

**The Day After: Tracking the rebirth of the US consumer with real-time transactional data as lockdowns gradually end; no evidence yet of material second waves of COVID infection, either in the US or around the world; Vaccine round-up (Moderna, Oxford, Sinovac) & anticoagulants**

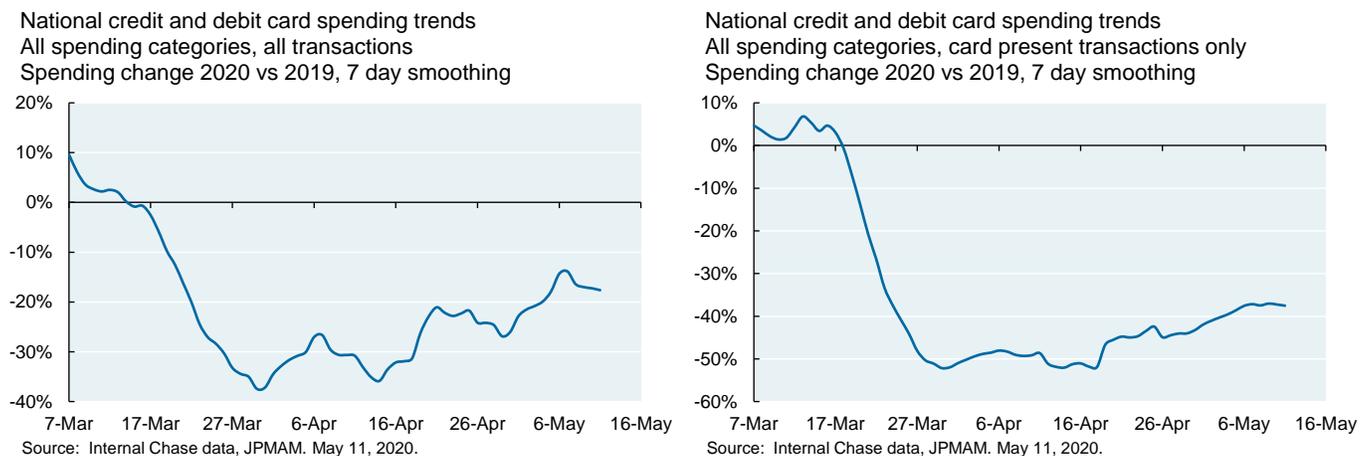
There are a lot of issues I've been discussing with clients on Zoom calls, which I was going to write about this week: a recent shift in swing state polls in favor of Vice President Biden, rising probabilities of a Democratic sweep and possible market consequences; the risk of deflationary and inflationary shocks; household and corporate debt burdens after the pandemic; and what will happen to the Federal debt.

I will save that for next time. Instead, here's our new analysis on the US consumer based on select internal Chase transaction data<sup>1</sup>. We've been posting a chart on our virus portal showing indicators that are rising from low levels (gasoline demand, rail traffic for consumer goods, hotel occupancy, mortgage applications, etc). However, this is national data that includes states that are locked down, states that already reopened, states that reopened in some areas only, etc. As a result, national data is not the best way to assess what the US might look like once the virus recedes and lockdowns end<sup>2</sup>.

**Our new tools differentiate between states based on virus severity and policy characteristics, and include real-time transactional data through May 11, 2020.** Over time, these tools can help highlight secular shifts in consumer behavior that may last after the pandemic is over, with implications for retailing, commercial real estate, e-commerce, etc.

**Tracking the rebirth of the US consumer**

On a national level, consumer spending in our credit and debit card data set<sup>3</sup> is down 15% vs 2019 (first chart). However, this aggregation includes a lot of e-commerce. When narrowing the focus to consumer transactions that took place with "cards present", the y/y decline is much larger (second chart).



