUS, and has made real progress in starting to correct the historic imbalances that had developed in our trade relationship with China. Ultimately, President Trump's goal is zero tariff and non-tariff trade barriers with our trading partners. But I would expect him to continue to employ a tariff-led strategy to further correct unfair trade practices that have harmed American businesses and individuals, which previous presidents have failed to do.

I would expect [President Trump] to continue to employ a tariff-led strategy to further correct unfair trade practices that have harmed American businesses and individuals, which previous presidents have failed to do."

Allison Nathan: A large part of President Trump's first-term agenda was enacting deregulation across a wide variety of sectors. Should we expect this to continue in a second term?

Kevin Hassett: President Trump has meaningfully rolled back regulation during his first term. For perspective, President Obama enacted just under 500 new "economically significant" regulations during his administration; by the end of this year, Trump will have enacted just 16. This substantial regulatory rollback has significantly benefitted small and medium-sized businesses, and much faster than I originally assumed it would. That's because these firms didn't need to spend time, money or other resources on hiring more compliance, legal, and

engineering staff to keep up with new regulations and could instead focus on their core businesses. The positive boost from deregulation is evident in small business organization surveys, which showed historically high levels of confidence that coincided with the deregulation push. During a second term, the most economically important action President Trump would take would be to maintain that commitment to limit new regulations, which would further strengthen the economic climate for entrepreneurs and small businesses.

During a second term, the most economically important action President Trump would take would be to maintain [his] commitment to limit new regulations, which would further strengthen the economic climate for entrepreneurs and small businesses."

Allison Nathan: Given the president's policy priorities, what type of growth do you expect under a second Trump administration?

Kevin Hassett: Growth in 2Q was as bad as we've ever seen, but growth in 3Q will likely be as good as we've ever seen. So substantial positive momentum has already taken hold. And don't forget that we entered the pandemic with substantial growth momentum. Real median household income rose \$4379 between 2018 and 2019 according to the US Census Bureau—roughly \$1300 more than it did during the entire eight years of the Obama administration. Many factors contributed to that growth besides President Trump's policies. But if President Trump were reelected, the drivers behind that momentum would still be in place and would likely contribute to a continuation of the rapid economic recovery, provided we get the disease under control.

Allison Nathan: Would economic growth be higher under a second Trump administration than under a Biden administration?

Kevin Hassett: If former Vice President Biden follows through with the tax hikes he proposes—which would be over 2x larger than the biggest tax hike in history—then the answer is definitely yes. Although these tax hikes may be marketed as highly progressive, the proposed steep increase on passthrough entities and removal of the Social Security tax cap would affect the largest employers in the country, hurting both growth and jobs. The idea that these tax hikes wouldn't be contractionary is just highly inconsistent with the facts. I believe they would be massively contractionary and likely lead to a double-dip recession. The real question in my mind is whether Biden would actually pursue such tax increases if he were to be elected. It's one thing to propose such a policy during the campaign to attempt to win over left-wing voters. But it's another thing entirely to actually implement such radical policy when you actually have to take ownership of the economy and its well-being.

Interview with Jared Bernstein

Jared Bernstein is an economic adviser to former Vice President Joe Biden's presidential campaign, Senior Fellow at the Center on Budget and Policy Priorities, and the former Chief Economist and Economic Adviser to Biden in the Obama administration. Below, he discusses what economic policy might look like under a Biden administration.

The views stated herein are those of the interviewee and do not necessarily reflect those of Goldman Sachs.



Allison Nathan: What would be the top economic priorities of a Biden administration?

Jared Bernstein: Former Vice President Biden's view is that a sustainable and robust economic recovery is unlikely in the absence of virus control, so getting the pandemic under control would be the first

economic priority of a Biden administration. His plan to achieve this involves a much more significant role for the federal government in organizing governors and other state actors to administer testing, tracing, quarantining, as well as preparing for the distribution of a vaccine. The absence of federal support and leadership has been a large factor in both the health crisis and the economic crisis stemming from this pandemic.

The second economic priority would be to finish building the bridge to the other side of the crisis by providing further fiscal relief from the pandemic. It's clear that the economy is and will be facing a significant output gap for several years as a result of the pandemic, but the recovery so far has been K-shaped, with the people at the top of the economic distribution doing well while those at the bottom are really struggling. It's therefore imperative that the next fiscal relief package focuses on policies that bring resources to people that need them the most, including expanding and enhancing SNAP benefits, antieviction measures and unemployment benefits. It's not incidental that these are also policies with high multipliers relative to other options. During my time in the Obama administration, we learned from the Recovery Act that one of the most effective relief policies with the biggest multiplier was increasing aid to states and localities, and specifically increasing the federal government's share of Medicaid spending.

The third economic priority would be what Biden calls his "Building Back Better" agenda, a set of policies intended to increase the resilience of the economy to the types of shocks that come fast and furiously these days—ranging from climate-induced wildfires and intense storms to the ravages of racial inequality. To achieve this, he proposes deep investments in clean energy (\$2tn over 4 years), with a strong infrastructure component, more affordable access to education, health care, housing, and child and elder care (\$775bn).

Allison Nathan: Are these priorities achievable without a Democratic Congressional sweep?

Jared Bernstein: Enacting such policies would entail fewer frictions if Democrats control Congress, but there is actually some degree of bipartisan support for measures to successfully control the virus and provide the necessary fiscal relief to make sure the economy continues to recover. The political calendar makes leveraging that support today

challenging, but that will be resolved by the political calendar itself, and while the odds of securing another fiscal relief package before the election have fallen pretty steeply, it's still possible given the negotiations underway, and, post-election, those odds go up.

Of course, some Republicans are loathe to support some of the more progressive aspects of the Building Back Better agenda that require "pay-fors," or the raising of new sources of revenue to fund new spending. But other important agenda items have real bipartisan support, such as infrastructure investment. I have literally sat in US Congressional hearings and heard both parties forcefully agree on the necessity of an infrastructure plan.

Allison Nathan: Even with substantial bipartisan support for infrastructure investment, not much has been accomplished on it. What gives you confidence that an infrastructure plan would actually be realized? What might it include? What would be the economic impact?

Jared Bernstein: Even people who follow this issue closely discount the importance of presidential leadership. Yet, this is the main reason why Congress has failed to enact an infrastructure plan. It is an area where the old adage "plan beats no plan" applies, yet President Trump has never offered a specific plan. Given the tremendous untapped demand for an infrastructure program, I'm confident that a president who really wants to do this would find bipartisan support.

Beyond the roads and bridges that usually characterize any infrastructure discussion, Biden's \$2tn plan would include upgrades to water and existing rail and transit networks, as well as a push towards universal broadband. The plan would also emphasize investments to address climate change, including expanding green spaces and electric vehicle production and infrastructure, providing subsidies for investment in solar and battery storage technologies, offering incentives for upgrading and weatherizing buildings and homes, and making clean public transit available to cities.

By promoting such investment and innovation in the clean energy space, we would be hitching our wagon to a powerful trend that's already underway in the private sector, including within financial markets, with trillions of dollars of assets under management already dedicated to clean energy and renewables. Helping to boost that existing trend would be progrowth and pro-jobs. So an infrastructure investment program, especially one that focuses on green investment, is critical to sustaining our economic prosperity. And the cost of not tackling climate change through such investment will be not just significant, but existential for the country, if not the world.

Allison Nathan: But under the Biden plan such spending will require raising taxes. Won't raising taxes while the economy is still weak endanger the economic recovery?

Jared Bernstein: Higher taxes are critical to pay for the more permanent measures required to make our economy, cities and people more resilient to adverse shocks. Absent "pay-fors," these policies would be very difficult to sustain. The sequencing of new taxes and spending will have to be monitored in real time. But I don't believe these narrowly targeted taxes will hurt the economy, especially when we net out the benefits from what they're paying for. The tax increases Biden proposes are highly progressive—they wouldn't kick in until above \$400K in income, and some of them, like taxing realized capital gains as regular income, wouldn't kick in until adjusted gross income is over \$1mn. The corporate tax rate would rise from 21 to 28 percent, but remember, that tax is countercyclical in nature as it falls exclusively on profits; losses are deductible. In other words, the negative elasticities on spending and growth typically associated with tax increases are far less observable at the highest levels of income.

It's also important to look at both sides of the ledger to judge the growth impacts associated with increased taxes. The spending programs that such tax increases are intended to pay for—particularly in the areas of climate change and helping people get back to work through policies like increased childcare support—are all strongly pro-growth. So it's not just as simple as saying that raising taxes will hurt growth. And it often goes unnoticed that Biden's plan also includes several targeted tax *cuts*, such as a \$15K tax credit for first time home buyers, an \$8K family tax credit for child and dependent care, a temporary expansion of the Child Tax Credit with full refundability, and substantial tax credits for small businesses, particularly targeted at business owners of color.

I don't believe these narrowly targeted taxes will hurt the economy, especially when we net out the benefits from what they're paying for."

Allison Nathan: Will Biden's short and longer-term spending plans further jeopardize the fiscal health of the US?

Jared Bernstein: I'd respond with a firm "no." In the near term, it's essential to fund counter-cyclical fiscal policies, such as the fiscal relief package we discussed, through deficit financing. That's especially the case given the very low trajectory of actual and expected interest rates, which substantially reduce the interest expense of the federal government's debt as a share of GDP even as debt levels have increased. Longer term, Biden's plan is actually estimated by the Penn Wharton budget model to lead to about a 6% reduction in the federal debt by 2050 relative to the current baseline, in part because the progressive tax increases help pay for increased spending, but also because of positive growth effects that generate additional tax revenues and lower costs in areas such as healthcare over time.

Allison Nathan: How different would trade policy likely look under a Biden administration?

Jared Bernstein: President Trump's trade war has had a significantly negative impact on the US economy, farmers, manufacturers, and exporters because it has crudely attempted to unscramble a globalization omelet that can't be unscrambled. Case in point: Alcoa—an American aluminum producer—asked for an exemption to the tariffs intended to protect them because they assessed that the tariffs did more harm than good to their business.

In contrast, the Biden plan envisions creating a more proworker trade environment through three main channels. First, he would work in coalition with our traditional partners to identify and isolate bad actors. Second, he would make sure that exchange rates and capital flows are not distorting trade outcomes. Finally, and most importantly, he would invest deeply in our domestic tradable sectors by offering incentives to bring onshore critical supply chains, supporting manufacturing employment through a tax credit for on-shoring and a tax penalty for offshoring, and "buy American" provisions in government procurement. He would also think carefully about trade deals. My personal view is that before we get back into the business of negotiating trade deals, we should rethink who needs to be at the table when such deals are made, because the trade deal process has become pretty corrupted at the expense of workers, labor unions, and consumers.

Allison Nathan: Would a Biden administration seek to roll back the Trump administration's deregulation efforts?

Jared Bernstein: We can expect rollbacks in many areas. Climate is at the top of the list. I wouldn't be surprised if Biden started to roll back President Trump's anti-climate agenda on the first morning of his administration. The second area is healthcare. It is underappreciated that the Trump administration has sought to sabotage the Affordable Care Act (ACA), which has led to a sharp increase in the share of uninsured Americans during his administration. Biden would work to repair this damage in short order, and then expand health coverage by lowering the Medicare eligibility age, increasing the premium tax credit for people who buy health insurance, and adding a public option to the ACA. He would also seek to roll back antiimmigration and anti-union regulations, including supporting the PRO Act that would override state "right to work laws." He has long held that diminished worker bargaining power is a key factor behind rising inequality, so this would likely be an important part of his regulatory agenda.

Allison Nathan: Given all of these policy proposals, what do you expect for growth under a Biden administration?

Jared Bernstein: Unsurprisingly, I think we would likely see higher growth under a Biden administration than we would under a second Trump administration, and that applies both to near- and longer-term growth. In the near term, fiscal stimulus to support the economic recovery would likely be greater under Biden than under Trump. Biden's experience with the Recovery Act following the Global Financial Crisis taught him the importance of this type of support and how to work together across the aisle to secure and implement it. Over the longer term, many of the structural changes that Biden proposes are pro-growth both from an investment and a labor supply perspective, with the latter stemming from his child care and universal pre-K proposals.

