

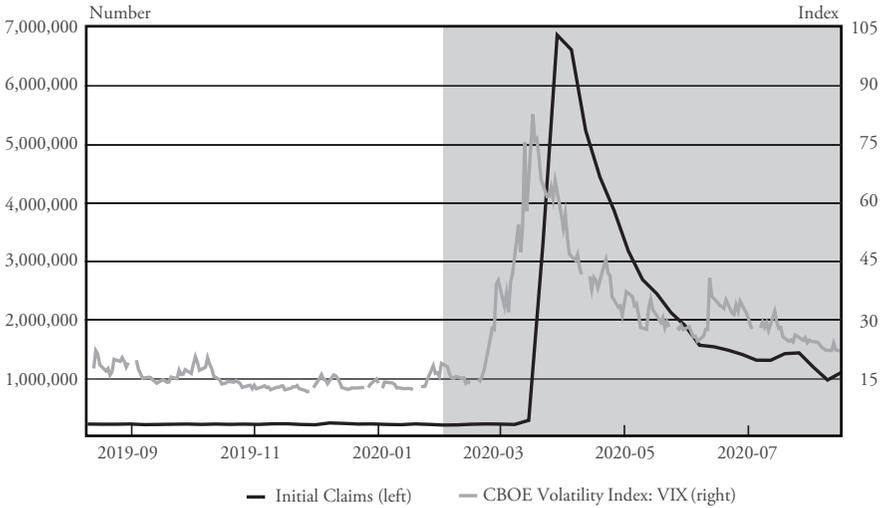
Commentary: Economic Uncertainty and the Recovery

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The paper by Jose Barrero and Nick Bloom on the effect of uncertainty continues the Jackson Hole symposium's long tradition of providing thought-provoking and topical work for the consideration of policymakers. Barrero and Bloom further a research agenda by Nick and his many co-authors on uncertainty and its potential effects on the economy—a tremendously important question during this pandemic. They show incontrovertibly that measures of uncertainty have risen. I will focus my comments on what those measures tell us in or out of the pandemic, and then how those effects have played through in the crisis so far. I will also propose some other economic effects of uncertainty that may have become more relevant now during this extremely disruptive period.

The first measure of uncertainty that Nick presents in the paper is the VIX, showing that this financial market measure of uncertainty has spiked up, as many of them do. Before going into details, it is worth noting that these measures of uncertainty tend to rise together when there is upheaval in the economy. Chart 1 shows the VIX together with the spike in unemployment claims, from the real side of the economy, which moves in close concert with the VIX. Econometric studies work hard to disentangle these effects, but it does require some care to interpret the uncertainty measures in isolation.

Chart 1
The VIX and Initial Claims for Unemployment Insurance



Sources: CBOE, U.S. Employment and Training Administration.

Other measures of uncertainty used in the paper are based on textual analysis, pioneered by Nick and his co-authors. These are holistic measures of uncertainty and policy, since they include search terms focused on policy institutions like “Congress” and the “Federal Reserve” and policy outcomes like “legislation” and “regulation.” These text measures may not capture uncertainty *about* policy *per se*. If there is uncertainty in the economy, for example, and government action to address it, then the policy terms and the uncertainty terms may appear together without the policy *causing* uncertainty. More generally, these terms capture the concurrence of policy and uncertainty perceptions. In the COVID-19 pandemic, all of these measures have gone up together. It is not really the time to worry about a specific or individual measure but to recognize that they have all risen. Given that, I will focus now on what effect heightened uncertainty might have on the economy.