For many reasons (housing, commercial real estate, transportation, etc), we're interested in **discretionary "social distancing spending" (SDS)** as well. For our purposes, we define SDS as "card present" transactions for retail, lodging, restaurants, amusement parks, tourist attractions, theaters, night clubs and other recreational services. In other words, spending that requires people to go someplace and not buy

<sup>1</sup> This report uses rigorous security protocols for selected data sourced from Chase credit and debit card transactions to ensure all information is kept confidential and secure. All selected data is highly aggregated and all unique identifiable information, including names, account numbers, addresses, dates of birth, and Social Security Numbers, is removed from the data before the report's author receives it.

<sup>2</sup> **To be clear, the US is reopening despite one of the highest infection rates per mm people in the world, which is the basis of my "Logan's Run" analogy last week;** see virus web portal sections 1 and 2.

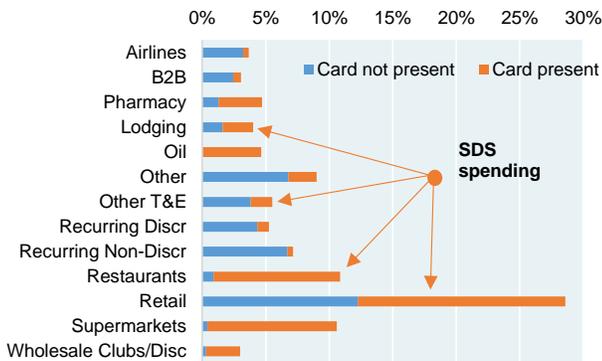
<sup>3</sup> Our data may or may not be representative of national consumer spending trends. While it is based on a large number of cardholders, we have not made any attempt to normalize the data for age, gender, income or other factor differences vs the national average.



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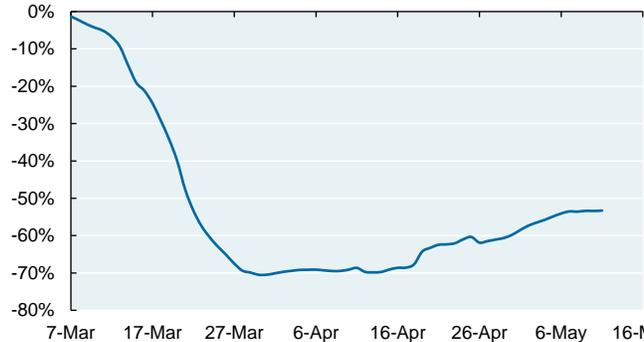
from home. For context, in our dataset, card-present SDS represented around one third of all consumer spending in 2019. The SDS decline this year is even sharper than the decline in total spending, since the latter includes food, gasoline, recurring payments and other non-discretionary items.

Dataset spending categories by transaction type, 2019



Source: Internal Chase data, JPMAM, 2019.

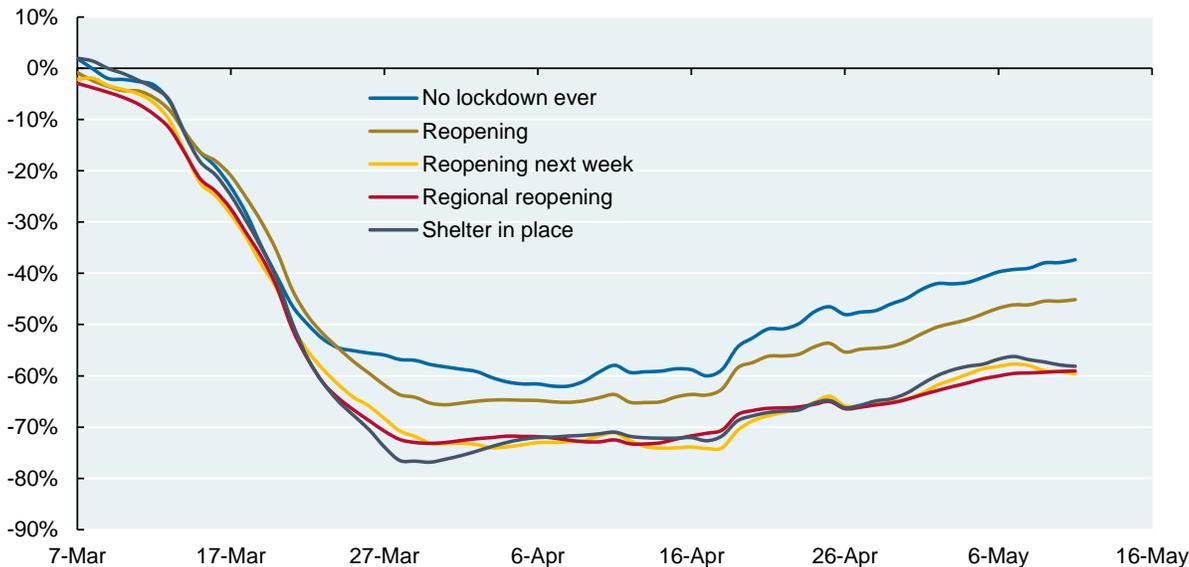
National credit and debit card spending trends  
Social distancing categories, card present transactions only  
Spending change 2020 vs 2019, 7 day smoothing