Economic implications of the election

Alec Phillips discusses what the policy differences between the candidates might mean for the economic outlook

The outcome of the presidential and congressional elections could considerably alter the economic outlook. Currently, prediction markets imply roughly even odds of a Democratic sweep, which we believe would have the greatest policy—and economic—consequences of any outcome. Prediction markets imply that a status quo outcome is the second most likely scenario, which we think would have more limited policy implications.

Economic policy under Biden

A Democratic sweep would mean greater fiscal stimulus at the start of 2021. Speaker Pelosi recently introduced a \$2.2tn bill in the House. Should the Congress fail to pass pre-election stimulus, we expect a bill in that range to become law in 2021 if Democrats win control of the House, Senate, and White House. Former Vice President Biden has not proposed a specific dollar amount for additional aid, but has endorsed state fiscal aid, support for business, and expanded unemployment benefits. In light of broad support for another round of stimulus payments to individuals among congressional Democrats, we assume this would also be part of a stimulus package.

Democratic control would likely lead to higher taxes, but probably not until 2022. Biden has proposed tax increases that external estimates put at nearly \$4tn over ten years.¹ Higher rates on capital gains and dividends seem likely in this scenario, as does an increase in the corporate tax rate. In both cases, however, we would expect a smaller increase than what Biden has proposed to become law. For example, we would expect the corporate rate to rise to 25% or possibly slightly higher, but likely not to the proposed 28%. Similarly, while we would expect the rate on capital gains to rise, we would not expect capital gains to be taxed at the ordinary income tax rate. Top marginal individual income tax rates would also likely rise, but imposing payroll taxes on the wages of high-income earners would be much less likely.

Spending would likely rise by at least as much as tax revenue under Democratic control, even beyond short-term stimulus. Some prior tax increases were aimed at deficit reduction, but we would expect that any tax increases next year would fund new spending programs, particularly those that are seen as more permanent in nature, like health subsidies and other social benefits.

Under a Democratic sweep, the size of the Senate majority matters. The slimmer the majority, the more centrist the marginal (i.e., 51st) vote in the Senate is likely to be. This would come into play particularly in fiscal policy, where only 51 votes are needed in the Senate under the "reconciliation" process. A larger Senate majority also raises the odds that Senate Democrats eliminate the filibuster, but this move seems unlikely unless Democrats have a margin of at least a few seats. Assuming the filibuster remains in place, a Democratic

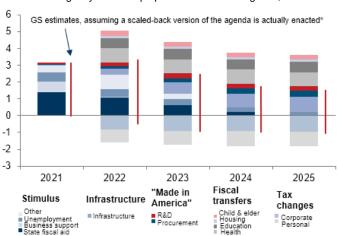
majority would need to secure 60 votes in the Senate to pass most legislation.

A Biden administration with a divided Congress might result in fairly limited fiscal policy changes. A Republican-majority Senate would likely block the tax increases the Biden campaign has proposed, as well as most of the spending. While we would still expect a limited fiscal stimulus package to pass, most of the other aspects of Biden's legislative agenda probably would not.

Tariffs would likely decline under a Biden administration.

While the Biden campaign has said only that Biden would "re-evaluate" tariffs upon taking office, we expect that a potential Biden administration would reverse the tariffs the Trump administration imposed on imports from China and abstain from any new broad tariffs. That said, this might be subject to additional negotiations, so the reversal might not happen immediately. Importantly, tariff reductions would not need congressional approval so they could occur even if Congress remains divided. This is also the case regarding regulatory policies under existing laws, where we would expect material differences from the Trump administration in environmental, labor, and healthcare regulation, among other areas.

Budgetary effects of Biden-Harris proposals Estimated budgetary effects of proposed Biden-Harris agenda, % of GDP



*Red lines represent GS estimates of budgetary effects assuming a scaled-back version of the agenda is enacted. For details, see footnote 2 on the next page. Source: Goldman Sachs Global Investment Research.

Economic policy under Trump

Policy would likely change much less under a status quo election outcome. In this scenario, Congress would likely enact a smaller fiscal relief package, similar to the \$650bn package Senate Republicans introduced in early September. That bill included support for small business and roughly \$100bn in funds to states to cover education-related costs. We would not expect another round of stimulus checks, nor would we expect a renewal of the extra weekly unemployment benefit that expired in July and which President Trump partially extended through executive order.

Beyond a modest fiscal stimulus bill, the rest of the agenda under a status quo election outcome is not obvious. Infrastructure is the main item left undone from President Trump's first-term agenda, and this could become a focus for

¹ The Tax Policy Center.

the legislative agenda in a second term. That said, the issue failed to progress over the last few years because of disagreement over a new funding source, which could remain an impediment under a divided Congress.

A Republican sweep would likely lead to more tax cuts.

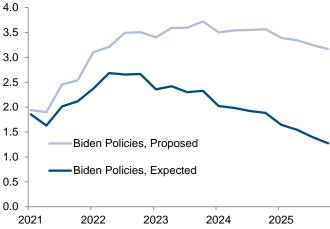
President Trump has proposed tax benefits for companies that "bring back" jobs from other countries, particularly China, and a "Made in America" tax credit. He has also called for "middle class tax cuts" though it remains unclear what form this would take. We would also expect a Republican sweep to lead to a postponement of corporate tax policies in the 2017 tax law that become more restrictive after 2022.

The economic impact of a blue wave

We look at the potential economic effects of a Democratic sweep under two scenarios—one that assumes the entire range of Democratic proposals are enacted, and one that assumes a scaled-back version of these proposals actually become law.²

With unemployment still high, inflation below target, and the funds rate locked on hold in the near term under the Fed's new framework, we estimate that the proposed Biden policies would translate into a large positive move in the output gap—defined as actual minus potential GDP—with the gap peaking at 3.7pp in 2023 and declining only slightly by the end of 2025. The scaled-down scenario, which represents a more realistic set of policies that Congress might pass, generates a peak output gap of 2.7pp in 2022 that fades more quickly. In both cases, much of the initial boost would come from the assumed fiscal stimulus package, which would substantially raise output both because the increases in government spending and transfer payments are much larger in dollar terms than the tax increases, and because their per-dollar impact is greater.

Biden's proposals would lead to a positive shift in the output gap—defined as actual minus potential GDP Output gap, deviation from baseline, percent

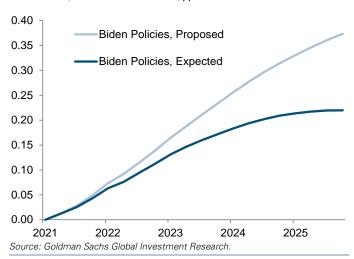


Source: Goldman Sachs Global Investment Research.

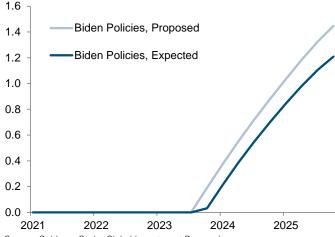
The more positive output gap pushes PCE inflation higher through 2025, by 0.37pp under the Biden proposals and 0.22pp under our assumed legislation. Relative to status quo policies, this pulls forward the point at which core PCE inflation

breaches the assumed 2.1% threshold for liftoff by about two years under the Biden proposals and a little less under the assumed legislation. Put simply, a blue wave could result in funds rate liftoff in 2023, instead of our current forecast of early 2025. Following liftoff, the policy packages imply additional rate hikes at a somewhat guicker pace than without stimulus.

Fiscal stimulus would produce somewhat higher inflation... Core inflation, deviation from baseline, pp



...resulting in an earlier funds rate liftoff Federal funds rate, deviation from baseline, pp



Source: Goldman Sachs Global Investment Research.

Under a divided government, the impact of policy on the output gap, inflation, and Fed policy would likely be much smaller, regardless of who wins the presidential election. It is difficult to make specific projections of these scenarios since the policy outcomes are less certain. That said, our baseline economic assumptions already include an expectation of modest fiscal stimulus legislation in early 2021. Assuming that a divided government election outcome results in few other major policy changes, such an outcome would likely result in little change to our economic or Fed forecasts.

Alec Phillips, Chief Political Economist

Email: <u>alec.phillips@gs.com</u> Goldman Sachs and Co. LLC

² We use the Fed's FRB/US model to estimate the effects of the two policy scenarios. In the scaled-back scenario, we assume that Congress passes the Biden infrastructure proposal at half the proposed spending level, the "Made in America" plan at one-quarter the proposed level, and other social programs like expanded subsidies for health insurance, education, and housing at one-third the proposed level. We assume that taxes increase by roughly half of what the Biden campaign has proposed, including a 25% corporate tax rate and an increase in personal taxes but not the proposal to impose the social security tax on wages over \$400K. In both scenarios, we assume the same fiscal stimulus package, worth roughly \$2tn, which would be enacted in Q1 2021, with spending concentrated in 2021 but continuing over the 2022-2024 period.

Interview with Ian Bremmer

lan Bremmer is President and Founder of Eurasia Group and GZERO Media. Below, he argues that while domestic policy would likely see the most significant shift in decades under a Biden administration, the impact of the election on US foreign policy would likely be more limited.

The views stated herein are those of the interviewee and do not necessarily reflect those of Goldman Sachs.



Allison Nathan: Is the contested 2000 presidential election a reasonable model for what a contested election might look like this year?

Ian Bremmer: The hope is that the election is definitive enough to avoid the scenario of a contested election. But if that doesn't happen and the

result is contested, then the situation would be very different from Bush-Gore. Not only is there substantially more disinformation and distrust in the system today, but there is also a pandemic impacting how people will vote. If you just look at the polls of people who say they plan to vote on Election Day, President Trump wins by over 30 percentage points; if you look at people who say they are voting by mail, former Vice President Biden wins by 60 percentage points. I've never seen numbers like that in my life. And they make a contested election much more likely.

Look, we will have a president—be it President Trump or former Vice President Biden—come Inauguration Day. This election will not mark the end of democracy in our country. But the incredible divisiveness between Trump and Biden supporters, who operate in virtually completely different information silos, raises a real risk that the losing side will not accept the result as legitimate. That has significant implications for social dissent and violence, as well as knock-on effects for the "law and order" agenda. And legislating in that environment will be much harder. That matters because we had all hoped for more fiscal stimulus before the election to provide further support to the people suffering from the effects of the pandemic. But I don't expect more preelection stimulus, and there's a good chance that we won't be doing much legislating after the election if it's contested. So it is a particularly bad time for this type of political turmoil.

Allison Nathan: Would the candidates' agendas differ more on domestic policy or on foreign policy?

lan Bremmer: The differences are far more stark on domestic policy. A Biden victory would likely see the most significant shift in US domestic policy in decades. Biden would drive a strong push towards redistributive policies, including much heavier taxation on the top 1% and even the possibility of a wealth tax if the Democrats win a majority in the Senate and eliminate the filibuster. Corporate taxation would certainly rise, and regulatory policy would be much more intrusive. The Supreme Court would also likely take on a different orientation. And a Biden administration will be even more progressive than the Obama administration on sustainability and climate change.

On foreign policy, however, the differences would be more nuanced and centered around execution, particularly when you consider that a second Trump term will struggle to find the talent it needs given an already-thinning bench. President Trump

is more unilateralist in orientation, but the reality is that American exceptionalism did not start with Trump; almost every US president has pursued some form of it. US policy towards China would be fairly similar under both administrations, with a hawkish approach on issues including Hong Kong and Taiwan, the South China Sea, Chinese human rights abuses, and, most importantly, technology and trade. You might get some constructive engagement with China on North Korea and climate change under Biden, though. In the Middle East, President Trump has achieved a normalization of relations between Israel, the UAE, and Bahrain—with more countries to come—which Biden would fully support, along with the decision to move the US embassy to Jerusalem. And while Biden would try to get the US back into the Iran nuclear deal, Iran would nonetheless remain a fundamentally implacable US adversary in the region. Finally, on Russia, while President Trump has more personal admiration for President Putin than Biden does for the Russian leader, the orientation of the Trump administration towards Russia has actually been quite hawkish, which would persist under a Biden administration. The single biggest foreign policy difference between Trump and Biden would be on Europe, where substantially more alignment between Washington and Brussels would occur under a Biden administration.

