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MEASURING COVID-DRIVEN MACRO UNCERTAINTY

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INTRODUCTION

The COVID epidemic crisis is surrounded by an aura of deep uncertainty. Most countries are currently dealing with implementing the so-called “Phase 2” reopening, yet a great deal of questions remain unanswered, discovering a vaccine above everything. In this very brief focus, we try to compare several alternative instruments aimed at identifying forward-looking macroeconomic uncertainty.

STOCK MARKET VOLATILITY

A straightforward measure of market sentiment is the stock market volatility, and among others, one of its indicators is represented by the CBOE Volatility Index. Drawn upon the price inputs of the S&P 500 index options, the market index represents the market's expectation of 30-day forward-looking volatility.

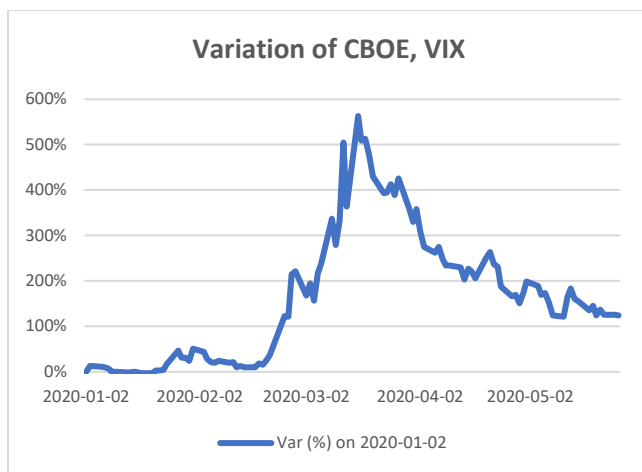


Figure 1 <https://fred.stlouisfed.org/series/VIXCLS>

It is crystal-clear that there has been a huge spike starting from the end of February 2020, reaching its peak in mid-March 2020 (more than +500% with respect to the value of early January), and then stabilizing around a value of 30, in May 2020 (+130%).

FIRM-LEVEL POLITICAL RISK

Hassan, Hollander, van Lent, and Tahoun (HHLT) use textual analysis of quarterly earnings conference-call transcripts to construct a firm-level measure of the extent and the type of political risk faced by individual firms listed in the United States (more than 6000 firms are included). We chose a sub-section relating to COVID for 1Q2020 and 2Q2020.



Figure 2 Minerva elaboration on Hassan, Hollander, van Lent, Tahoun <https://www.firmlevelrisk.com/home>

Net sentiment about COVID decreased from 1Q2020 to 2Q2020. Both negative sentiment and positive sentiment increased, but negative sentiment showed a greater magnitude.

NEWSPAPER-BASED MEASURES

An example of a newspaper-based measure is the Economic Policy Uncertainty (EPU) indices of Baker et al. (2016), whose daily version reports the frequency of newspapers articles quoting “uncertainty”, “economics” and “policy”, among others, in approximately 2.000 US newspapers. Values above 100 reflect higher-than-average uncertainty.

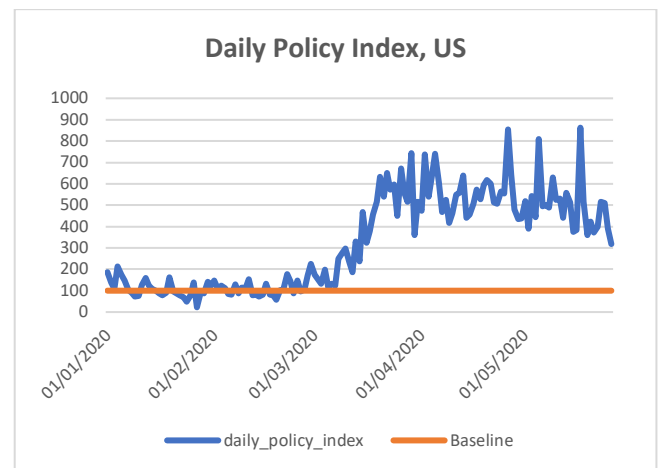


Figure 3 <https://www.policyuncertainty.com/index.html>

From early March, Daily Policy Index exceeds the average value of 100 and remains well above the threshold since then, with no sign of rest, thus witnessing the ongoing talks concerning the reopening issues.

