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## Pandemic-Era Uncertainty on Main Street and Wall Street

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**Abstract:** We draw on the monthly Survey of Business Uncertainty (SBU) to make three observations about pandemic-era uncertainty in the U.S. economy. First, equity market traders and executives of nonfinancial firms share similar assessments about uncertainty at one-year lookahead horizons. That is, the one-year VIX has moved similarly to our survey-based measure of (average) firm-level subjective uncertainty at one-year forecast horizons. Second, looking within the distribution of beliefs in the SBU reveals that firm-level expectations shifted towards *upside* risk in the latter part of 2020. In this sense, decision makers in nonfinancial businesses share some of the optimism that seems manifest in equity markets. Third, and despite the positive shift in tail risks, overall uncertainty continues to substantially dampen capital spending plans, pointing to a source of weak growth in demand and in potential gross domestic product.

JEL classification: L2, M2, O32, O33

Key words: business expectations, uncertainty, subjective forecast distributions

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COVID-19 brought the most severe shock to hit the U.S. economy since at least the Great Depression. Concerns over the direct impact of the virus and the associated public policy response ushered in an era of enormous uncertainty. Businesses – our primary focus in this paper—wrestled with a whole host of near-term (and potentially longer-term) pandemic-induced challenges and changes in the economy.

Still, in what some see as a paradox, 2020 was a banner year for equities. While the early stages of the COVID-19 pandemic drove a spectacular rout in stock markets, equity prices recovered sharply after March. By late December, the S&P 500 index stood about 10 percent above its pre-pandemic peak in February 2020. In contrast, the outlook for the real side of the economy remains relatively downbeat, despite a strong rebound in 2020 Q3 and expectations of continued growth. If current growth projections are accurate, U.S. GDP won't return to February 2020 levels until 2021 Q4. Even then, output will remain well below its pre-pandemic trend. In contrast, equity values reached 2019 trend levels by late 2020 Q3.

In what follows, we use the national firm-level panel Survey of Business Uncertainty (SBU) to make three observations related to this “Main Street/Wall Street” divide. First, equity market traders and executives of nonfinancial firms share similar assessments about uncertainty at one-year look-ahead horizons. That is, the one-year VIX has moved similarly to our survey-based measure of (average) firm-level subjective uncertainty at one-year forecast horizons. Second, looking within the distribution of beliefs in the SBU reveals that firm-level expectations shifted towards upside risk in the latter part of 2020. In this sense, decision makers in nonfinancial businesses share some of the optimism that seems manifest in equity markets. Third, and despite the positive shift in tail risks, overall uncertainty continues to dampen capital spending plans, pointing to a source of weak growth in demand and in potential GDP.

## **I. The Survey of Business Uncertainty**

The SBU elicits subjective beliefs about own-firm future outcomes from about 470 business executives per month. The SBU panel draws from all 50 states, every major nonfarm industry, and a wide range of firm sizes. Core questions elicit five-point probability distributions (mass points and associated probabilities) over each firm's own future growth rates of sales revenue and employment at a one-year look-ahead horizon. Using these forecast distributions, we compute each firm's standard deviation of future growth rate possibilities and then aggregate over firms (weighting by activity) to obtain our SBU-based subjective uncertainty measures. See Altig et al. (2020) for details and an extensive analysis of firm-level beliefs in the SBU data.

While the SBU is a young survey, our approach to eliciting subjective forecast distributions from business decision makers has been adopted in several other surveys with large-scale institutional backing. The Bank of England, in partnership with the University of Nottingham, has fielded a monthly survey of U.K. firms since 2016 that adopts the SBU question design ([Bloom et al. 2017](#)). The U.S. Census Bureau fielded questions with the SBU design in the Management and Organizational Practices Survey (Buffington et al., 2017 and Bloom et al., 2020). The World Bank adopted the SBU approach to subjective forecasts distributions in a coordinated global survey effort to better understand the impact of the COVID-19 pandemic ([Apedo-Amah et al. 2020](#)).

## **II. Uncertainty during the COVID-19 Pandemic on Main Street and Wall Street**

Figure 1 presents our SBU-based measure of subjective uncertainty over sales growth rates and an analogous measure for the United Kingdom derived from the U.K. Decision Maker Panel. Sales growth rate uncertainty more than doubled in the United States and nearly doubled in the U.K. While these series have short histories, the pandemic-onset episode dwarfs any

pickup in uncertainty around the Tax Cuts and Jobs Act in late 2017 or during the 2018-19 period marked by increasing tariffs and global trade tensions.<sup>1</sup>

[ Insert Figure 1 Here]

Figure 2 compares the two subjective uncertainty measures to three other measures. The first two, the 1-month and 1-year VIX, are familiar metrics of equity market uncertainty. The third, the Economic Policy Uncertainty (EPU) Index of [Baker, Bloom, and Davis \(2016\)](#) reflects the frequency of newspaper articles with terms in each of three categories pertaining to the economy, policy matters, and uncertainty. While there are many measures of uncertainty (see [Barrero and Bloom, 2020](#)), we selected these three because they are well-known forward-looking uncertainty measures and are available in real time. For easy comparison, we normalize each series by its own average from January 2019 to January 2020.