Allison Nathan: The market seems to believe that a Biden win would lead to some de-escalation in US-China tensions, particularly on trade. You don't agree?

lan Bremmer: If Biden wins, both the Americans and the Chinese would probably seek a honeymoon period to create some space in the relationship. This is especially true on the Chinese side because this year has been a particularly bad one for President Xi Jinping; his fight has not just been with the US, but with several other countries around the world. But I don't think US tariffs on China would just come off under Biden; China would have to provide something in return. So some initial momentum is possible, but likely only at the margins.

On the big issues, such as a Phase Two trade deal, I have a hard time seeing any real progress. More broadly, the US-China trade relationship that has been predicated for the last 40 years on China's low-cost and hard-working labor force continues to unwind. Many CEOs of manufacturing and service companies tell me that they no longer have a sustainable business model in China given the increased cost of Chinese labor. And the most important US firms—Facebook, Amazon, and Google—don't have access to the Chinese market. That's a serious problem, and it has nothing to do with Trump versus Biden. The decoupling underway between the US and China has causes and manifestations much deeper than who is about to win the US presidential election.

Beyond trade, I have spoken with Biden's team on array of issues, and I don't see much potential for a broad reduction in tensions. Would we see a rollback of the national security law in Hong Kong? Absolutely not. In fact, the Hong Kong issue

probably drives China and the US further apart under Biden. Would we see the Americans pulling back on preventing Huawei, China's national technology champion, from using US semiconductors in their supply chain and focusing efforts on building a Western-led alternative to 5G? No, Biden would lean into that strategy pretty strongly.

One area where we could see a difference is the level of diplomatic engagement between the two countries. Right now, the only serious ongoing high-level conversations between the US and China are happening between US Trade Representative Robert Lighthizer and Vice Premier Liu He, his counterpart in China. That's a problem because any type of accident in the South China Sea or the Taiwan Strait, for example, could escalate significantly without a mechanism to contain it. But if Biden wins, there would be significantly more diplomatic engagement across the top levels of the bureaucracies in Washington and Beijing, which would create some guardrails around the more contentious parts of our bilateral relationship.

Allison Nathan: If Biden wins and the US rejoins the Iran nuclear deal, what would that look like?

lan Bremmer: If Biden rejoins even a somewhat tweaked deal, I just don't see it delivering that much. The reality is that the original Joint Comprehensive Plan of Action (JCPOA) negotiated by the Obama administration, which, to be clear, I favored, was significantly oversold. Yes, it neutralized the biggest threat posed by Iran to the region and to the world-its nuclear program—for 10-15 years, and peacefully at that. But it did not lead to an opening of diplomatic relations between Iran and the US, and was never likely to. It did not end US sanctions against Iran. It did not kick-start US and European oil companies investing in Iranian oil fields. It did not stop the Iranians from ballistic missile testing in contravention of UN Security Council resolutions prohibiting them from doing so. It did not prevent the Iranians from continuing to support proxy wars against the US and its allies in the Gulf. And it did not stop the Iranians from providing advisory, economic and direct military support to what the US considers to be terrorist organizations. None of that would change under a new deal with Iran. The relationships that President Trump has forged with Israel and the Gulf states, which are among the strongest he has built over his four years in office, would continue to be the strongest relationships the US has in the region under Biden, though admittedly not as strong as they were under team Trump.

In terms of timing, I can't see the Supreme Leader allowing significant progress on the nuclear deal before Iranian presidential elections scheduled to take place in June 2021. He won't want to give a win like that to the moderate-led opposition, which could change the current perception that they put together a deal that is unsuccessful for the Iranian government, economy, and national security. But I put the odds at over 50% that we see a deal and a relaxation of sanctions on Iran akin to what was in place before President Trump's unilateral withdrawal from the JCPOA within a year or two later. The recent détente between Bahrain, the UAE and Israel—all of who consider Iran to be their primary adversary—probably makes reaching a deal easier, because it underscores Iran's isolation and limited leverage in the region.

Allison Nathan: Why has the Trump administration been more hawkish on Russia than broadly perceived, and wouldn't Biden move even further in that direction?

lan Bremmer: Russia has received an enormous amount of attention in the US media because President Trump personally admires Russian leader Vladimir Putin. But this personal admiration has not led to a reset in the relationship between the US and Russia given bipartisan opposition to it in Congress. In fact, during President Trump's administration, sanctions motivated by Russia's Crimea intervention have increased, the Ukrainians have received Javelin anti-tank missiles, which they didn't get under President Obama, defense spending of NATO allies has risen, and US troop movements in Europe and placements in Poland have expanded. None of those actions were in Russia's interests. So while a Biden administration would likely create a more united front with US allies against Russia, the actual policy orientation would not be very different.

Allison Nathan: On Europe, would a Biden win take trade disputes between the US and Europe off the table?

lan Bremmer: Trade tensions between the US and Europe would likely remain because of the zero-sum nature of so much of the trade policy debate today, in which supporting your own national companies comes at the expense of foreign competitors, especially coming out of a difficult pandemic period. But I don't think that will drive the relationship. Trade issues have largely driven the relationship during the Trump administration simply because there hasn't been much joint cooperation in other areas. President Trump has generally been a Eurosceptic, supporting Brexit and aligning himself with antiestablishment forces like Viktor Orbán in Hungary. And the social democratic and regulatory orientation of Brussels and leaders like Angela Merkel and Emmanuel Macron has just not jived well with Trump's view of the world. But if Biden assumes the presidency, the US would rejoin the Paris Climate Accord and likely increase its climate target, rejoin the World Health Organization, and proactively engage with Europe on vaccine distribution and a whole host of other issues. So the trans-Atlantic relationship would likely improve significantly under Biden, driven by an effort to create alignment between the world's democracies centered on the US and Europe. I wouldn't be surprised if Biden's first trip out of the country, should he be elected, were to Europe.

Allison Nathan: What will be the most pressing foreign policy challenge over the next four years?

lan Bremmer: Without a doubt, the most pressing issues will be the US-China relationship and, more broadly, the future orientation of global technology and data, which are closely connected. These areas will determine not only how the global economy works, but also whether the future orientation of society and humanity is towards or against democracy. A closely related priority will be climate change. But keep in mind, without cooperation between the Americans and the Chinese, it will be very difficult to accomplish much globally on technology, climate change or most other important issues.

Where they stand on key issues

Biden

- Increase top individual tax rate for taxpayers with incomes above \$400K to 39.6% from 37%
- Tax long-term capital gains and qualified dividends at the ordinary income tax rate for incomes above \$1mn
- Impose payroll tax on wages earned above \$400K
- Cap the value of itemized deductions for high earners
- Phase out business income deduction above \$400K
- Increase 401(k)/IRA incentives
- Expand a number of tax credits including the Earned Income Tax Credit for childless workers aged 65+ and renewable-energy tax credits for individuals

• Increase the corporate income tax rate from 21% to 28%

- Increase the tax rate on Global Intangible Low Tax Income (GILTI) earned by foreign subsidiaries of US firms from 10.5% to 21%
- Impose a minimum 15% tax on US-based corporations with a book profit of \$100mn or higher
- Reduce real-estate tax preferences
- Offer a Manufacturing Communities Tax Credit to businesses that experience large workforce layoffs
- Expand the New Market Tax credit for investment in lowincome, distressed communities
- Provide tax credits to small businesses for adopting workplace retirement savings plans

Increase federal spending on goods made by US workers by \$400bn

- Take aggressive enforcement actions against China and rally US allies to pressure China and other trade abusers
- Confront foreign efforts to steal US intellectual property
- Establish a "claw back" provision to force companies to return public funds when they move jobs overseas

Trump

- Extend the individual income and estate tax provisions included in the 2017 Tax Cut and Jobs Act (TCJA)*
- Reduce payroll taxes
- Reduce capital gains tax rate

First term policy actions:

- Reduced most individual income tax rates, including the top marginal rate to 37% from 39.6%
- Increased the standard deduction and eliminated the personal exemption
- Expanded the child tax credit
- Raised the exemption on the alternative minimum tax
- Offer "Made in America" tax credits to companies bringing jobs back to the US
- Introduce 100% expensing for essential industries that bring jobs back to the US
- Expand Opportunity Zones

First term policy actions:

- Lowered the corporate income tax rate to 21%
- Created a 20% deduction of qualified business income for certain pass-through businesses
- Established immediate expensing of short-lived capital investments for five years
- Limited the deductibility of net interest expense
- Allowed for repatriation of foreign profits at reduced rate
- Moved from a worldwide to territorial taxation system
- Eliminated the corporate alternative minimum tax
- Enact fair trade deals that protect American jobs

First term policy actions:

- Imposed tariffs on Chinese imports; Phase 1 trade deal
- Signed US-Mexico-Canada Agreement (USMCA) to replace NAFTA
- Signed revised FTAs with South Korea and Japan
- Withdrew from the Trans-Pacific Partnership (TPP)
- Imposed tariffs on steel and aluminum imports on national security grounds
- Implemented domestic safeguards for solar panels and washing machines

• Invest in America's infrastructure

 Establish a national high-speed wireless internet network/ invest in 5G networks

Infrastructure

Corporate Tax

- Create a \$2tn clean energy and infrastructure fund to be deployed during the first term with a focus on transportation funding
- Invest \$300bn in domestic R&D to improve US systems (clean energy, public health, telecoms and infrastructure) and promote domestic production
- Expand broadband, or wireless broadband via 5G, to all Americans
- Raise federal minimum wage to \$15/hour and index to the median hourly wage
- Ban state-level "right to work" laws
- Establish a federal right to union organizing and collective bargaining for all public sector employees

• Bring back manufacturing jobs from China

Immigration

- Establish a roadmap to citizenship for unauthorized migrants currently in the US
- End the practices of keeping immigrants in long-term detention, separating families, and conducting large-scale raids to arrest unauthorized migrants already living and working in the US
- Reinstate the DACA program
- Increase the number of employment-based visas granted each year and eliminate country-based quotas
- Raise yearly cap on refugees admitted to the US to 125K
- Reverse the expansion of the "public charge" rule

- Block illegal immigrants from becoming eligible for taxpayer-funded benefits
- Establish mandatory deportation of non-citizen gang members
- End sanctuary cities
- Prohibit American companies from replacing US citizens with lower-cost foreign workers

First term policy actions:

- Implemented ban on travel of citizens from 7 countries to the US that was expanded to cover 13 countries
- Attempted to end the Deferred Action for Childhood Arrivals (DACA) program
- Prioritized border-wall construction
- Instituted "zero tolerance" policy on illegal border crossings
- Lowered yearly cap on refugees admitted to US to 18K

Healthcare

Education

Energy

- Provide individuals with the ability to purchase a public health insurance option like Medicare
- Eliminate income-level cap on tax credits for individuals purchasing insurance on government exchanges and lower the limit on the cost of coverage
- Lower the Medicare eligibility age from 65 to 60
- Allow for direct Medicare negotiation of drug prices
- Spend \$125bn over 10 years to scale up drug addiction treatment and other prevention and recovery programs

• Provide grants to states that want to eliminate tuition at

public colleges and universities for students from families

- Reduce prescription drug prices
- Lower healthcare premiums
- End surprise billing
- Cover all pre-existing conditions
- Protect veterans and provide them with high-quality healthcare and services

First term policy actions:

Repealed the individual mandate penalty created by the Affordable Care Act

- with <\$125K in income • Offer free tuition at all community colleges
- Create universal pre-K
- Double the size of the maximum Pell Grant award
- Offer public servant loan forgiveness
- Make income-based repayment of student loans more generous
- Increase K-12 education funding for low-income schools

· Provide school choice to every child in America

- Achieve carbon neutrality in the US by 2050
- Achieve a carbon-pollution free power sector by 2035
- Rejoin the Paris Climate Accord and rally other nations to increase their emissions reduction targets
- Impose a carbon adjustment fee against countries that are failing to meet their climate and environmental obligations
- Expand several renewable-energy tax credits and end subsidies for fossil fuels
- Invest in the US automobile infrastructure, including 500K electric vehicle charging stations
- Upgrade 4mn buildings/weatherize 2mn homes in 4 years

Continue deregulation to achieve energy independence

First term policy actions:

- Withdrew from the Paris Climate Accord
- Repealed the Clean Power Plan
- Lifted the ban on oil and gas exploration in the Arctic National Wildlife Refuge, US coastal waters, and elsewhere
- Rescinded most of the 2016 Methane Waste Prevention rule limiting venting and flaring on public lands

• Promote community-oriented policing

- Expand the power of the US DOJ to address misconduct in police departments and prosecutors' offices
- End mandatory minimums
- End all incarceration for drug use alone

- Fully fund and hire more police officers
- Increase criminal penalties for assaults on police officers
- End cashless bail and keep criminals locked up pre-trial

First term policy actions:

• Passed First Step Act federal criminal justice reform

Note: Intended to provide an overview of the candidates' top priorities as detailed by their campaigns rather than an exhaustive list of all policies; the Trump campaign hasn't formally expressed its intention to extend the expiring provisions of the Tax Cuts and Jobs Act, but the Trump Administration included provisions to do so in its 2021 budget proposal

Source: Campaign documents, media sources, Tax Foundation, Tax Policy Center, Committee for a Responsible Federal Budget, Peterson Institute for International Economics, Brookings Institute.

