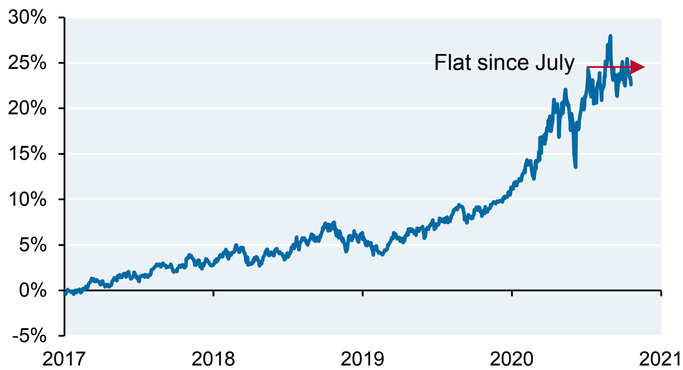
Topics: United States vs Google; Europe vs COVID; China vs US COVID aftermath; PCR vs Antigen testing

We've all been focused on the election recently, but there are other topics worth covering since they will affect markets regardless of the election's outcome. They include antitrust movements in the US and Europe, the COVID resurgence in Europe, the sovereign debt aftermath from COVID in places like the US and China, and the error rate in COVID testing that sends "false negatives" back into the workplace.

The antitrust revival

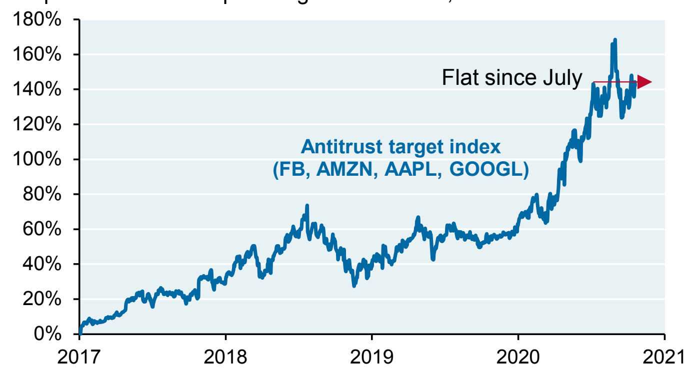
Prospects for increased antitrust enforcement are clearer now[1], and may partially explain why the market cap-weighted S&P 500 and the big 4 tech and social media stocks have stopped outperforming the equal-weighted S&P 500[2]. On page 3, we review issues cited in the House Judiciary Antitrust Report on Google, Amazon, Facebook and Apple, and how Democrats and the GOP see these issues differently. But first, **let's take a look at the Justice Department lawsuit launched vs Google this week**, which we discuss on page 2.

S&P 500 megacap outperformance
Outperformance of market cap vs equal weighted S&P 500, %



Source: Bloomberg. October 22, 2020.

Antitrust target outperformance
Outperformance vs equal weighted S&P 500, %



Source: Bloomberg, JPMAM. October 22, 2020.

Market share overview for US markets

Category	Google	Apple	Facebook	Amazon	Subtotal	Microsoft	Total
Phone operating systems	52%	47%	0%	0%	99%	1%	100%
Video game streaming	21%	0%	3%	73%	97%	3%	100%
Internet search incl. images, maps, Youtube	91%	0%	1%	2%	95%	2%	97%
Navigation applications	80%	10%	0%	0%	90%	0%	90%
eBooks	0%	20%	0%	70%	90%	0%	90%
Web browsers	51%	33%	0%	0%	84%	7%	91%
e-Readers	0%	0%	0%	84%	84%	0%	84%
Email	29%	46%	0%	0%	75%	10%	85%
Internet search	62%	0%	0%	0%	62%	25%	87%
Digital advertising	39%	0%	20%	2%	61%	4%	65%
e-Commerce	0%	6%	0%	54%	60%	0%	60%
Social media	1%	0%	51%	0%	52%	1%	53%
Digital storage	4%	0%	0%	47%	51%	10%	61%
Social media digital photos	0%	0%	50%	0%	50%	0%	50%
Mobile video and music	34%	8%	0%	7%	49%	0%	49%
Internet video	29%	0%	11%	8%	48%	7%	55%

Source: Connecticut Public Interest Law Journal, US DOJ, SparkToro, September 2020

[1] **Other antitrust clouds looming**: State Attorney General filings against Google for reasons that differ from the Justice Department's case; consumer rights advocate class action lawsuits for data privacy reasons; risks that Section 230 is revoked or amended (Section 230 provides indemnity against comments posted or censored); possible Facebook antitrust lawsuit by the DoJ in addition to the Google lawsuit just announced.