Source: Internal Chase data, JPMAM. Social distancing: retail, lodging, restaurants, amusement parks, theaters and other recreational services. May 11, 2020.

However, the line chart above includes a mix of states with different lockdown policies and infection rates. **How quickly might SDS recover once lockdowns end and when infections fall?** That's what we attempt to analyze next. The chart below shows the change in SDS as a function of each state's current reopening status. As you might expect, states that never had a lockdown, and the states that have already reopened by now, are seeing faster SDS recoveries while the others are still stuck in neutral. As an investor, what matters more to me at this stage is the **pace** of SDS recovery, rather than the y/y level.

Credit and debit card spending trends according to current state reopening status  
Social distancing categories, card present transactions only  
Spending change 2020 vs 2019, 7 day smoothing



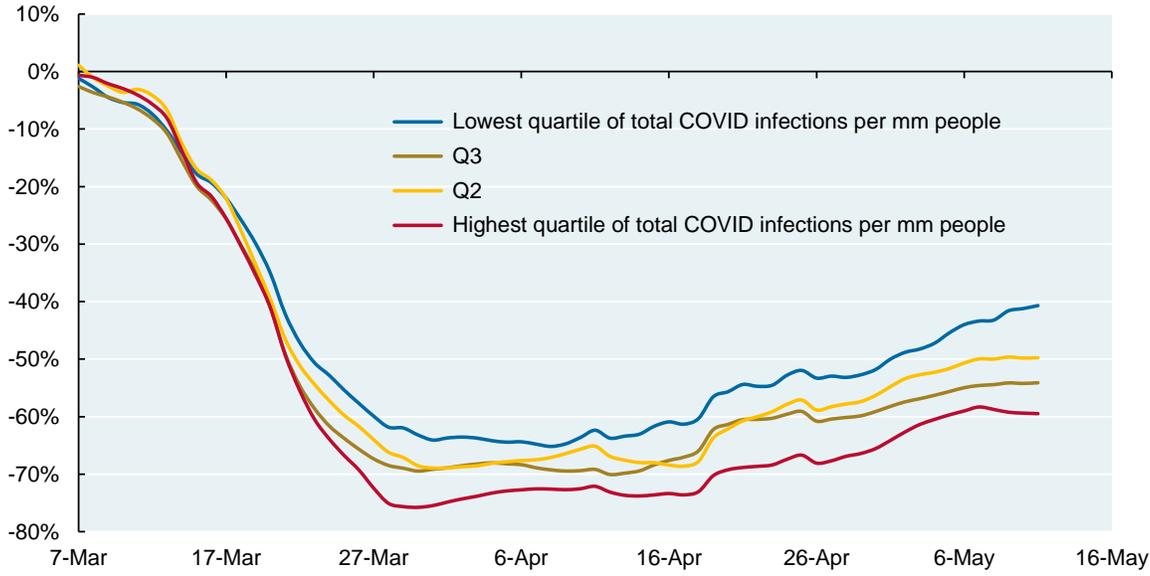
Source: Internal Chase data, JPMAM. Social distancing: retail, lodging, restaurants, amusement parks, theaters and other recreational services. May 11, 2020.