Growth vs. Value and the election

Ben Snider argues that the US election could prove a catalyst for a rotation away from growth stocks toward more cyclical parts of the market

The surprising resilience of the US equity market this year alongside the sharpest and deepest recession on record belies extraordinary dispersion below the surface of the market. The S&P 500 has returned 6% YTD and 49% since it's March low, outperforming the MSCI World index over both of those horizons. However, the US market's strength is largely attributable to its tilt toward growth stocks: The S&P 500 Growth index has returned 21% YTD while the Value index has declined by 11%.

In particular, the S&P 500's largest stocks represent some of the best-performing and fastest-growing companies in the market. Facebook, Apple, Amazon, Microsoft, and Alphabet the five largest US stocks—have returned a weighted average of 42% this year, while the other 495 constituents have collectively declined by 2%.

Five largest US stocks have returned 42% YTD Indexed YTD return



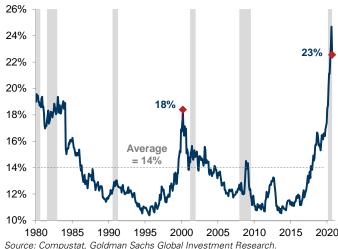
Source: FactSet, Goldman Sachs Global Investment Research.

The marked outperformance of the growth stocks that already ranked as the largest in the market has lifted US equity market concentration to the highest level on record. The top five stocks now account for nearly 25% of S&P 500 market cap, exceeding even the 18% share accounted for by the top stocks at the peak of the Tech Bubble in 2000.

While most investors have benefitted from the outperformance of growth stocks, the extreme level of market concentration has generated concern about the risk inherent in such a narrow market. Record concentration means the market has never been more dependent on the continued strength of its largest constituents or more vulnerable to an idiosyncratic shock to any of these stocks. The degree of institutional and individual investor crowding in the largest growth stocks adds to the risk. As a result, investors have increasingly wondered about the potential catalyst for a decline in concentration and market

rotation away from high momentum growth stocks toward recent laggards.

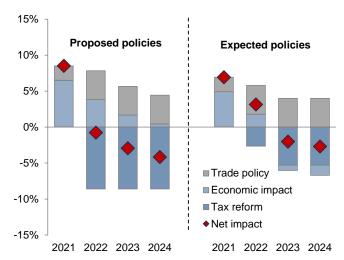
US equity market concentration is the highest on record Market cap of 5 largest companies as share of S&P 500 total



The election: a potential catalyst from growth to value

Depending on the outcome, we believe the upcoming US elections could increase the likelihood of a market rotation away from the growth stock leaders toward more cyclical parts of the market. The Biden-Harris policy agenda has a variety of components that many equity investors view as a mixed bag with regards to their likely impact on stock prices. A number of the key policy proposals—including some that are perceived to be equity-friendly and some that aren't—would likely support such a rotation, in the event that Democrats win control of the Congress and White House and can implement that agenda.

Biden-Harris policy agenda a mixed bag for equities Estimated S&P 500 earnings impact of Biden-Harris policies, %



Source: Goldman Sachs Global Investment Research.

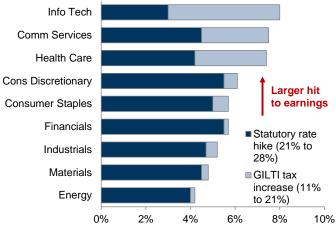
First and foremost, the large fiscal expansion proposed by the Biden campaign would likely boost economic activity and inflation expectations, which could reduce both the earnings and valuation superiority carried by growth stocks. One reason for the strong performance of growth stocks in 2020 and recent years has been the scarcity of economic growth, which has made the idiosyncratic growth prospects of stocks that are

able to generate earnings particularly attractive. A fiscal expansion that increases economic activity would reduce this scarcity premium and particularly improve the nominal earnings outlooks for cyclical stocks highly levered to economic growth. The likelihood of easier trade policy in the event of a Democratic victory also increases potential earnings upside for cyclical stocks.

The expected increase in spending would also likely lift the long end of the US Treasury curve, reducing the record valuation premium currently reflected in growth stocks. Our fundamental model shows that record-low interest rates have made equity duration—the value of long-term growth—more important than ever in determining stock valuation multiples. Although interest rates are unlikely to rise much, even a modest increase in Treasury yields would lift the equity discount rate and reduce the exceptional current value of long-term growth.

The other side of fiscal expansion is tax reform. The potential for higher corporate tax rates following a Democratic sweep represents a broad risk to corporate earnings and equity prices. However, the specific reforms proposed by the Biden campaign also appear likely to support a rotation within the market. The 2017 TCJA tax cuts had the largest impact on the earnings and share prices of cyclical stocks, and many investors expect that a corporate tax hike following a Democratic sweep would weigh disproportionately on these same sectors. However, in addition to a higher statutory rate, the Biden plan also includes proposals including a minimum corporate tax rate and a higher tax on low-tax foreign income not tied to tangible assets (known as the "GILTI" tax). Including these proposals, the combined earnings impact of the Biden tax plan would likely be greatest for the Growth-y Communication Services, Health Care, and Information Technology sectors. Our political economists' expectation that eventual legislation would include a smaller statutory rate hike than currently proposed further tilts the likely impact of tax reform in favor of market rotation.

Potential impact of select tax proposals on sector earnings Reduction in sector EPS from baseline



Source: Goldman Sachs Global Investment Research.

The possibility of a capital gains tax rate hike further increases the risk that tax reform leads to a momentum reversal within the US equity market. The Tech and Consumer Discretionary sectors have led the market this year and have also been the largest sources of capital gains within the US equity market during the last 3, 5, and 10 years. Past capital gains tax hikes have been associated with short-term reductions in US household allocation to equities as well as the underperformance of high-momentum "winners" that had delivered the largest gains to investors ahead of the rate hike, although these dynamics were generally short-lived and reversed following the tax change.

The consensus view in our conversations with investors is that a Democratic victory would also increase the risk of anti-trust regulation targeting some of the largest US technology companies. Although recent headlines suggest the Trump administration's Justice Department is preparing to file a lawsuit against Google, investors generally believe a unified Democratic Government would be more likely to take legislative and legal action.

Reasons for rotation beyond the election

Despite the ongoing volatility of the equity market and the macro landscape, stock price action in recent months supports the argument that the election could become a catalyst for market rotation. In the last few months, the relative performance of our Cyclical and Defensive baskets has correlated with Superforecaster odds of a Democratic sweep in November.

Cyclicals have rallied on rising odds of Democratic sweep Cyclicals vs. defensives (lhs), probability of Democratic sweep (rhs)



Source: Good Judgement Project, Goldman Sachs Global Investment Research.

Other factors besides the election also suggest a rotation from outperformance of growth to value stocks. Our base case for the macro outlook is that the approval of a vaccine later this year accelerates the ongoing economic recovery. In the past, sharp economic accelerations have often driven investors to rotate from expensive growth stocks to low valuation cyclicals, and we expect the same dynamic will occur this cycle. In recent months, shifting vaccine probabilities have been most positively correlated with the performance of value stocks and most negatively correlated with the Technology sector and other growth stocks. So, regardless of the election outcome, a rotation within the equity market appears likely in coming months.

Ben Snider, US Equity Senior Strategist

Email: <u>ben.snider@gs.com</u>
Tel: 212 357-1744

Goldman Sachs and Co. LLC

Asset impacts of election outcomes

	Summary Views	Biden win and Democratic Congress	Biden win and Divided Congress	Trump win and Divided Congress
Equities	The path of the economic and corporate earnings recovery, alongside easy monetary policy, points to medium-term upside for equities regardless of the election outcome. However, the potential for tax reform and elevated policy uncertainty following a Democratic sweep would likely lead to higher volatility and less equity market upside in the near term.	The combined effects of higher corporate tax rates, more fiscal stimulus, and lower tariffs would likely result in a similar level of medium-term S&P 500 profits as we assume in our baseline forecast that incorporates no major policy changes. The eventual impact will depend on the sequencing and relative size of these policies. Elevated policy uncertainty, particularly regarding capital gains taxes, would increase the equity risk premium and weigh on valuations in the near term. A Democratic sweep would likely lead to the outperformance of cyclical stocks relative to the recent growth stock market leaders.	A divided Congress would likely lead to a reduction in policy uncertainty, supporting equity valuations. An easing of global trade tensions under a Biden administration could also improve the outlook for corporate earnings and reduce the risk premium.	A Trump presidential win and a divided Congress would likely still lead to a reduction in policy uncertainty, supporting equity valuations. Healthcare stocks, which currently trade at a record valuation discount to the market, would also likely outperform in this scenario.
Credit	The key policy areas to watch for corporate credit are tax reform and fiscal stimulus. The size and sequencing of each under the different election outcomes will matter meaningfully for corporate credit fundamentals and the ability of companies to reduce their debt.	Proposals to increase tax rates on domestic and certain foreign income would likely have negative implications for corporate credit quality and could lead to passive re-leveraging as it becomes harder for companies to reduce debt. This would be especially problematic for sectors most vulnerable to social distancing and indoor business restrictions—Lodging, Gaming, Retailers, Airlines, Restaurants—as they would add to persisting headwinds from the pandemic. A large fiscal stimulus could offset these effects, but the sequencing of stimulus and tax hikes will matter meaningfully for corporate credit fundamentals.	Tax rates may still increase under a divided Congress, although potentially not as much as in the scenario of a Democratic sweep, leading to less negative implications for corporate credit quality and corporate leverage. But smaller fiscal stimulus would create a smaller offsetting effect to higher tax rates. As in a Democratic sweep, the sequencing of these priorities will matter for corporate credit fundamentals.	Corporate statutory tax rates are unlikely to increase under this scenario, allowing companies to maintain the original benefit of the 2017 tax reform. This would be more helpful for credit fundamentals and the ability to reduce debt. However, we also expect much less fiscal stimulus in this scenario.
G10 FX	We continue to see a good case for sustained US Dollar weakness, reflecting the greenback's high valuation, deeply negative interest rates in the US, and a recovering global economy. A Democratic sweep could likely accelerate this trend, while other election outcomes would likely imply less Dollar weakness and affect the performance of certain crosses.	Biden's proposals to raise corporate taxes and enact regulatory changes—particularly in the technology sector—could make US equities less attractive than international assets. Combined with large fiscal stimulus, these would likely accelerate the trend of US Dollar weakness.	A divided Congress that results in a more constructive US approach to global trade but less fiscal stimulus and a smaller boost to growth should imply less Dollar weakness than under a Democratic sweep.	A Trump presidential win and Republican Senate control would likely benefit the Dollar, especially vs the Euro and Yuan.