[2] Another possible reason that the Big 4 have stopped outperforming: market expectations for a vaccine that intermittently revive the fortunes of underperforming travel-related stocks and financial stocks.

United States vs Google key issues[3]:

- The Justice Department case is *not* focused on Google's search engine or advertising revenue dominance, in contrast to the centrality of such issues in European antitrust investigations. Instead, the DoJ case focuses on Google's **exclusivity arrangements with its distributors**. Google pays billions of dollars each year to device manufacturers (Apple, Motorola, LG, Samsung), wireless carriers (AT&T, T-Mobile, Verizon) and browser developers (Mozilla, Opera, UC Web) to secure default status for its search engine. In the case of Apple, the DoJ claims that 15%-20% of Apple's worldwide annual income is derived from Google payments for search engine default status. In some cases, Google prohibits counterparties from dealing with its competitors, and requires placement of Google Apps in prime positions on devices (see box below)
- A key concept from a speech by Assistant Attorney General Delrahim in 2019: "even if a company achieves monopoly position through legitimate means, it cannot take actions that do not advance plausible business goals but rather are designed to make it harder for competitors to catch up"
- Google has responded to such arguments by comparing its payments to distributors to cereal companies paying supermarkets to stock its goods on the best eye-level shelving. However, cereal consumption does not result in self-reinforcing market dominance. Google employs complex algorithms that learn which results and ads best correspond to user searches, and the more they do this, they better they get at it
- Some DoJ allegations about Google rhyme with antitrust arguments levied against Microsoft 20 years ago, such as restrictions Microsoft placed on equipment manufacturers to ensure installation of Internet Explorer and to suppress alternative operating systems. Currently, some antitrust analysts believe that Google and Apple impose restrictions on device manufacturers and App developers that have nothing to do with technical limitations or consumer security, and are instead designed to preserve market dominance
- There's a complicating factor**: the online world involves duopolies instead of conventional monopolies**. For example, Google/Facebook dominate digital advertising, Microsoft/Amazon dominate the cloud, Amazon/Google dominate shopping searches, and Microsoft/Google dominate productivity applications. As a result, the companies involved can mount vigorous defenses against monopolistic practice charges
- How any given judge will rule on the case is unknown, but the DoJ case increases the risks for the big 4 tech and social media stocks that account for a growing share of market returns

From United States vs Google, Filed October 20, 2020, Page 46:

"*Carrier Revshare Deals*: As part of our carrier deals, Android devices distributed by the carrier will have exclusivity of Google Search on the device, preventing the pre-installation of other search engines or browsers. By having these deals in place (especially in markets that are dominated by carrier retail distribution such as the US), we are able to protect search exclusivity on the device as it makes its way to the user."

[3] Sources include the University of Connecticut Law School ("*A topology of multi-sided digital platforms*", June 2020), University of Pennsylvania Carey Law School (*"Antitrust and Platform Monopoly",* September 2020) and Stratechery.com (October 21, 2020)

House Judiciary Report on anti-competitive tech behavior

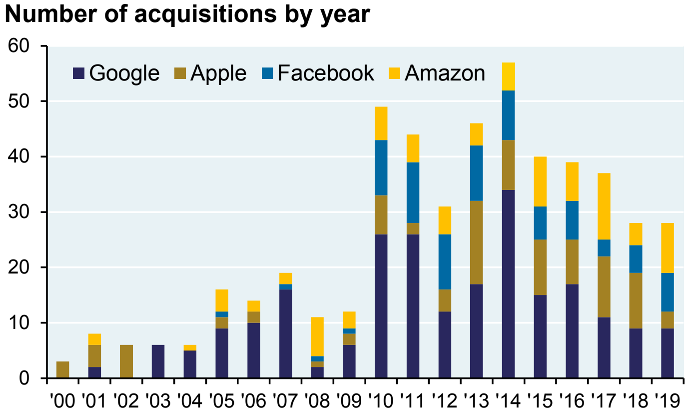
Facebook, Google, Amazon and Apple were cited in a House Judiciary Report released on October 6th for making acquisitions that stifle competition ("killer acquisitions"[4]), using market power to raise prices, misappropriating third-party data, stealing intellectual property and acting as market gatekeepers (i.e., controlling and serving a marketplace at the same time). The report's conclusions discard the "consumer welfare" standard that has guided antitrust enforcement over the past 40 years. Some firm-specific conclusions in the report:

- Facebook: social networking monopoly power that results from Facebook using superior market intelligence to identify nascent competitive threats and then acquire, copy, or kill them
- Google: online search and search advertising monopoly that is the product of anticompetitive behavior which includes undermining competition, misappropriating third-party data, and establishing their software as the default on most of the world's devices and browsers
- Amazon: durable market power in US online retail which results from acquiring competitors and abusing relationships with third party sellers beholden to Amazon, and from using control over the marketplace to find where its third party partners are doing well and copying their products to drive them out of business
- Apple: significant and durable market power in mobile operating system market resulting from its control of all software distribution to iOS devices

House Democrats favor a wide range of policies to combat these practices, listed below. The GOP does not agree with most of these remedies, and only favors a small number of them (highlighted in red). If Biden wins and if the filibuster is jettisoned, these proposals would face a lower 51-seat hurdle in the Senate to pass. If so, the honeymoon phase of defeating Trump may turn into hotly debated interparty battles on policy issues in the new year. Even if these proposals aren't enacted, antitrust heat on tech may increase given greater Congressional scrutiny and a rejuvenated Department of Justice that is less at odds with its Attorney General, and which is no longer asked to defend a sitting President on personal charges unrelated to the Presidency.

- *Restoring competition*: Glass-Steagall legislation for the tech sector (break up lines of business), rules to prevent discrimination and self-preferencing, merger prohibition (see below for history), safe harbor for new publishers, prohibition on abuse of bargaining power and rules on data portability/interoperability
- *Strengthening antitrust law*: Reassert anti-monopoly goals of antitrust law, strengthen Section 2 of the Clayton Act (price discrimination), strengthen Section 7 of the Clayton Act (acquisitions that foster monopolies), restore enforcement Agencies to full strength, increase private enforcement

Number of acquisitions by year



Source: "*A topology of multi-sided digital platforms*", University of Connecticut Law School. June 2020.

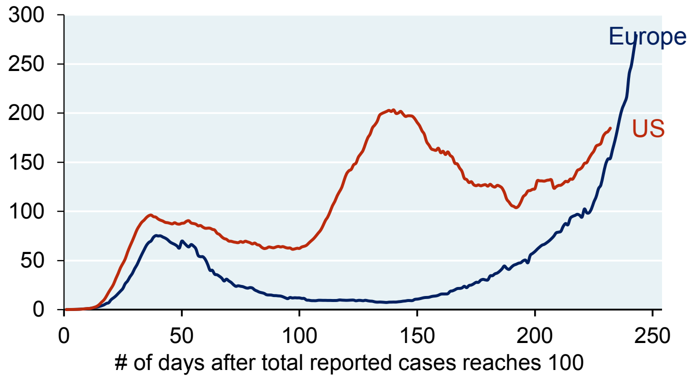
[4] The phrase "**Killer Acquisitions**" was coined by Cunningham (LSE) and Ederer (Yale SOM) in a paper published in 2018. They use the pharmaceutical industry to illustrate how incumbent firms sometimes acquire innovative targets solely to discontinue the target's innovation projects and preempt future competition.

Europe vs COVID

The spike in European infections has been very steep as school, bars and restaurants reopen; the latest measures put current infection rates well above the US. European mortality rates are still much *lower* than during the summer, as they are in the US. In my view, this is due the lower age of more recently infected persons, less overcrowded hospitals, and more informed standards of patient care (less unnecessary ventilation when oxygenation will suffice, and the use of steroids and blood thinners).

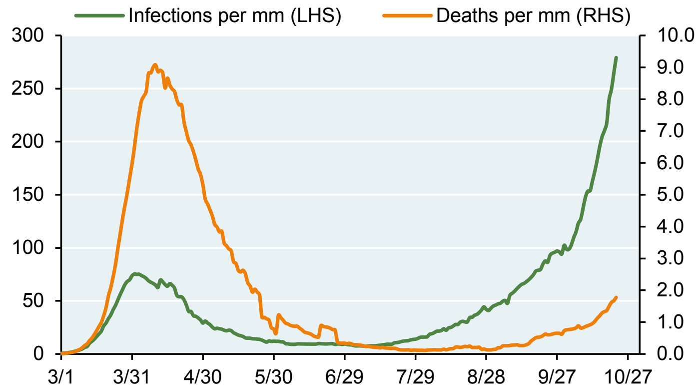
US vs Europe infections

New daily infections per mm people, 7 day avg



Source: Johns Hopkins University, IMF, JPMAM. October 22, 2020

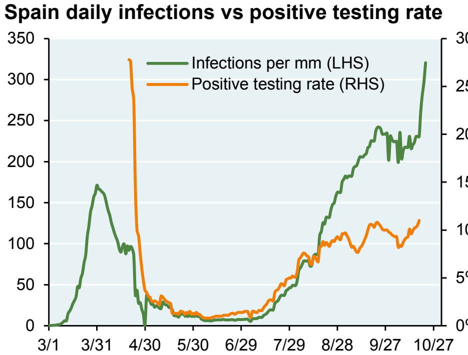
Europe daily infections vs mortality



Source: JHU, JPMAM. 10/22/2020. 7 day averages.