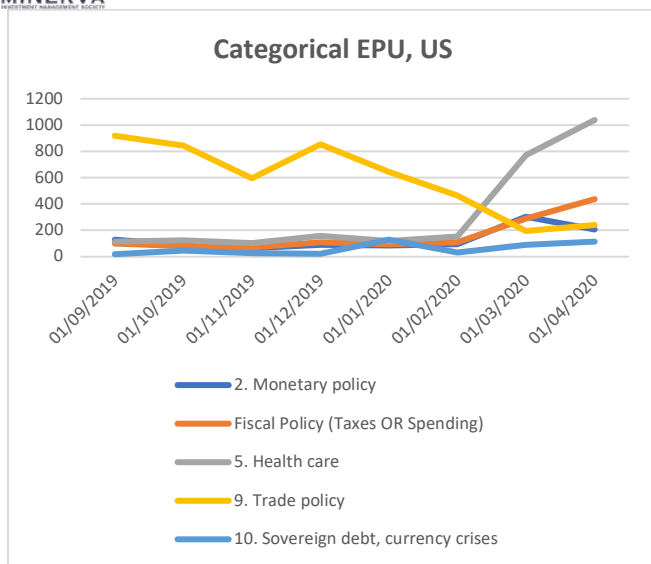


Figure 4 <https://www.policyuncertainty.com/index.html>

Decomposing the EPU into different categories for the US, we can see that Trade policy issues have been replaced mostly by Health Care and Fiscal Policy ones. It is interesting to note that Fiscal policy is playing a greater role in current debate. Monetary policy grew from March to April 2020, but then it decreased, whilst Fiscal policy kept rising.

Furthermore, it is interesting to look at the newspaper-based Infectious Disease Equity Market Volatility Tracker, which might be thought of as a sui-generis Categorical EPU looking at articles mentioning words like “equity”, “volatility”, “economy”, “risk”, and an ID linked to the outbreak. The following results show the terrific impact of COVID on such index:

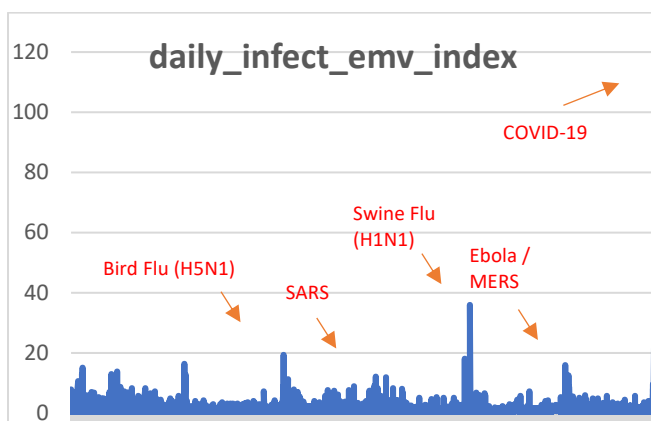


Figure 5 https://www.policyuncertainty.com/infectious_EMV.html

BUSINESS UNCERTAINTY

The Business Confidence Index provides information on future developments, based upon opinion surveys on developments in production, orders and stocks of finished goods in the industry sector. It can be used to monitor output growth and to anticipate turning points in economic activity. Numbers above 100 suggest an increased confidence in near future business

performance, and numbers below 100 indicate pessimism towards future performance.