Our economists' baseline • A smaller fiscal Large fiscal stimulus expected case for a robust recovery • A smaller fiscal stimulus with a Democratic sweep would stimulus and even without further under a divided Congress accelerate the domestic economic potentially stimulus argues for an would likely result in less recovery and likely weaken the continuing trade upward yield trajectory. A steepening of the Dollar, possibly leading to higher tensions means any Democratic sweep, which nominal yield curve than yields and a steepening of the repricing of yields could result in a large in the event of a nominal yield curve. higher on a bounce Democratic sweep. fiscal boost, could speed • This suggests that investors with in risk sentiment is up and amplify the medium- to long-run horizons likely to be limited. increase in yields and should reduce portfolio duration and consider other hedges for steepening of the curves. risky assets. This should be more pronounced in US rates, though there could be significant spillovers to other DMs. • A divided Congress that • The larger fiscal stimulus and • A Trump friendlier trade and tariff results in a more presidential win will constructive US policies under a Democratic likely lead to a approach to global sweep are most helpful to EM redoubling of the trade but less fiscal equities, given their large "America First" stimulus and a smaller exposure to the Asian region. A trade agenda, and boost to growth should cyclical rotation within US equities we would therefore **Emerging Markets will** imply less Dollar could see EM equities outperform expect EM assets take their cue from weakness than under a their DM counterparts after any to underperform, **Emerging Markets** whether the incoming Democratic sweep. initial knee-jerk selloff. with CNY and Asian administration adopts Such a scenario could • This scenario should also benefit equities under the policies that boost global CNH and MXN, and provide a result in Yuan most pressure growth and trade. headwind for RUB in the first half outperformance vs the following recent Without those twin of a Biden term. more risk-sensitive EM strength. tailwinds, high beta EM · But in the second half of Biden's and G10 currencies. • A longer period of assets will remain term, large fiscal stimulus could • This scenario should also lower rates will pull forward Fed rate hikes, volatile, opportunities will benefit investmentsee core rates stay lower be more tactical, and EM resulting in greater headwinds for grade EM Credit for longer and support EM fixed income returns. assets will likely EM fixed income. and low-yielder · High-vield EM fixed rates underperform their DM income—both local and counterparts. USD—may be the prime beneficiary of a divided Congress given its relatively attractive yields and some embedded cyclicality. We expect gradually • A large fiscal stimulus would • A divided Congress • The status quo recovering global demand support US oil demand in coming would likely lead to a would likely mean and a significant years, even if the likely support watered down version of no limitation on reduction in production for renewables is ultimately a Democratic sweep. shale activity and capex will lead to higher destined to replace fossil fuels. with smaller fiscal potentially more stimulus and investment energy production • Higher taxes would increase the commodity prices, cost of extracting shale oil, with but still a focus on a from areas that had especially oil prices, over Commodities potential limitations on federal transition towards clean previously been the next 12 months, land drilling further reducing total energy. banned for regardless of the election • Regulation on shale recoverable resources. environmental outcome. A Democratic would likely be limited to • The greater probability of an Iran factors. administration would deal could result in more Iranian federal permitting • A deal with Iran likely create mostly restriction. would still be oil eventually returning to the offsetting shifts: (1) a market, although any deal would possible but the higher cost of shale likely have stricter terms than the likely stricter terms production, (2) a larger previous JCPOA deal. would make it less stimulus supportive of US likely in the next • Greater support for EVs and oil demand but (3) renewables would likely hasten couple years. potentially greater the decline in US oil demand, but meaningful demand impacts likelihood of an Iran would likely not be felt until the agreement. 2030s.

Thanks to Damien Courvalin, Praveen Korapaty, Amanda Lynam, Zach Pandl, Ben Snider, Kamakshya Trivedi.

Interview with Nathaniel Persily

Nathaniel Persily is James B. McClatchy Professor of Law at Stanford Law School and Co-Founder of the Stanford-MIT Healthy Elections Project. Persily is a scholar of constitutional law, election law and the democratic process. Below, he discusses how a large increase in mail-in ballots may affect the timing of the 2020 election outcome, and what the legal process for resolving a contested election would look like.

The views stated herein are those of the interviewee and do not necessarily reflect those of Goldman Sachs.



Allison Nathan: Is there any legal or constitutional route in which the election itself could be delayed at this point?

Nathaniel Persily: There is no way that the president of the United States can delay the election. It's theoretically possible that individual state legislatures could either delay the

election in case of emergency or decide to choose the electors themselves—a power bestowed upon them by the Constitution. To be clear, the United States does not have a national vote for president. Each state chooses electors to the Electoral College, and whoever wins the most electors becomes president. These days, states allow individual voters to determine the electors they send to the Electoral College. But this practice is not actually stated in the Constitution; rather, the Constitution says that state legislatures have the power to decide how electors will be chosen. And, in fact, during some periods in the 1800s, state legislatures directly chose their electors. All that said, ballots are already out the door to voters. So if state legislatures decided to pursue such an option at this point, it would cause a whole other set of constitutional problems.

Allison Nathan: One of the largest differences in holding an election amid a pandemic is a likely larger volume of absentee and mail-in ballots. How do state rules around the handling of these ballots differ?

Nathaniel Persily: States differ considerably in the ways that they handle absentee ballots, starting with rules on when an absentee ballot must be received to be counted. Some states require that a ballot be received by Election Day; other states allow ballots to be postmarked by Election Day and received and counted up to two weeks after Election Day. Rules on the processing of ballots—meaning, verifying signatures and confirming the identity of the voter for each ballot to ensure that the ballot isn't fraudulent—also differ between states. Some states will allow ballots to be processed up to three weeks before Election Day, and some states wait until the polls close on election night before processing any ballots. But ballots are generally not counted before Election Day.

Allison Nathan: Are states prepared to deal with the increase in absentee ballots—and other pandemic-related peculiarities—in this election?

Nathaniel Persily: Different states are better or worse positioned to handle the rush of absentee ballots. Some states, like Arizona and California, have had rates of absentee balloting of over 75% in recent elections. For them, moving from 75%

to, say, 90% won't be that difficult. But states like North Carolina, Wisconsin, and Pennsylvania, which have historic rates of 5% absentee balloting or less, will face a real challenge in handling the surge in mail-in ballots.

That said, these states have been well aware of this challenge for months now. And, in some respects, the dysfunction that occurred in the primary elections was the best thing that could have happened to the system, because it alerted election administrators to what needed to be done to improve the process for the general election. So states and localities have invested hundreds of millions of dollars in retrofitting their entire election machinery and infrastructure to address the surge in absentee ballots and other considerations amid the pandemic. Generally speaking, I think they are now up to the task, perhaps with the exception of the states where the legal regime won't allow absentee ballot processing before election night; no amount of machinery will likely adequately prepare those states for the challenge ahead. It's worth noting that key states like Michigan and Pennsylvania are among those states, so that is a concern.

Allison Nathan: So how likely is it that we won't know the outcome of the election on election night?

Nathaniel Persily: There is no chance that we will know the result in the sense that all votes will be counted on election night. But, truthfully, that's typically the case; even in normal elections with a lower number of mail-in ballots, counting all votes takes days or weeks. We may still have a good idea of the victor on election night, though, depending on the margin of victory. For example, if Florida is tied or Biden is winning in Florida on election night, we'll know that he has won the election. But if this election is more like the 2016 election, where it all comes down to the battleground states of Michigan, Wisconsin, and Pennsylvania—and there are a million or more absentee ballots outstanding—determining a winner might take a week or more. This is the scenario that election administrators dread. In fact, there is something called the "election administrators' prayer": "Dear Lord, whatever happens, please don't let it be close." In a close election, every aspect of the election administration system comes under scrutiny, and is seen as potentially outcome determinative. And if you are looking for problems in the mail balloting process or on Election Day, you will find them in this election.

Allison Nathan: Is there any evidence to support the idea that mail-in voting is more vulnerable to fraud than inperson voting, or that it favors one party over another?

Nathaniel Persily: Generally speaking, political scientists who have looked at the problem of fraud in mail-in voting have not found significant instances of fraud. To be sure, there are

always mistakes and bad actors in all modes of voting, but we don't see higher incidences of fraud in states that only employ mail-in balloting versus those that don't. And states have processes in place to ensure that instances of fraud—like voting both by mail and in person—don't occur. For example, depending on the state, if you mail in your ballot and show up to the polls, either your mail ballot will be cancelled or the provisional ballot you're given on Election Day will be cancelled.

In terms of whether mail-in voting favors one party over another, historically, different parties have benefited at different times from absentee ballots. For much of the last 20 years, Republicans seemed more likely to benefit from absentee balloting. In recent years, however, more Democrats have voted by mail. That is likely partly the result of organized mail-balloting efforts by the Democratic Party, but it's also likely a function of the fact that states that have complete mail balloting, including Oregon, Colorado, Washington, and Hawaii, tend to lean Democratic. The same is true in California—a disproportionately Democratic state where two-thirds of voters have voted by mail in recent elections. So more Democrats than Republicans tend to vote by mail today, but there's nothing inherent about absentee or mail balloting that is more favorable for one party or another.

Allison Nathan: Could the larger number of Democratic absentee voters lead to increased confusion on declaring a winner on election night?

Nathaniel Persily: That is indeed possible. One thing that people generally don't understand is that there is no national election authority in the United States, so there is no agency or person who declares the winner. Media organizations are the ones who declare which candidate has won the electoral votes of a given state, and, ultimately, which candidate has accrued enough electoral votes to win the election.

In this election, there is some concern about a so-called "red mirage and blue shift," in which the larger number of Republican voters set to go to the polls on Election Day will lead networks to prematurely call the election for President Trump—the "red mirage"—but as the absentee votes get counted, there will be a "blue shift," with Biden ultimately winning the election. In fact, that pattern played out in the 2018 election as congressional races in California in particular flipped from Republican to Democrat. But the decision desks at the networks are well aware of this issue, so they are likely to wait until they have substantial information about total votes in a state before they call it for one candidate or the other.

Allison Nathan: A substantial number of lawsuits already surround this election. Could any of these lawsuits have bearing on the election outcome?

Nathaniel Persily: The number of lawsuits filed in this election season—over 300—is on track to break historic records of litigation surrounding an election. The most interesting litigation concerns absentee balloting, including, for example, cases from Democrats that are asking for courts to allow the counting of any ballot that has a postmark of Election Day or earlier, regardless of when it is received, or some states' rules that require a medical excuse for an absentee ballot, and whether COVID-19 concerns will qualify as a legitimate excuse. In the

event of a close election like we had in 2016, the outcome of such lawsuits could be important. And as we get closer to the election, of particular interest will be litigation concerning signature matching on mail-in ballots, and whether voters will be able to cure any deficiencies that come out in the administrative process.

Allison Nathan: If the election results are contested based on claims of voter fraud or voter suppression, what would the legal process to resolve the dispute look like?

Nathaniel Persily: Controversies over presidential elections are generally resolved at the state level. Each state has procedures for recounts and the validation of absentee ballots to address potential disputes. And, in an extreme case in which the entire integrity of a state's election is in dispute, the state legislature has the right to directly appoint electors to the Electoral College. State courts are the first line of defense to deal with any controversies around these processes.

If a party rejects the outcome validated by the state's administrative and judicial system, the Constitution and federal law can resolve the controversy. The 12th Amendment of the Constitution and the Electoral Count Act under federal law dictate that Congress can decide the slate of electors for a given state in a contested election. However, Congress has never before resolved a contested election. Instead, controversies of significant magnitude under the US Constitution have been kicked up to federal courts and, ultimately, to the US Supreme Court. A Supreme Court decision on which candidate has won the state is not necessarily definitive, but naturally carries substantial weight. Such was the case with the Bush v. Gore Supreme Court decision that resolved the dispute over the Florida recount in the 2000 election. Ultimately, if all of these processes don't determine an election victor by the expiration of the president's term of office on January 20, 2021, the Succession Act comes into play, and the Speaker of the House would assume the presidency.