Why does uncertainty matter for the economy? The effect that Barrero and Bloom emphasize in this work and elsewhere is a real options mechanism that operates when investment is difficult to reverse. When uncertainty is high, decision makers will be cautious about undertaking irreversible actions because it will be difficult to

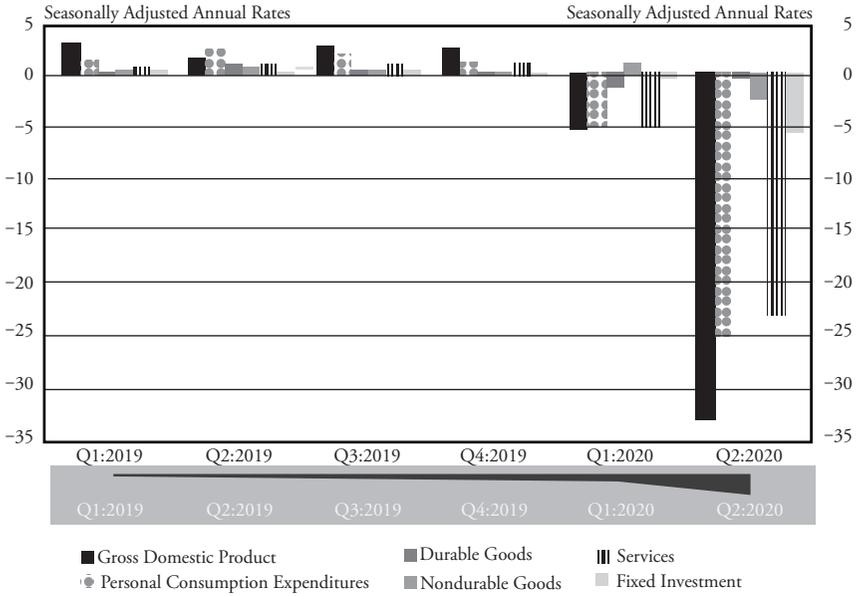
undo them. Instead, firms or households may prefer to wait and commit when they have more information, described as the option value to delay. Other work shows this effect is exacerbated when there are financial frictions, which is also discussed in the paper. In order to look for uncertainty effects in the data, we want to especially examine parts of the economy that have this costly reversibility feature, which leads to focus on investment and consumer durables.

Chart 2 shows U.S. GDP for the first and second quarters of 2020. The black bar shows the decline in GDP, of 5% for the first quarter and 33% for the second quarter. These declines are driven largely by consumption (dots) and especially, the service subcomponent of consumption (stripes). Investment is the light gray bar on the right, which has contributed to the decline in GDP, but is a relatively small contributor. Given the unique nature of the pandemic as an economic shock, these facts are not surprising, arising from sectoral shutdowns and self-protective behavior around personal services. The decline in output is not driven by the durables or investment component of GDP. Unusually, GDP dynamics are driven by services.

In Chart 3, motor vehicle sales (dots) rose in the second quarter, which is not what we typically see in a recession, particularly with uncertainty so high. One telling example is to compare recreational goods and vehicles, which have risen (horizontal stripes), with recreational services (vertical stripes) have declined nearly 100%. Hence, there appears to be a dichotomy between face-to-face services versus goods, which might be used for “home production” of recreation as a substitute for services. Retail sales, available monthly, show a similar pattern, with recovery in auto dealers, strong growth in digital and electronics, but a continued 25% level drop in food services. Note that the weakness in services is consistent with the sharp and persistent decline in employment, given the labor intensity of service sectors.