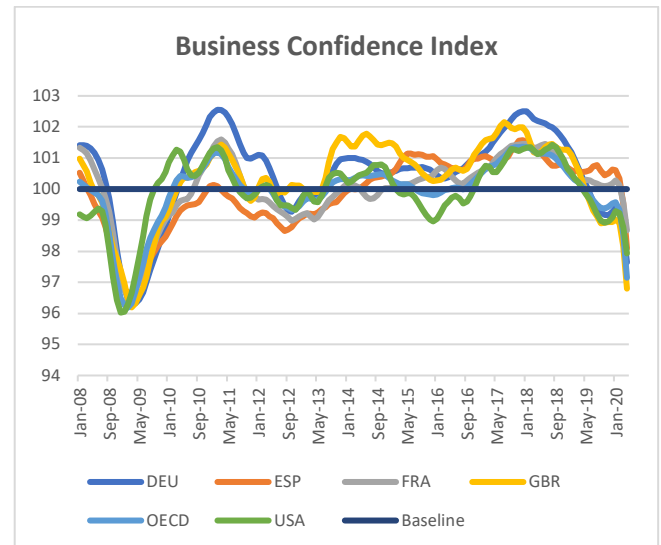


Figure 6 <https://data.oecd.org/leadind/business-confidence-index-bci.htm#indicator-chart>

A similar measure of business uncertainty for US only is provided by the Federal Reserve of Atlanta. This innovative panel survey measures the one-year-ahead expectations and uncertainties that firms have about their own employment, capital investments and sales. The figure shows a huge downward jump in business growth expectations, particularly sales. Also, the investment rate and the employment growth show a decline, which might well make the crisis longer and worse.

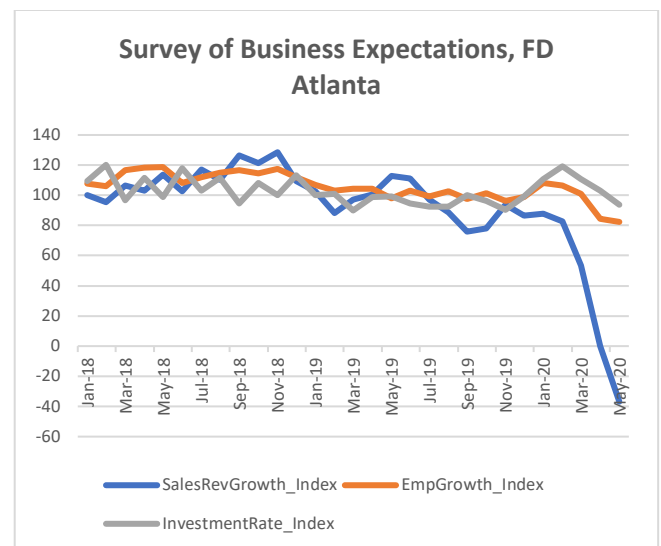


Figure 7 <https://www.frbatlanta.org/research/surveys/business-uncertainty?panel=1>

The following data are drawn upon the Decision Maker Panel (DMP, BoE), which collects questionnaires from more than 8,000 businesses in the UK. The April 2020 DMP survey was conducted between 3th and 17th April and received 2,720 responses.

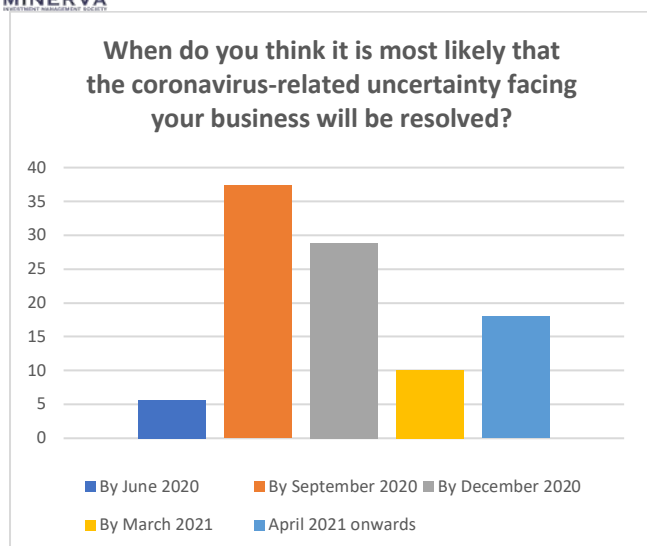


Figure 8 <https://www.bankofengland.co.uk/decision-maker-panel/2020/april-2020>

Most businesses expect Coronavirus-driven uncertainty not to decline before than next autumn, and a not-negligible fraction of it (more than 25%) not before March 2021 and April 2021.