Allison Nathan: What are the important deadlines to be aware of between now and then?

Nathaniel Persily: Federal law presumes that following the election on November 3, all ballots will be counted and any disputes will be resolved by December 8, and that the victor in each state will then be the presumptive winner of the state's electors under the Electoral Count Act. On December 14, the Electoral College will meet, and each state will formally announce the winner of the state's Electoral College votes. These votes are technically counted on January 6, 2021 with the newly elected Congress. And the president-elect would then assume the presidency on January 20.

Allison Nathan: Given the complexities of this election, what will you be watching on election night for insight into the potential election outcome?

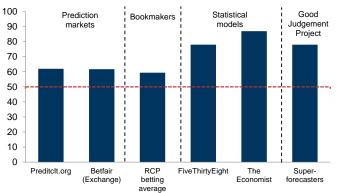
Nathaniel Persily: I'll be watching the election returns from individual counties across states that have fully reported results, to see how much better or worse President Trump is faring relative to the 2016 election. To me, that will the best indicator of what's happening nationally in this unique election.

Polls vs. prediction markets

Blake Taylor digs into the difference between polls and prediction markets, and what it means

Former Vice President Biden leads President Trump in the polls by a wide margin: about 7pp nationally and 5pp in likely swing states. Popular polls-based statistical models and the Good Judgment Project's Superforecasters currently place Biden's chances of winning the election at 75-85%. Prediction markets, however, imply a more competitive election, placing the odds of a Biden and Trump win at roughly 60% and 40%, respectively. So which approach is more "right," and what can we learn from the difference between them?

Odds of a Biden victory depend on where you look Implied probability of former VP Biden winning the 2020 election, %



Source: PredictIt, RealClearPolitics, FiveThirtyEight, The Economist, Good Judgment Project, Goldman Sachs Global Investment Research.

The pros and cons of prediction markets and polls

In theory, prediction markets have two key advantages over other election forecasting approaches. First, prediction markets offer monetary incentives that encourage honest forecasts and reward information discovery. Second, prediction markets include thousands of participants and therefore better capture the wisdom of the crowd compared to a single statistical model or poll-based survey. But prediction markets also have some inefficiencies: transaction costs can discourage activity on the margin, markets can be illiquid or even manipulated, and participants can take irrational positions.

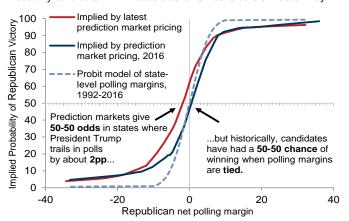
Polls, on the other hand, offer direct insight into voter intentions. National polls represent likely national popular vote margins. However, state-level polls—especially in swing states—are more useful in assessing the outlook for winning the Electoral College, which determines the election victor. At the state level, polls have accurately predicted over 90% of state elections since 2000 when the margin was at least 2pp. But polls also have shortcomings. Pollsters must make assumptions about demographics and voter turnout that can heavily influence the estimated margin of victory. In most elections, a small number of state-level polls usually miss the actual result, and in very close elections these errors can end up misstating the competitiveness of the Electoral College. Given these shortcomings, both polls and prediction markets are worth watching, with prediction markets in particular tending to perform just as well as other types of forecasts in calling election winners.

A cautious 2020 prediction market

The relationship between polls and prediction markets ahead of this year's election is notable, with the spread between the two reflecting increased caution that polls may be underestimating support for President Trump. In 2016, prediction markets on average assigned roughly 50-50 odds to elections in states where President Trump and Secretary Clinton's polling margins were about tied, in line with the historical record of state-level poll accuracy. In the most competitive elections, prediction markets tended to give Clinton the benefit of the doubt.

In contrast, prediction markets today see state-level elections as 50-50 tossups only when polling margins favor Biden by about 2pp, and in states where polling is basically tied, prediction markets generally give President Trump an edge. In other words, prediction markets expect President Trump to outperform the polls this year. Prediction markets also appear less confident than historical polling performance would suggest, assigning a lower probability that Biden will win elections in states where he leads in the polls compared to the historical probability of polls accurately predicting the outcome.

Prediction markets are more cautious on a Biden win Probability candidate will win state election 5 weeks before Election Day



Source: Federal Election Commission, Polling data from FiveThirtyEight, Goldman Sachs Global Investment Research.

We see three reasons why prediction markets may be out of step with the polls for the upcoming election. First, observers may feel the coronavirus pandemic, higher rates of mail-in voting and the continued effects of the recession could make the election harder to predict. Second, some observers may view polls as less reliable after they understated President Trump's level of support in key states in the 2016 election. And, third, there seems to be a growing belief that polls do not accurately capture Trump's support because some voters misrepresent their preferences to pollsters. However, a recent polling experiment found no evidence supporting such an idea.

Given the unusual nature of 2020 and high levels of uncertainty around voter turnout this year, the caution in prediction markets relative to historical polling is not surprising. But as Election Day draws nearer it appears there is scope for prediction markets to approach or converge with the historical trend.

Blake Taylor, Political Economist

 Email:
 blake.taylor@gs.com

 Tel:
 202 637-3756

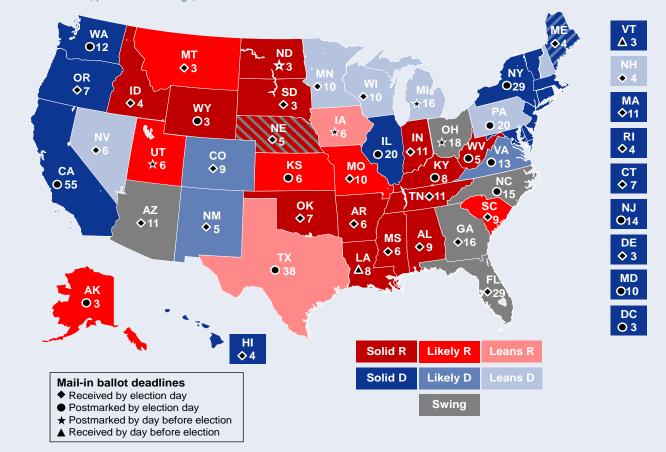
Goldman Sachs and Co. LLC

US Electoral College, explained

- The US presidential election is held every four years on the Tuesday after the first Monday in November. Voters do not, technically, participate in a direct election of the president. They choose "electors", who are pledged to one or another candidate. This "Electoral College" was established as a compromise between a congressional and popular vote. The Electoral College consists of 538 electors. A majority of 270 electoral votes is required to elect the President.
- Each state has a certain number of electors to the college, based on the size of its population. Specifically, each state's entitled allotment of electors equals the number of members in its Congressional delegation: one for each member in the House of Representatives plus one for each of its two Senators.
- In almost every state, the winner of the popular vote gets all the Electoral College votes in that state. Because of this system, a candidate can take the White House without winning the popular vote. The exceptions to this are Maine and Nebraska, where the state winner receives two Electors and the winner of each congressional district receives one Elector. The District of Columbia is allocated 3 electors and treated like a state for purposes of the Electoral College.
- On the first Monday after the second Wednesday in December after the presidential election, the electors meet in their respective states, where they cast their votes for President and Vice President on separate ballots. Each state's electoral votes are counted in a joint session of Congress on January 6th in the year following the meeting of the electors. The Vice President, as President of the Senate, presides over the count and announces the results of the vote. The President-Elect takes the oath of office and is sworn in as President of the United States on January 20th in the year following the Presidential election.
- If no Presidential candidate wins 270 or more electoral votes, the House of Representatives decides the Presidential election. The House would elect the President by majority vote, choosing from the three candidates who received the greatest number of electoral votes. The vote would be taken by state, with each state having one vote. It would be up to the representatives from each state to decide amongst themselves how their state would cast its one vote. The Senate would elect the Vice President by majority vote, choosing from the two candidates who received the greatest number of electoral votes. The vote would be taken by Senator, with each Senator having one vote. Since DC has no state delegation in the House and has no senators, it is not represented in either vote. If the House fails to elect a President by Inauguration Day, the Vice-President Elect serves as acting President until the deadlock is resolved in the House.

The votes

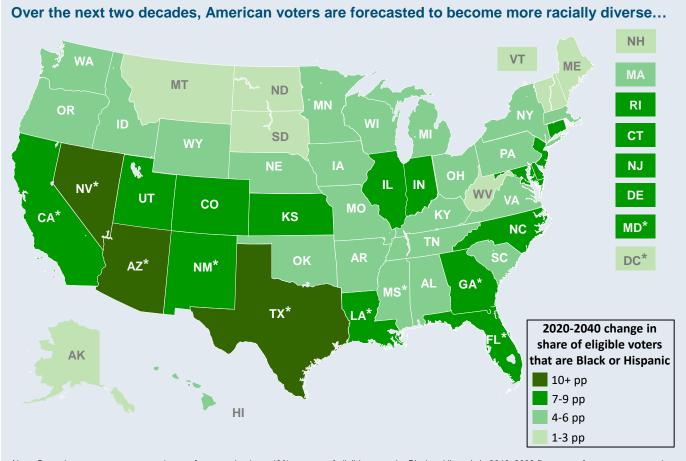
US electoral votes, presidential leanings, and state deadlines for mail-in ballots to be counted



Note: Mail-in ballot deadlines and presidential leanings are current as of September 29, 2020. Source: State election offices, media sources, 270towin, Goldman Sachs Global Investment Research.

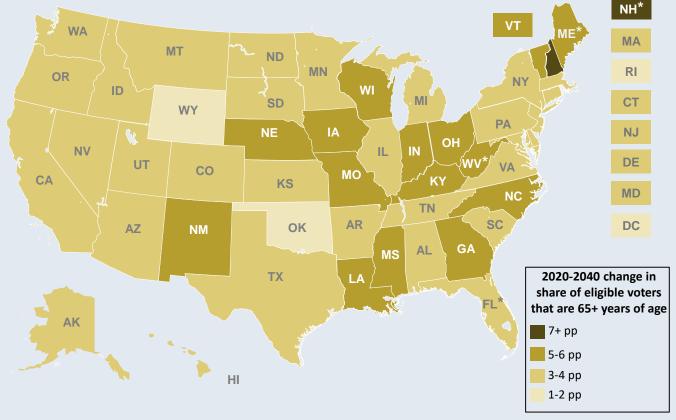
¹ For a discussion of the resolution process around a disputed election (rather than an electoral tie), see pages 18-19 of Nathaniel Persily's interview. Source: National Archives and Records Administration (NARA), US Federal Register.

US voters: a changing demographic



Note: Starred areas represent states that are forecasted to have 40% or more of eligible voters be Black or Hispanic in 2040; 2020 figures are forecasts, not actual. Source: States of Change: Demographics and Democracy project by Ruy Teixeira, William Frey, and Robert Griffin (2020 and 2040 projections), Goldman Sachs GIR.





Note: Starred areas represent states that are forecasted to have 30% or more of eligible voters be 65 or older in 2040; 2020 figures are forecasts, not actual.

Source: States of Change: Demographics and Democracy project by Ruy Teixeira, William Frey, and Robert Griffin (2020 and 2040 projections), Goldman Sachs GIR.

Market pricing as of September 30, 2020.

Summary of our key forecasts

Watching

3S GIR: Macro at a glance

expect real GDP to contract by 3.9% this year, making 2020 weaker than the year following the Global Financial Crisis. But we believe that global economic activity will continue to rebound as the world adapts to Globally, the world economy continues to recover rapidly from the coronacrisis, and we estimate that global GDP has now made up nearly two-thirds of the 20% drop seen from mid-January to mid-April. We the virus via low-cost mitigation measures, such as face masks, and monetary and fiscal policy remain supportive.

In the US, we expect 3% gog annualized growth in Q4, with a likely lack of additional fiscal support weighing on disposable income, and full-year 2020 growth of -3.5%. We expect the unemployment rate to fall to 7% and core PCE inflation to reach 1.4% by year-end 2020.