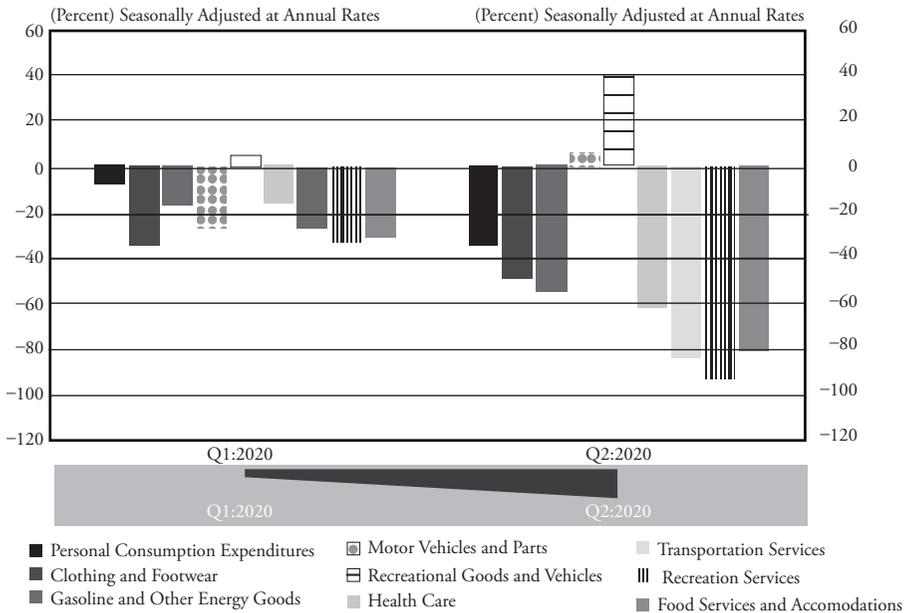
Why hasn't investment been weaker with such weak growth prospects and such high uncertainty? One might expect durables and investment to be even weaker. This question led me back to a class of models in which uncertainty acts through a different mechanism. The measure of uncertainty I find especially useful for this set of issues is the one reported in Barrero and Bloom's paper, Chart 4 here, which shows

Chart 2 Contributions to Percent Change in Real GDP Growth



Source: U.S. Bureau of Economic Analysis.

Chart 3 Percent Change in Selected Components of Consumption



Source: U.S. Bureau of Economic Analysis.

businesses' own expectations of their future sales. The key component is the lower tail, the gray dashed line, which shows that firms foresee a 10% chance of a 20% decline in sales going forward.

What should a firm do in these circumstances? Traditional real options models say that with the option to delay, the firm should essentially mothball itself: it should stop investing and also reduce employment. However, across categories of investment, some show this slowdown of structures and equipment overall, but other types of equipment are actually booming. There is more than a 60% increase in investment in computers and peripherals (Chart 5). Some aspects of investment have reacted positively in the crisis. Firms are managing in order to bridge the shock: investment in work from home, for example, investment in cybersecurity, investment in new modes of distribution, investment in new virtual platforms.

This mechanism is captured in real options models, but it is a different option than the one that is traditionally emphasized. Rather than facing costly reversibility, which causes caution about undertaking new investment, firms may instead face costly pre-emption or costly expansion in some aspects of their business. That is, there is a *cost* of waiting: the cost of being pre-empted and sidelined in the market. For firms competing in virtual markets and virtual platforms that opportunity cost could be a very substantial, by not gaining customers when the time was right. In a paper with Andy Abel, Avinash Dixit and Bob Pindyck¹ we show that those option values also rise when uncertainty is high. This alternative real option—to expand—might be especially valuable during times of disruption. This option also exacerbates the speed of the response—so that firms will move quickly rather than delaying, which exactly reverses the typical response that we expect to uncertainty.

The last context to mention is policy making: policymakers also face an uncertain environment for decision making. Policy decisions may be hard to reverse—as reversals can undermine credibility and make long-term planning in the economy more difficult. This could give policy makers an incentive to delay, and to wait for additional information or a more stable environment, as in a standard real options framework. However, policy outcomes are also intended in many