Three results stand out in Figure 2. First, though all measures spiked in March 2020, the changes in the 1-month VIX and the EPU are extreme relative to the survey-based measures and the 1-year VIX. Second, all measures save the EPU have settled into levels roughly 50 to 75 percent higher than their pre-pandemic averages. Third, while still elevated, the 1-month VIX and EPU fell substantially after the early stages of the pandemic. The other three indexes, in contrast, point to a more modest drop in economic uncertainty through the end of 2020.

[ Insert Figure 2 Here]

The strongly similar patterns for the 1-year VIX, the SBU measure, and DMP measure at least partly reflect an alignment of the horizon over which uncertainty is measured: Sales growth rate forecasts in both the SBU and DMP are defined at 4-quarter ahead horizons. The message from this is not that one set of measures is superior to the others, but instead the rather obvious

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<sup>1</sup> The DMP was launched subsequent to the June 2016 Brexit referendum. Though the SBU has been conducted in some form since 2014, a methodologically-consistent series also post-dates Brexit.

point that the horizon over which uncertainty is defined matters. With respect to questions that involve expectations of business decision makers over something like a one-year horizon, the 1-year VIX is clearly a better proxy for uncertainty than the 1-month VIX.

### **III. A Deeper Dive into the Distribution of Beliefs**

One message from Figure 2 is that aggregate uncertainty remains highly elevated relative to the pre-pandemic norm. What is not apparent is that, at least in the United States, the distribution of beliefs that underlie overall uncertainty has shifted after the early stages of the pandemic. To develop this point, Figure 3 shows the evolution of average firm-level beliefs derived from the SBU. It is an updated version of a chart first shown in [Barrero and Bloom \(2020\)](#), who set forth the details of its construction.

We highlight three aspects of Figure 3. First, the median of future sales growth fell markedly at the outset of the pandemic and has since recovered to near its typical level. At first blush, that may seem an optimistic return toward “normality,” but it’s important to recognize that these projections are growth rates conditioned on current levels of activity. Because sales fell dramatically as a result of the pandemic shock, the median (and mean) projections are quite pessimistic, as they imply that firms do not anticipate regaining their pre-COVID sales levels through the end of 2021.

[ Insert Figure 3 Here]

Second, the figure reveals the not-so-shocking result that the lower tail of the subjective sales growth rate distribution became much more negative. Taking the 10th percentile outcome as a plausible estimate of a typical firm’s worst-case scenario, zero growth is a reasonable lower bound on the average firm-level expected outcomes before the pandemic. That worst-case

scenario fell to below -20 percent in April 2020. While it has since moved in the direction of less pessimism, it remains well below zero through December 2020.

Third, Figure 3 reveals that the distribution of outcomes has become increasingly concentrated in the upper tail of the growth rate distribution. Over the past quarter, the deviation of beliefs relative to the pre-pandemic norm has shifted from the lower tail to the upper one. Thus, the beliefs that underlie our overall uncertainty measure have become more optimistic.

#### **IV. Whither Capital Expenditures?**

From September through December in 2020, we asked panelists to rank order the top 3 sources of uncertainty impacting their decision-making processes. As shown in Figure 4, COVID-19 emerged as the top concern by far, and the November 2020 elections was second. The share of firms viewing the elections as their top uncertainty source dipped from 18 percent in October to 12 percent in the November survey (fielded from November 9-20). The elections rebounded to 16 percent in December, perhaps because it remains unclear which party will control the U.S. Senate, pending the January 2021 senatorial runoff elections in Georgia.

[ Insert Figure 4 Here]

In the October 2020 SBU, we also queried participants about the impact of uncertainty on their planned capital expenditures. Specifically, we asked “Are the uncertainties you just identified causing your firm to alter its budget for capital expenditures for calendar years 2021 and 2022?” The response options were yes (increasing), yes (decreasing), and no. For those that said “yes”, we then asked: “By what percentage has the net budgeted dollar amount of your capital expenditures for calendar years 2021 and 2022 [increased/decreased] due to the uncertainties you identified above?” Table 1 reports (sales-weighted) mean aggregate responses.

[ Insert Table 1 Here]

The survey-based estimate of uncertainty’s impact on capital expenditures in 2021 and 2022 is large and negative across sectors. This, despite the shift in beliefs from downside tail risks in the early stages of the pandemic to upside tail risks in the latter part of 2020. This negative uncertainty effect is much larger than the roughly 3 percent negative effect of “tariff hikes and trade policy tensions” on capex that firms reported in the November 2019 SBU and the small positive effects they attributed to the Tax Cut and Jobs Act. See Altig et al. (2018, 2019).

## **V. Concluding remarks**

Our results support the commonsense view that COVID-related uncertainty remains a dominant feature of the environment for business decision makers. In fact, contrary to the inference one might draw from the widely followed 1-month VIX, Main Street and Wall Street measures of uncertainty at a one-year horizon have declined only modestly from their peak levels in the spring of 2020.