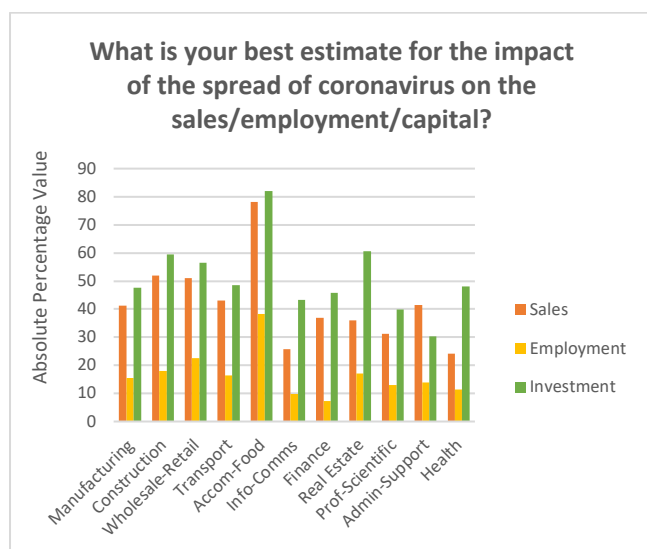


Figure 9 <https://www.bankofengland.co.uk/decision-maker-panel/2020/april-2020>

According to UK businesses, the expected impact of the outbreak is more sizable on sales and investment than on employment, even if it remains negative for all these entries. The most fragile sectors are Accommodation and Food (sales and investment), Real Estate (investment), Wholesale and Retail (sales and investment).

REAL IMPACT OF UNCERTAINTY

There is a wide set of approaches by means of which it is possible to generate time-varying measures of realized volatility and forecast uncertainty for GDP growth, industrial production, employment, trade, and other standard measures. Baker, Bloom and Terry

(2020) employ a vector autoregression model (BBT) that uses disasters as instruments for shocks. Their illustrative exercise predicts that the COVID-19 disaster will cause a large output contraction, more than half of which is due to COVID-induced economic uncertainty. Yet, there are potentially important mechanisms that played lesser roles in the disaster episodes to which BBT fit their model. For example, the COVID-19 crisis is leading to massive cuts in business expenditures on innovation, training and general management improvements, which could cause lower productivity going into 2021 and beyond. The irreversible nature of these investments in intangible forms of capital makes them particularly sensitive to uncertainty (see paragraph before). Finally, widespread school closures and an enormous shift to work-at-home practices in reaction to the COVID-19 pandemic seem likely to retard productivity in the near and long term.

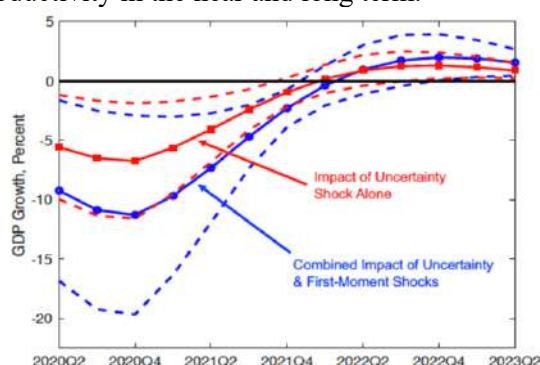


Figure 10 Baker, Bloom, Terry (2020)

To sum up, the outbreak has generated an enormous uncertainty shock – larger than the one associated with the Global Financial Crisis of 2008-09 and more similar in magnitude to the rise in uncertainty during the Great Depression of 1929-1933. According to Baker, Bloom and Terry (2020), using stock market measures to calibrate the first and second-moment aspects of the COVID-19 shock, and feeding them into an estimated empirical model of disaster effects, the implied contraction in US real GDP is 9% in Q22020 on a year-over-year basis and a peak year-on-year contraction of 11% two quarters later. Our illustrative exercise implies that more than half of the contraction is caused by COVID-induced uncertainty.

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