Chart 4
Distribution of Expected Future Sales, Barrero and Bloom

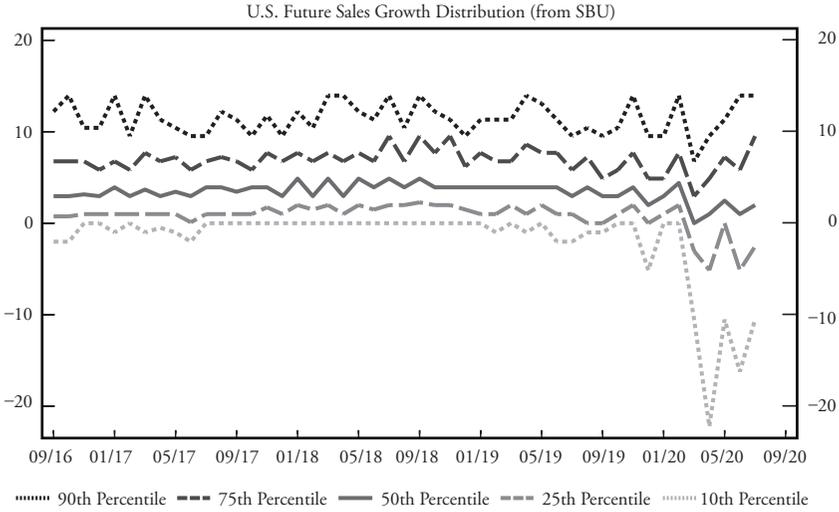
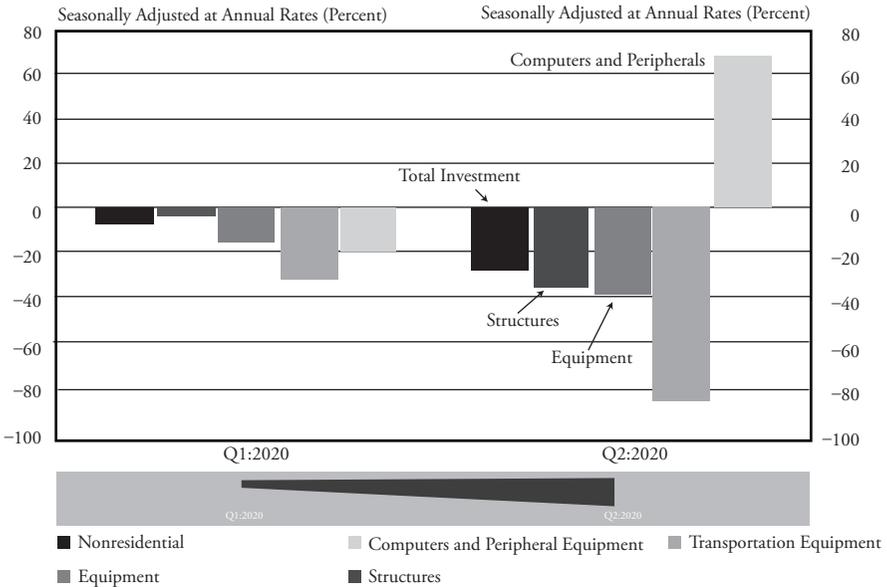


Chart 5
Percent Change from Preceding Period in Real Private Fixed Investment by Type



Source: U.S. Bureau of Economic Analysis.

cases to help bridge the shock or reduce its consequences. Policy is intended to be countercyclical, to reduce the impact on the shock of the economy—just as firms are trying to reduce the impact the shock of their enterprises. In that case the impact of higher uncertainty may not be to delay, but rather to act more quickly and aggressively, as in the option value to expand, which I have just outlined. There is a benefit to move quickly, and delay can worsen the potential outcomes. Policymakers and businesses effectively invest in insurance when they countershocks, and greater uncertainty increases the value of providing this insurance quickly.

In conclusion, the literature on uncertainty is obviously rich, thanks in large part to the work that Nick has done with many co-authors, and it is just getting richer over time. The economic effects of the pandemic push researchers to think beyond the traditional mechanisms in which uncertainty creates an incentive to delay. We may instead consider different real options that may speed up investment and shift it into new areas, as businesses and policymakers insure themselves and the economy from the worst effects of the crisis and the economic disruptions that will follow.

Endnote

¹Andrew B. Abel, Avinash K. Dixit, Janice C. Eberly, Robert S. Pindyck, "Options, the Value of Capital, and Investment," *The Quarterly Journal of Economics*, Volume 111, Issue 3, August 1996, Pages 753-777, <https://doi.org/10.2307/2946671>