According to our survey results, however, the nature of the uncertainty perceived by businesses has shifted since the early phases of the pandemic: Downside tail risk have diminished greatly, and upside tail risks have grown. Nonetheless, firms continue to report that high uncertainty exerts a substantial drag on their anticipated capital expenditures.

The trajectory of business investment spending is of great importance for the future path of productivity and GDP. We believe that firm-level surveys like the SBU can, and will, play a key role in monitoring these and other important developments as the economy continues to adjust and recover from the COVID-19 shock.



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## FIGURES AND TABLES

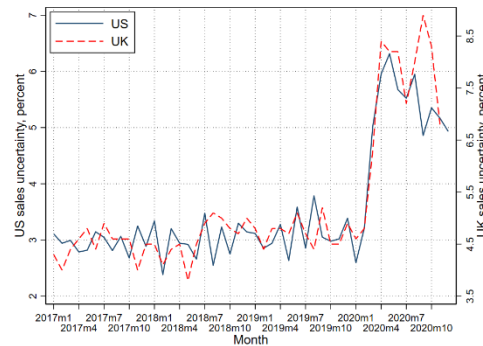


FIGURE 1. SUBJECTIVE UNCERTAINTY ABOUT SALES GROWTH RATES, U.S. AND U.K. COMPARED

*Notes:* SBU data through December 2020. DMP data through November 2020.

*Sources:* US firm-level sales growth rate uncertainty from the Federal Reserve Bank of Atlanta’s Survey of Business Uncertainty (in partnership with Chicago Booth and Stanford University). UK firm-level sales growth rate uncertainty from the Bank of England’s Decision Makers Panel (in partnership with Nottingham University).

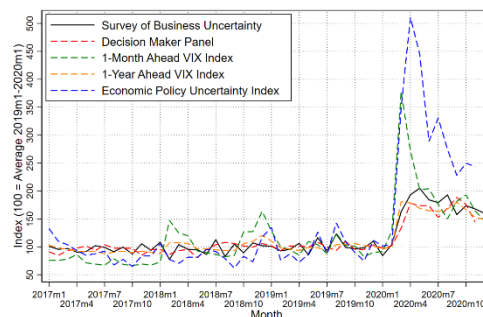


FIGURE 2. WALL STREET VS MAIN STREET UNCERTAINTY

*Note:* Data indexed to 100 from January 2019 through Jan 2020.

*Sources:* Federal Reserve Bank of Atlanta (SBU, data through Dec 2020); Bank of England (DMP, data through Nov 2020); CBOE (1mo VIX, 1yr VIX data through Dec 2020); PolicyUncertainty.com (EPU; data through December 2020).

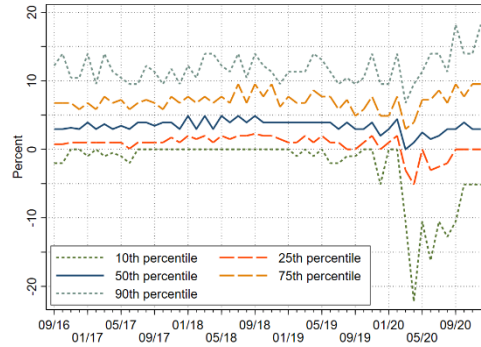


FIGURE 3. PERCENTILES OF SALES GROWTH RATE FORECASTS, LOOKING FOUR QUARTERS AHEAD

*Notes:* Data through December 2020. The chart shows employment-weighted average percentiles of the firm-level subjective forecast distributions of sales growth rates by month. See Barrero and Bloom (2020) for details.

*Source:* Survey of Business Uncertainty.

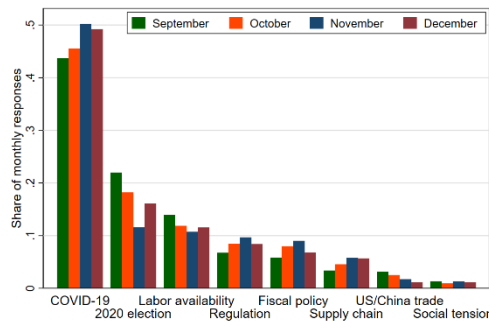


FIGURE 4. TOP SOURCES OF UNCERTAINTY INFLUENCING DECISION-MAKING IN LATE 2020

*Note:* Responses collected September 14-25, October 12-23, November 9-20 and December 14-25.

*Source:* Survey of Business Uncertainty.

TABLE 1. OCTOBER 2020 SURVEY ESTIMATES OF HOW UNCERTAINTY AFFECTED  
ACTUAL AND PLANNED CAPITAL EXPENDITURES IN 2021 AND 2022

Industry	N	Sales-weighted mean (percent)	S.E.
Overall	458	-12.8	1.259
Construction, Real Estate, Mining and Utilities	56	-17.8	2.884
Manufacturing	91	-10.5	2.868
Retail and Wholesale Trade	84	-12.2	2.257
Business Services	176	-12.1	1.640
Other Services	51	-10.3	5.308

*Note:* We first weight survey responses by firm-level sales and then re-weight to match the one-digit industry distribution of private sector gross output data from the Bureau of Economic Analysis.

*Source:* Survey of Business Uncertainty.