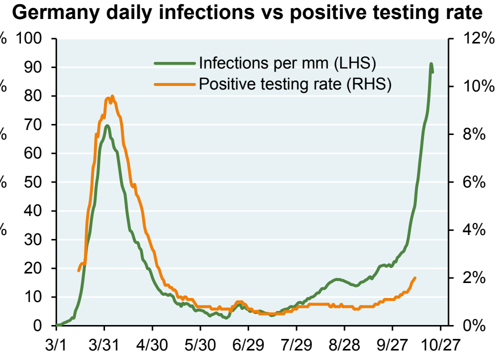
Even so, this European spike is concerning as winter approaches. I've seen commentary suggesting that this spike is simply the byproduct of increased testing. We can assess this argument by looking at positive testing rates. If positive testing rates are flat (as in Spain and Germany), then increased testing is the primary driver of rising infections. **But in France, Italy, Belgium and the Netherlands, positive testing rates are rising quickly, an indication of an outbreak as well**. Note: the UK is somewhere in between both groups.

Spain daily infections vs positive testing rate



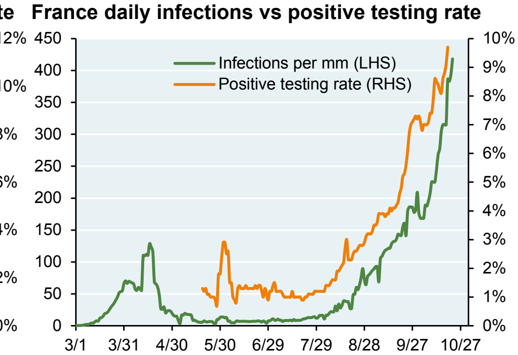
Source: JHU, OWID, JPMAM. 10/22/2020. 7 day averages.

Germany daily infections vs positive testing rate



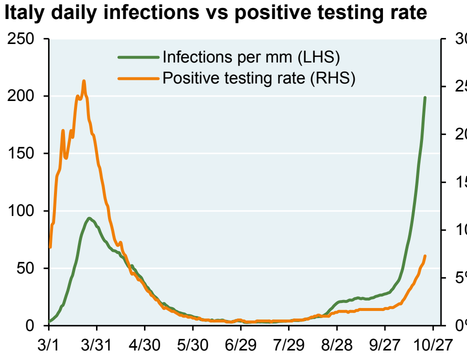
Source: JHU, OWID, JPMAM. 10/22/2020. 7 day averages.

France daily infections vs positive testing rate



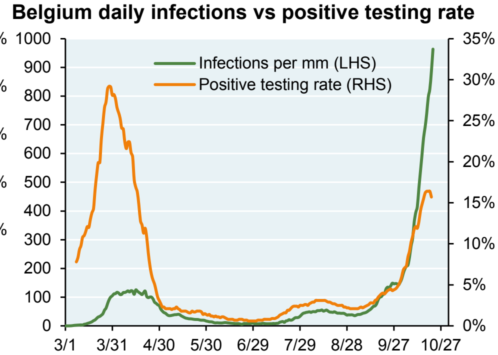
Source: JHU, OWID, JPMAM. 10/22/2020. 7 day averages.

Italy daily infections vs positive testing rate



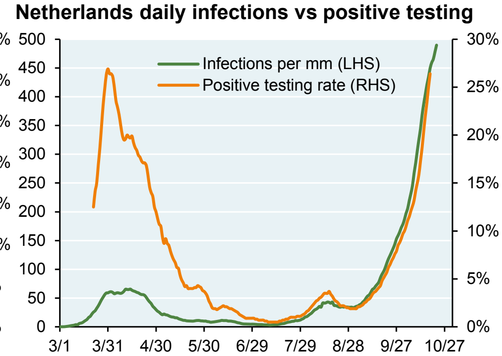
Source: JHU, OWID, JPMAM. 10/22/2020. 7 day averages.

Belgium daily infections vs positive testing rate



Source: JHU, OWID, JPMAM. 10/22/2020. 7 day averages.