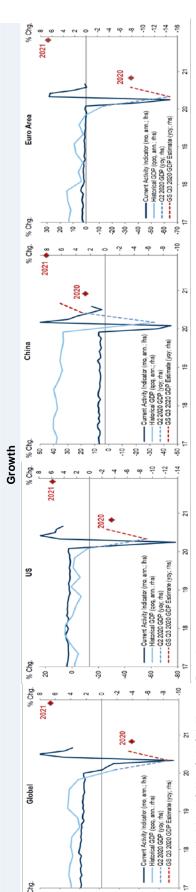
-The Fed has adopted flexible average inflation targeting and outcome-based forward guidance, which we view as consistent with our expectation of liftoff around early 2025. On the fiscal policy front, we believe that the prospect of additional pre-election stimulus remains unlikely, but not impossible.

In the Euro area, we expect the coronavirus outbreak will lead to a 7.9% yoy decline in real GDP in 2020, and see the recent rise in new infections as driving a slowdown in near-term momentum. But we remain constructive on the Euro area over the next 1-2 years, and think the region is well-placed to contain the virus with limited economic costs despite the recent surge.

We expect the ECB to extend PEPP until the end of 2021 at its December meeting. We expect the EUR 750bn Recovery Fund, which will provide fiscal support to the countries most affected by the virus, to be In China, following strong economic growth and continued strength in exports, we see less monetary policy easing ahead, and expect 6.4% yoy annualized GDP growth in 2H20 and above-consensus 2020 ratified by the European Parliament and the 27 national parliaments by year-end and operational next year.

•WATCH CORONAVIRUS. While the trajectory of the coronavirus remains highly uncertain, our base case assumes that the path of new infections and fatalities does not prevent a continued gradual recovery in global economic activity. We expect the FDA will approve at least one safe and effective vaccine this year and that mass vaccinations, together with the impact of prior infections, should result in herd immunity in most of the advanced world over the next year. GDP growth of 2.7% yoy.

Goldman Sachs Global Investment Research.



Note: China growth represents non-seasonally adjusted rates. GS CAI is a measure of current growth. We have recently revised our methodology for calculating this measure. For more information on the methodology of the CAI please see "Lessons Learned: Re-engineering Our CAIs in Light of the Pandemic Recession," Global Economics Analyst, Sep. 29, 2020. Source: Haver Analytics and Goldman Sachs Global Investment Research.

Forecasts

Economics									Markets									Equities			
GDP growth (%)	2020		2021		Interest rates 10Yr (%)	Last	E2020	E2021 F	X	Last	3m	12m	S&P 500	E2020		E2021		Returns (%)	12m	Ē	E2020 P/E
	GS	Cons.	GS	Cons.										SS	Cons.	SS	Cons.				
Global	-3.9	-3.9	9.9	5.2	Sn	69.0	1.05	1.45 E	EUR/\$	1.17	1.15	1.25	Price	3,600			:	S&P500	13.0	4.0	26.2x
Sn	-3.5	-4.4	5.8	3.7	Germany	-0.56	-0.25	0.10	GBP/\$	1.29	1.28	4.	EPS	\$130	\$130	\$170	\$165	MXAPJ	0.9	3.0	18.3x
China	2.7	2.1	8.1	8.0	Japan	0.01	0.10	0.15	\$/JPY	106	107	105	Growth	-21%	-21%	30%	27%	Topix	5.0	-2.0	19.4x
Euro area	-7.9	-8.1	6.7	5.5	UK	0.22	0.40	0.65	\$/CNY	6.77	6.70	6.50						STOXX 600	9.0	0.6-	22.5x
Policy rates (%)	2020		2021		Commodities	Last	3m	12m	Credit (bp)	Last	E2020	E2021	Consumer	2020		2021			Wage Tracker 2020 (%)	acker	
	GS	Mkt.	GS GS	Mkt.										CPI (%, yoy)	Unemp. Rate	CPI (%, yoy)	Unemp. Rate	۵۲	02		
Sn	0.13	0.08	0.13	0.05	Crude Oil, Brent (\$/bbl)	41	46	99	JSD IG	136	130	1	SN	1.3	7.0	1.8	9.6	3.5	5.8		
Euro area	-0.50	-0.54	-0.50	-0.57	Nat Gas (\$/mmBtu)	2.53	3.00	3.25	Н	517	490		Euro area	0.4	10.0	9.0	9.4	1.7	1.5		
China	2.20	2.23	2.25	2.39	Copper (\$/mt)	899'9	2,000	7,500 E	EUR IG	129	127		China	3.0		2.1	:	-2.0	9.0-		
Japan	-0.10	-0.09	-0.10	-0.14	-0.14 Gold (\$/troy oz)	1,887	2,300	2,300	Н	472	435	٠									

Source: Bloomberg, Goldman Sachs Global Investment Research. For important disclosures, see the Disclosure Appendix or go to www.gs.com/research/hedge.html

Glossary of GS proprietary indices

Current Activity Indicator (CAI)

GS CAIs measure the growth signal in a broad range of weekly and monthly indicators, offering an alternative to Gross Domestic Product (GDP). GDP is an imperfect guide to current activity: In most countries, it is only available quarterly and is released with a substantial delay, and its initial estimates are often heavily revised. GDP also ignores important measures of real activity, such as employment and the purchasing managers' indexes (PMIs). All of these problems reduce the effectiveness of GDP for investment and policy decisions. Our CAIs aim to address GDP's shortcomings and provide a timelier read on the pace of growth.

For more, see our <u>CAI page</u> and <u>Global Economics Analyst: Trackin' All Over the World – Our New Global CAI, 25 February 2017</u>.

Dynamic Equilibrium Exchange Rates (DEER)

The GSDEER framework establishes an equilibrium (or "fair") value of the real exchange rate based on relative productivity and terms-of-trade differentials.

For more, see our <u>GSDEER page</u>, <u>Global Economics Paper No. 227: Finding Fair Value in EM FX, 26 January 2016</u>, and <u>Global Markets Analyst: A Look at Valuation Across G10 FX, 29 June 2017</u>.

Financial Conditions Index (FCI)

GS FCIs gauge the "looseness" or "tightness" of financial conditions across the world's major economies, incorporating variables that directly affect spending on domestically produced goods and services. FCIs can provide valuable information about the economic growth outlook and the direct and indirect effects of monetary policy on real economic activity.

FCIs for the G10 economies are calculated as a weighted average of a policy rate, a long-term risk-free bond yield, a corporate credit spread, an equity price variable, and a trade-weighted exchange rate; the Euro area FCI also includes a sovereign credit spread. The weights mirror the effects of the financial variables on real GDP growth in our models over a one-year horizon. FCIs for emerging markets are calculated as a weighted average of a short-term interest rate, a long-term swap rate, a CDS spread, an equity price variable, a trade-weighted exchange rate, and—in economies with large foreign-currency-denominated debt stocks—a debt-weighted exchange rate index.

For more, see our <u>FCl page</u>, <u>Global Economics Analyst: Our New G10 Financial Conditions Indices, 20 April 2017</u>, and <u>Global Economics Analyst: Tracking EM Financial Conditions – Our New FCls, 6 October 2017</u>.

Goldman Sachs Analyst Index (GSAI)

The US GSAI is based on a monthly survey of GS equity analysts to obtain their assessments of business conditions in the industries they follow. The results provide timely "bottom-up" information about US economic activity to supplement and cross-check our analysis of "top-down" data. Based on analysts' responses, we create a diffusion index for economic activity comparable to the ISM's indexes for activity in the manufacturing and nonmanufacturing sectors.

Macro-Data Assessment Platform (MAP)

GS MAP scores facilitate rapid interpretation of new data releases for economic indicators worldwide. MAP summarizes the importance of a specific data release (i.e., its historical correlation with GDP) and the degree of surprise relative to the consensus forecast. The sign on the degree of surprise characterizes underperformance with a negative number and outperformance with a positive number. Each of these two components is ranked on a scale from 0 to 5, with the MAP score being the product of the two, i.e., from -25 to +25. For example, a MAP score of +20 (5;+4) would indicate that the data has a very high correlation to GDP (5) and that it came out well above consensus expectations (+4), for a total MAP value of +20.

Top of Mind archive



Issue 92 COVID-19: Where We Go From Here August 13, 2020



Issue 76
The Fed's Dovish Pivot
March 5. 2019



Issue 91
Investing in Racial Economic Equality
July 16, 2020



Issue 75
Where Are We in the Market Cycle?
February 4, 2019



Issue 90

Daunting Debt Dynamics

May 28, 2020



Issue 74
What's Next for China?
December 7, 2018



Issue 89
Reopening the Economy
April 28, 2020



Issue 73

Making Sense of Midterms

October 29, 2018



Issue 88 Oil's Seismic Shock March 31, 2020



Issue 72 Recession Risk October 16, 2018



Roaring into RecessionMarch 24, 2020



Issue 71
Fiscal Folly
September 13, 2018



Issue 86 2020's Black swan: COVID-19 February 28, 2020



Issue 70

Deal or No Deal: Brexit and the Future of Europe

August 13, 2018



Issue 85 Investing in Climate Change January 30, 2020



Issue 69
Emerging Markets: Invest or Avoid?
July 10, 2018



Special Issue 2019 Update, and a Peek at 2020 December 17, 2019



Issue 68
Liquidity, Volatility, Fragility
June 12, 2018



Issue 84
Fiscal Focus
November 26, 2019



Issue 67 *Regulating Big Tech April 26, 2018*



Issue 83

Growth and Geopolitical Risk
October 10, 2019



Issue 66 Trade Wars 2.0 March 28, 2018



Issue 82 Currency Wars September 12, 2019



Issue 65 Has a Bond Bear Market Begun? February 28, 2018



Central Bank Independence August 8, 2019



Issue 64
Is Bitcoin a (Bursting) Bubble?
February 5, 2018



Issue 80
Dissecting the Market Disconnect
July 11, 2019



Special Issue 2017 Update, and a Peek at 2018 December 14, 2017



Issue 79 Trade Wars 3.0June 6, 2019



Issue 63 Late-Cycle for Longer? November 9, 2017



Issue 78 EU Elections: What's at Stake? May 9, 2019



lssue 62 China's Big Reshuffle October 12, 2017



Buyback RealitiesApril 11, 2019



Issue 61
Fiscal Agenda in Focus
October 5, 2017

Source of photos: www.istockphoto.com, www.shutterstock.com, US Department of State/Wikimedia Commons/Public Domain.

Disclosure Appendix

Reg AC

We, Allison Nathan, Gabriel Lipton Galbraith, Jenny Grimberg, Alec Phillips, Ben Snider, and Blake Taylor hereby certify that all of the views expressed in this report accurately reflect our personal views, which have not been influenced by considerations of the firm's business or client relationships.

Unless otherwise stated, the individuals listed on the cover page of this report are analysts in Goldman Sachs' Global Investment Research division.

Disclosures

Regulatory disclosures

Disclosures required by United States laws and regulations

See company-specific regulatory disclosures above for any of the following disclosures required as to companies referred to in this report: manager or co-manager in a pending transaction; 1% or other ownership; compensation for certain services; types of client relationships; managed/co-managed public offerings in prior periods; directorships; for equity securities, market making and/or specialist role. Goldman Sachs trades or may trade as a principal in debt securities (or in related derivatives) of issuers discussed in this report.

The following are additional required disclosures: **Ownership and material conflicts of interest:** Goldman Sachs policy prohibits its analysts, professionals reporting to analysts and members of their households from owning securities of any company in the analyst's area of coverage. **Analyst compensation:** Analysts are paid in part based on the profitability of Goldman Sachs, which includes investment banking revenues. **Analyst as officer or director:** Goldman Sachs policy generally prohibits its analysts, persons reporting to analysts or members of their households from serving as an officer, director or advisor of any company in the analyst's area of coverage. **Non-U.S. Analysts:** Non-U.S. analysts may not be associated persons of Goldman Sachs & Co. LLC and therefore may not be subject to FINRA Rule 2241 or FINRA Rule 2242 restrictions on communications with subject company, public appearances and trading securities held by the analysts.