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Another way to understand the impact of the virus on spending and what might happen when it eventually fades: **how is SDS faring in states with lower infection and mortality rates?** The next chart looks at SDS as a function of infections to date, which we rank in quartiles. As you might expect, states with the lowest quartile of infections per capita are experiencing faster recoveries in SDS. The same holds true for SDS relative to deaths per capita, and relative to recent infection trends.

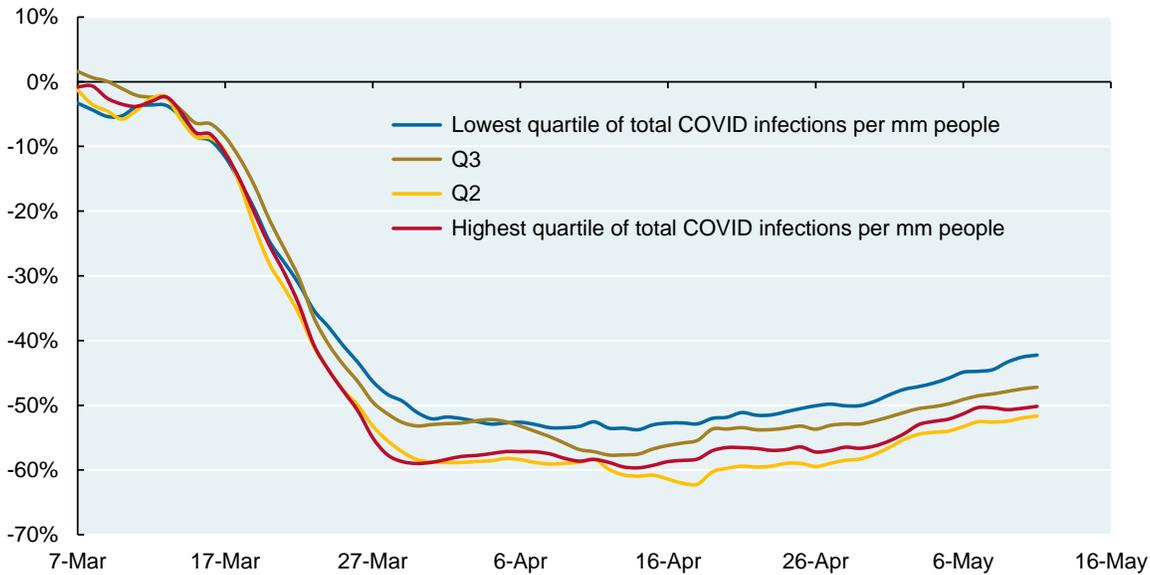
Credit and debit card spending trends according to quartile of total COVID infections per mm people  
 Social distancing categories, card present transactions only  
 Spending change 2020 vs 2019, 7 day smoothing



Source: Internal Chase data, JPMAM. Social distancing: retail, lodging, restaurants, amusement parks, theaters and other recreational services. May 11, 2020.

The next chart shows **oil/gasoline spending**, for which the pace of recovery is more muted.

Credit and debit card spending trends according to quartile of total COVID infections per mm people  
 Oil only, all transactions  
 Spending change 2020 vs 2019, 7 day smoothing