Netherlands daily infections vs positive testing



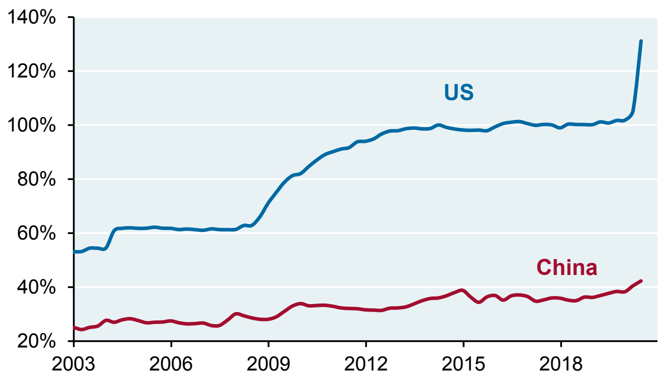
Source: JHU, OWID, JPMAM. 10/22/2020. 7 day averages.

China vs US COVID aftermath: the spike in government debt

One of the earliest COVID misinformation[5] campaigns alleged that China created COVID as a "bioweapon" to use against the US, possibly due to the negative impact the pandemic might have on US public finances. Let's ignore the debunked bioweapon theory and look at what happened to debt levels, since that's important to long term investors focused on sovereign ratings, reserve currency status, exchange rate risks, etc. Using the lens of government debt alone, the pandemic was a disaster for the US relative to China.

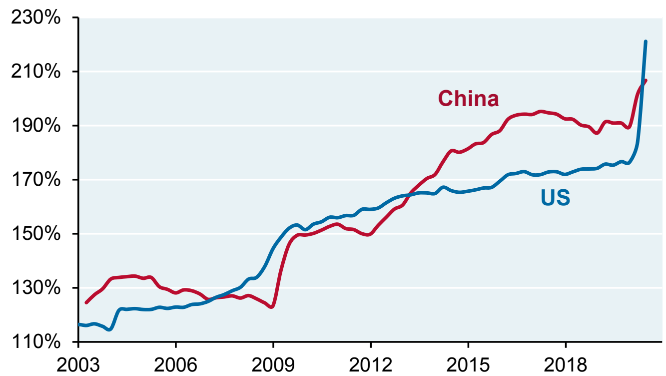
However, as my colleague Alex Wolf in Hong Kong notes, the division between public and private debt in China is blurred, and even more so in recent years. Debt of state-owned enterprises can be considered corporate debt and/or a liability of the government, particularly since SOEs may invest in projects at the direct or indirect behest of government entities, or with a push from government-influenced banks. As a result, a crude comparison of government plus corporate debt levels is the better (albeit imperfect) lens of the two. And as you can see, on that front the differences between the US and China are not that large, either before the pandemic or after.

General government debt
% of GDP



Source: Wind, CNBS, Federal Reserve. June 2020.

General government and non-financial corporate debt
% of GDP



Source: Wind, CNBS, Federal Reserve. June 2020.

PCR vs Antigen testing

We have gotten questions on this, so here's a brief primer.

- Testing accuracy is typically measured by looking at error rates: false positives (people who aren't sick but who are TOLD they are) and false negatives (people who ARE sick who are told they are fine). False positives are a productivity problem: people told to stay home when they could come to work. False negatives are worse: these individuals spread the virus since they don't know they are ill
- Neither PCR nor antigen tests have substantial false positive rates. That's the good news. However, there's a public health cost to rapid antigen tests since they have a much higher false negative rate than PCR tests
- The table shows the false positive and false negative rates for both PCR and antigen tests. Ranges differ by manufacturer, and over time; more recent tests are reportedly more accurate
- As a reminder, PCR and antigen tests have not been certified for accuracy by the FDA. They have been granted emergency use authorization due to the pandemic, but anyone tested should understand the risks of false positives and false negatives

Diagnostic test	Method	"Sensitivity": ability to detect virus in infected people (failures = false negatives)	"Specificity": ability to confirm lack of infection in uninfected people (failures = false positives)
PCR	Detect virus genetic material	98.9% (87.5%-100%)	99.4% (92.3%-100%)
Antigen	Detect specific proteins on virus surface	90.4% (80%-97.6%)	99.2% (96.6%-100%)

Source: John Hopkins University Center for Health Security, JPMAM. October 2020.

[5] A Cornell study analyzed 38 million English language news articles from January through May and concluded that **President Trump was the largest driver of the COVID misinformation infodemic**. "*Coronavirus misinformation: quantifying sources and themes in the COVID-19 infodemic*", Evanega et al, Cornell Alliance for Science, September 2020

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