Additional disclosures required under the laws and regulations of jurisdictions other than the United States

investment strategy and for disclosure of particular interests or indications of conflicts of interest is available

The following disclosures are those required by the jurisdiction indicated, except to the extent already made above pursuant to United States laws and regulations. Australia: Goldman Sachs Australia Pty Ltd and its affiliates are not authorised deposit-taking institutions (as that term is defined in the Banking Act 1959 (Cth)) in Australia and do not provide banking services, nor carry on a banking business, in Australia. This research, and any access to it, is intended only for "wholesale clients" within the meaning of the Australian Corporations Act, unless otherwise agreed by Goldman Sachs. In producing research reports, members of the Global Investment Research Division of Goldman Sachs Australia may attend site visits and other meetings hosted by the companies and other entities which are the subject of its research reports. In some instances the costs of such site visits or meetings may be met in part or in whole by the issuers concerned if Goldman Sachs Australia considers it is appropriate and reasonable in the specific circumstances relating to the site visit or meeting. To the extent that the contents of this document contains any financial product advice, it is general advice only and has been prepared by Goldman Sachs without taking into account a client's objectives, financial situation or needs. A client should, before acting on any such advice, consider the appropriateness of the advice having regard to the client's own objectives, financial situation and needs. A copy of certain Goldman Sachs Australia and New Zealand disclosure of interests and a copy of Goldman Sachs' Australian Sell-Side Research Independence Policy Statement are available at: https://www.goldmansachs.com/disclosures/australia-newzealand/index.html. Brazil: Disclosure information in relation to CVM Instruction 598 is available at https://www.gs.com/worldwide/brazil/area/gir/index.html. Where applicable, the Brazil-registered analyst primarily responsible for the content of this research report, as defined in Article 20 of CVM Instruction 598, is the first author named at the beginning of this report, unless indicated otherwise at the end of the text. Canada: Goldman Sachs Canada Inc. is an affiliate of The Goldman Sachs Group Inc. and therefore is included in the company specific disclosures relating to Goldman Sachs (as defined above). Goldman Sachs Canada Inc. has approved of, and agreed to take responsibility for, this research report in Canada if and to the extent that Goldman Sachs Canada Inc. disseminates this research report to its clients. Hong Kong: Further information on the securities of covered companies referred to in this research may be obtained on request from Goldman Sachs (Asia) L.L.C. India: Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (India) Securities Private Limited, Research Analyst - SEBI Registration Number INH000001493, 951-A, Rational House, Appasaheb Marathe Marg, Prabhadevi, Mumbai 400 025, India, Corporate Identity Number U74140MH2006FTC160634, Phone +91 22 6616 9000, Fax +91 22 6616 9001. Goldman Sachs may beneficially own 1% or more of the securities (as such term is defined in clause 2 (h) the Indian Securities Contracts (Regulation) Act, 1956) of the subject company or companies referred to in this research report. Japan: See below. Korea: This research, and any access to it, is intended only for "professional investors" within the meaning of the Financial Services and Capital Markets Act, unless otherwise agreed by Goldman Sachs. Further information on the subject company or companies referred to in this research may be obtained from Goldman Sachs (Asia) L.L.C., Seoul Branch. New Zealand: Goldman Sachs New Zealand Limited and its affiliates are neither "registered banks" nor "deposit takers" (as defined in the Reserve Bank of New Zealand Act 1989) in New Zealand. This research, and any access to it, is intended for "wholesale clients" (as defined in the Financial Advisers Act 2008) unless otherwise agreed by Goldman Sachs. A copy of certain Goldman Sachs Australia and New Zealand disclosure of interests is available at: https://www.goldmansachs.com/disclosures/australia-newzealand/index.html. Russia: Research reports distributed in the Russian Federation are not advertising as defined in the Russian legislation, but are information and analysis not having product promotion as their main purpose and do not provide appraisal within the meaning of the Russian legislation on appraisal activity. Research reports do not constitute a personalized investment recommendation as defined in Russian laws and regulations, are not addressed to a specific client, and are prepared without analyzing the financial circumstances, investment profiles or risk profiles of clients. Goldman Sachs assumes no responsibility for any investment decisions that may be taken by a client or any other person based on this research report. Singapore: Further information on the covered companies referred to in this research may be obtained from Goldman Sachs (Singapore) Pte. (Company Number: 198602165W). Taiwan: This material is for reference only and must not be reprinted without permission. Investors should carefully consider their own investment risk. Investment results are the responsibility of the individual investor. United Kingdom: Persons who would be categorized as retail clients in the United Kingdom, as such term is defined in the rules of the Financial Conduct Authority, should read this research in conjunction with prior Goldman Sachs research on the covered companies referred to herein and should refer to the risk warnings that have been sent to them by Goldman Sachs International. A copy of these risks warnings, and a glossary of certain financial terms used in this report, are available from Goldman Sachs International on request. European Union: Disclosure information in relation to Article 6 (2) of the European Commission Delegated Regulation (EU) (2016/958) supplementing Regulation (EU) No 596/2014 of the European Parliament and of the Council with regard to regulatory technical standards for the technical arrangements for objective presentation of investment recommendations or other information recommending or suggesting an

at https://www.gs.com/disclosures/europeanpolicy.html which states the European Policy for Managing Conflicts of Interest in Connection with

Investment Research.

Japan: Goldman Sachs Japan Co., Ltd. is a Financial Instrument Dealer registered with the Kanto Financial Bureau under registration number Kinsho 69, and a member of Japan Securities Dealers Association, Financial Futures Association of Japan and Type II Financial Instruments Firms Association. Sales and purchase of equities are subject to commission pre-determined with clients plus consumption tax. See company-specific disclosures as to any applicable disclosures required by Japanese stock exchanges, the Japanese Securities Dealers Association or the Japanese Securities Finance Company.

Global product; distributing entities

The Global Investment Research Division of Goldman Sachs produces and distributes research products for clients of Goldman Sachs on a global basis. Analysts based in Goldman Sachs offices around the world produce research on industries and companies, and research on macroeconomics, currencies, commodities and portfolio strategy. This research is disseminated in Australia by Goldman Sachs Australia Pty Ltd (ABN 21 006 797 897); in Brazil by Goldman Sachs do Brasil Corretora de Títulos e Valores Mobiliários S.A.; Ombudsman Goldman Sachs Brazil: 0800 727 5764 and / or ouvidoriagoldmansachs@gs.com. Available Weekdays (except holidays), from 9am to 6pm. Ouvidoria Goldman Sachs Brasil: 0800 727 5764 e/ou ouvidoriagoldmansachs@gs.com. Horário de funcionamento: segunda-feira à sexta-feira (exceto feriados), das 9h às 18h; in Canada by either Goldman Sachs Canada Inc. or Goldman Sachs & Co. LLC; in Hong Kong by Goldman Sachs (Asia) L.L.C.; in India by Goldman Sachs (India) Securities Private Ltd.; in Japan by Goldman Sachs Japan Co., Ltd.; in the Republic of Korea by Goldman Sachs (Asia) L.L.C., Seoul Branch; in New Zealand by Goldman Sachs New Zealand Limited; in Russia by OOO Goldman Sachs; in Singapore by Goldman Sachs (Singapore) Pte. (Company Number: 198602165W); and in the United States of America by Goldman Sachs & Co. LLC. Goldman Sachs International has approved this research in connection with its distribution in the United Kingdom and European Union.

European Union: Goldman Sachs International authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority, has approved this research in connection with its distribution in the European Union and United Kingdom.

General disclosures

This research is for our clients only. Other than disclosures relating to Goldman Sachs, this research is based on current public information that we consider reliable, but we do not represent it is accurate or complete, and it should not be relied on as such. The information, opinions, estimates and forecasts contained herein are as of the date hereof and are subject to change without prior notification. We seek to update our research as appropriate, but various regulations may prevent us from doing so. Other than certain industry reports published on a periodic basis, the large majority of reports are published at irregular intervals as appropriate in the analyst's judgment.

Goldman Sachs conducts a global full-service, integrated investment banking, investment management, and brokerage business. We have investment banking and other business relationships with a substantial percentage of the companies covered by our Global Investment Research Division. Goldman Sachs & Co. LLC, the United States broker dealer, is a member of SIPC (https://www.sipc.org).

Our salespeople, traders, and other professionals may provide oral or written market commentary or trading strategies to our clients and principal trading desks that reflect opinions that are contrary to the opinions expressed in this research. Our asset management area, principal trading desks and investing businesses may make investment decisions that are inconsistent with the recommendations or views expressed in this research. We and our affiliates, officers, directors, and employees, will from time to time have long or short positions in, act as principal in, and buy or sell, the securities or derivatives, if any, referred to in this research, unless otherwise prohibited by regulation or Goldman Sachs policy.

The views attributed to third party presenters at Goldman Sachs arranged conferences, including individuals from other parts of Goldman Sachs, do not necessarily reflect those of Global Investment Research and are not an official view of Goldman Sachs.

Any third party referenced herein, including any salespeople, traders and other professionals or members of their household, may have positions in the products mentioned that are inconsistent with the views expressed by analysts named in this report.

This research is focused on investment themes across markets, industries and sectors. It does not attempt to distinguish between the prospects or performance of, or provide analysis of, individual companies within any industry or sector we describe.

Any trading recommendation in this research relating to an equity or credit security or securities within an industry or sector is reflective of the investment theme being discussed and is not a recommendation of any such security in isolation.

This research is not an offer to sell or the solicitation of an offer to buy any security in any jurisdiction where such an offer or solicitation would be illegal. It does not constitute a personal recommendation or take into account the particular investment objectives, financial situations, or needs of individual clients. Clients should consider whether any advice or recommendation in this research is suitable for their particular circumstances and, if appropriate, seek professional advice, including tax advice. The price and value of investments referred to in this research and the income from them may fluctuate. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. Fluctuations in exchange rates could have adverse effects on the value or price of, or income derived from, certain investments. Certain transactions, including those involving futures, options, and other derivatives, give rise to substantial risk and are not suitable for all investors. Investors should review current options and futures disclosure documents which are available from Goldman Sachs sales representatives or at https://www.theocc.com/about/publications/character-risks.jsp and https://www.fiadocumentation.org/fia/regulatory-disclosures-and-options-on-futures-risk-disclosures-booklet-pdf-version-2018. Transaction costs may be significant in option strategies calling for multiple purchase and sales of options such as spreads. Supporting documentation will be supplied upon request.

Differing Levels of Service provided by Global Investment Research: The level and types of services provided to you by the Global Investment Research division of GS may vary as compared to that provided to internal and other external clients of GS, depending on various factors including your individual preferences as to the frequency and manner of receiving communication, your risk profile and investment focus and perspective (e.g., marketwide, sector specific, long term, short term), the size and scope of your overall client relationship with GS, and legal and regulatory constraints. As an example, certain clients may request to receive notifications when research on specific securities is published, and certain clients may request that specific data underlying analysts' fundamental analysis available on our internal client websites be delivered to them electronically through data feeds or otherwise. No change to an analyst's fundamental research views (e.g., ratings, price targets, or material changes to earnings estimates for equity securities), will be communicated to any client prior to inclusion of such information in a research report broadly disseminated through electronic publication to our internal client websites or through other means, as necessary, to all clients who are entitled to receive such reports.

All research reports are disseminated and available to all clients simultaneously through electronic publication to our internal client websites. Not all research content is redistributed to our clients or available to third-party aggregators, nor is Goldman Sachs responsible for the redistribution of our research by third party aggregators. For research, models or other data related to one or more securities, markets or asset classes (including related services) that may be available to you, please contact your GS representative or go to https://research.gs.com.

Disclosure information is also available at https://www.gs.com/research/hedge.html or from Research Compliance, 200 West Street, New York, NY 10282

© 2020 Goldman Sachs.

No part of this material may be (i) copied, photocopied or duplicated in any form by any means or (ii) redistributed without the prior written consent of The Goldman Sachs Group