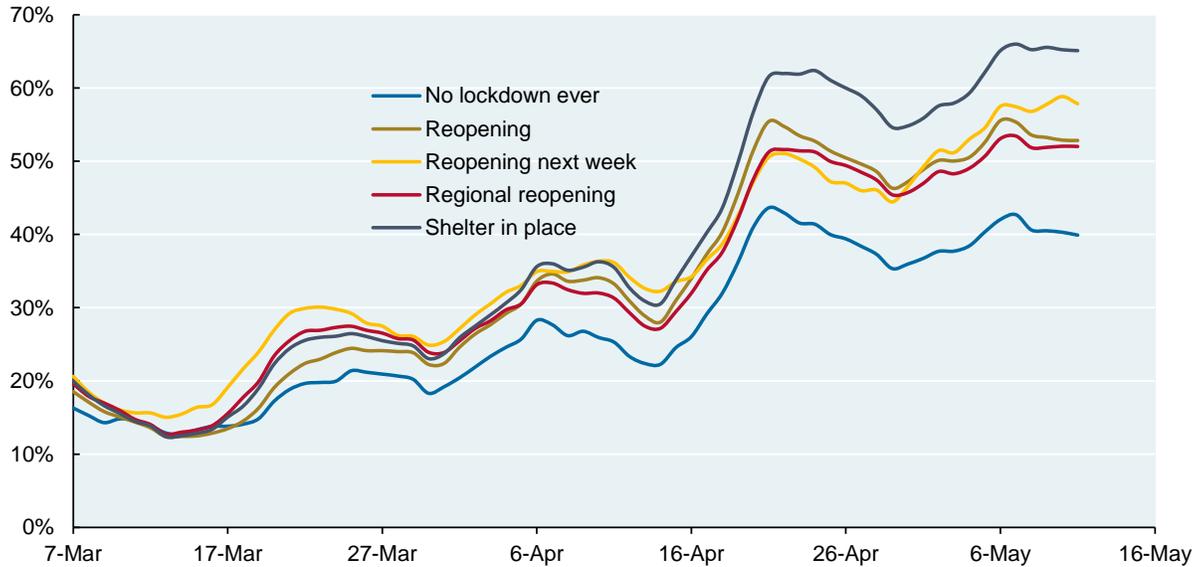


Source: Internal Chase data, JPMAM. May 11, 2020.



**What about retail spending based on e-commerce?** It's booming, even in more open states.

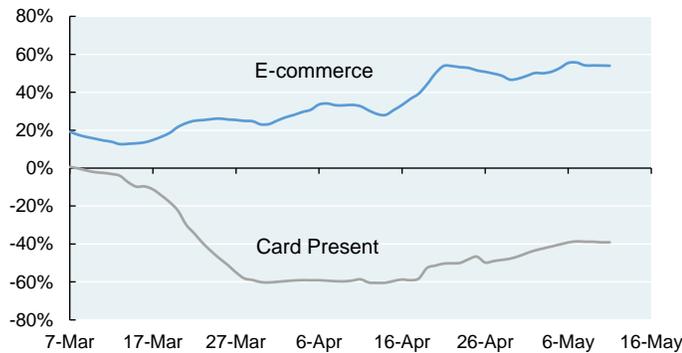
Credit and debit card spending trends according to current state reopening status  
 Retail only, ecommerce transactions only  
 Spending change 2020 vs 2019, 7 day smoothing



Source: Internal Chase data, JPMAM. May 11, 2020.

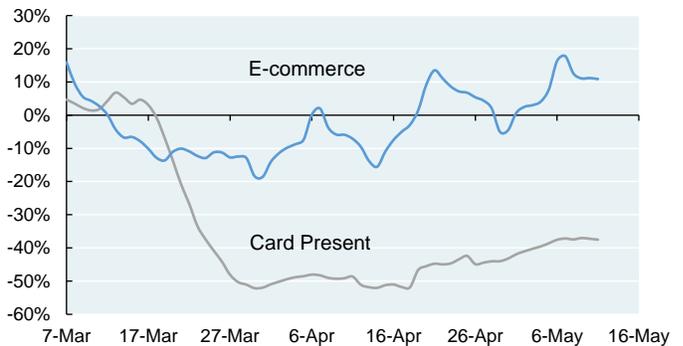
The final two charts compare e-commerce and “card present” transactions for retail only, and then for all spending categories in our dataset. **Lingering consumer preferences for e-commerce after the pandemic is over may be one of its more lasting legacies, with implications for a wide range of sectors and industries.**

National credit and debit card spending trends  
 Retail only  
 Spending change vs 2019, 7 day smoothing



Source: Internal Chase data, JPMAM. . May 11, 2020.

National credit and debit card spending trends  
 All spending categories  
 Spending change vs 2019, 7 day smoothing



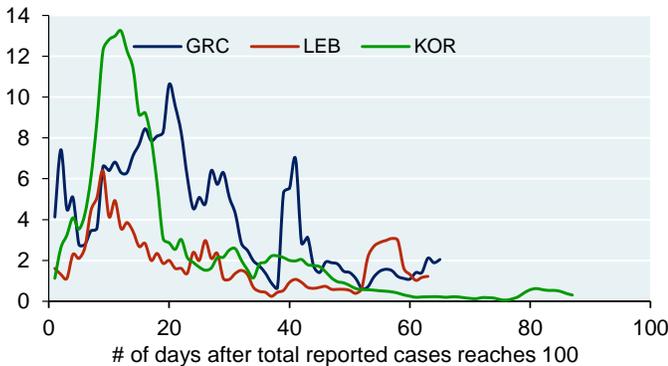
Source: Internal Chase data, JPMAM. . May 11, 2020.



**Searching for second infection waves: nothing found, yet**

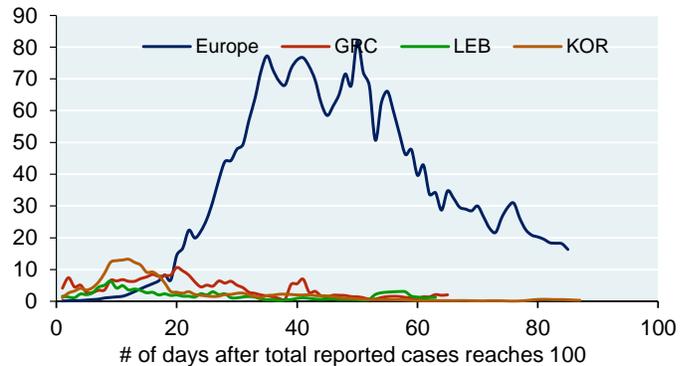
What does a second infection wave look like? We scanned for countries whose infection rates (a) dropped sharply from prior higher levels, (b) appeared to be contained, and then (c) rose again. We only found three countries that came close to meeting this definition: Greece, Lebanon and South Korea (left chart). But to put things in context, as shown on the right, these countries' infection rates pale in comparison to infection levels elsewhere. So, despite various stages of reopening taking place across Asia and Europe, we are not finding *reported* evidence yet of material second waves of infection.

**New daily infections per mm people [Second waves]**  
Linear scale, 3 day trailing average



Source: Johns Hopkins University, IMF, JPMAM. May 17, 2020

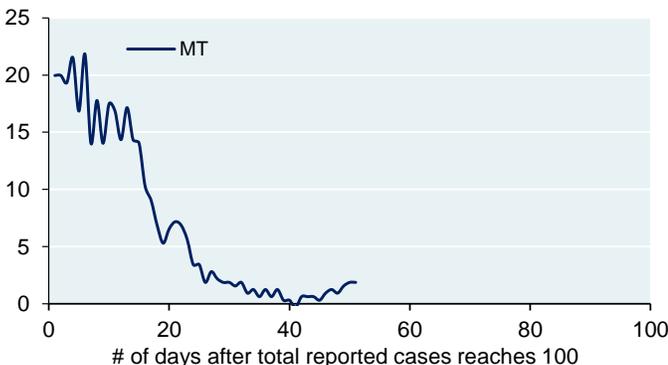
**New daily infections per mm people**  
Linear scale, 3 day trailing average



Source: Johns Hopkins University, IMF, JPMAM. May 17, 2020

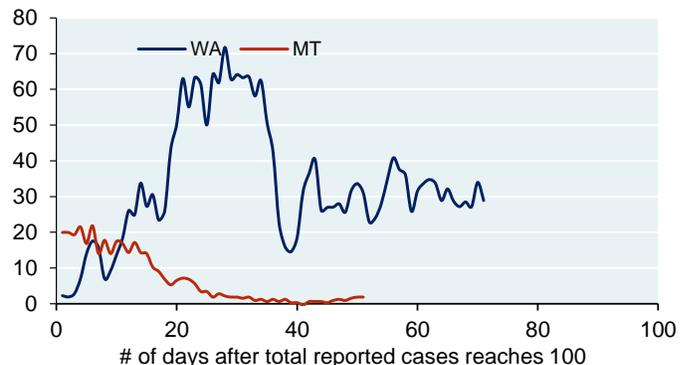
**The same holds true for the US states, to which we're applying the same second wave litmus tests.** The only state that showed up so far is Montana, whose stay-at-home order expired on April 26, with restaurants and bars reopening on May 4. However, at 2 cases per mm people, Montana has a miniscule infection rate compared to states like Washington, which itself is below the median US state. **The bigger problem for the US is not second waves but how stubborn the first wave has been: Washington was one of the earliest outbreak zones, and its COVID infection rate hasn't really improved in the last month.**

**US new daily infections per mm people**  
Linear scale, 3 day trailing average



Source: Johns Hopkins University, IMF, JPMAM. May 17, 2020

**US new daily infections per mm people**  
Linear scale, 3 day trailing average



Source: Johns Hopkins University, IMF, JPMAM. May 17, 2020

**Moderna, Oxford, SinoVac and anticoagulants (blood thinners)**

- **Moderna** released interim results from its Phase I mRNA vaccine trial. Of 45 vaccine recipients, immunogenicity (the level of immune response) increased according to dosage in all of them, which is good news. For most patients, antibody efficacy results were not available yet (i.e., whether or not antibodies were “neutralizing” with respect to the virus). However, of 8 patients whose detailed results were available, all had neutralizing antibodies in amounts similar to that seen in recovered patient blood samples, which is more good news. To be clear, **neutralizing antibodies are the goal of any vaccine, but they must also be generated in sufficient amounts to overcome the virus; that’s something that can only be determined in Phase II/III**. Moderna reported no “serious” adverse reactions among the vaccine recipients, and also released preliminary information on an animal trial using a mouse model of disease, which although limited, was also encouraging. “Limited but very promising” is the way my sources tended to assess the results.
- **Oxford** released a preliminary research paper stating that its vaccine had successfully generated antibodies in rhesus monkeys within 28 days, and that no lung damage or disease was observed in vaccinated monkeys. However, Oxford did acknowledge that the virus was still actively replicating in the noses of the monkeys. **This latter fact was the basis for some swift disagreement regarding the progress Oxford is making**. American biotech pioneer William Haseltine (former Harvard Medical School professor known for his groundbreaking work on HIV/AIDS and the human genome) wrote<sup>4</sup> that there was no major difference in the viral load measured across treated and placebo monkey groups. Furthermore, Haseltine considered the level of antibodies reported by Oxford to be very low compared to typical vaccines. However, others have noted that the vaccinated monkeys did not suffer from viral pneumonia, while the 2/3 of the placebo group did. So, some red flags here that are worth watching as Oxford moves to human clinical trials.
- **Sinovac** also announced results from its monkey vaccine trials. For the highest-dosed monkeys, no viral DNA was found, and the vaccine apparently provided “sterilizing” immunity (i.e., the virus would have no ability to replicate if enough people were vaccinated, since enough neutralizing antibodies are created<sup>5</sup>). The vaccine dosage and viral load infection levels were different across Sinovac and Oxford monkey trials (the latter used very high viral loads), so they are not that easy to compare. Results from human trials will be the next important disclosure to evaluate from both of their vaccine efforts.
- A May report in the *Journal of the American College of Cardiology* analyzed medical records of 2,773 COVID-19 patients in NYC hospitals. The study was initiated after doctors realized that COVID can result in life-threatening blood clots. Notable findings: survival rates for intubated patients treated with **anticoagulants** were 71% compared to 37% for who did not. This is not an anti-viral treatment, but is another example of pharmaceutical interventions that can reduce mortality

<sup>4</sup> “Did the Oxford COVID vaccine work in monkeys? Not really”, William Haseltine, Forbes, May 16, 2020

<sup>5</sup> “Criticisms of the Oxford coronavirus vaccine”, Derek Lowe, May 18, 2020



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