Publicly available high frequency indicators for assessing current economic activity in crisis time.

Arnaud Atoch
Sebastian Barnes
Thomas Brand
Marnix Dek
Gyorgy Gyomai
Michel Juillard
Jeroen Meyer

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1 Introduction

The COVID-19 pandemic triggered a sudden drop in activity of a magnitude unknown in recent history. In the Spring of 2020, several countries imposed a lock-down that lasted several weeks. Many sectors of economic activity came to a virtual halt. As the health conditions improved in late Spring, several countries lifted some of the restrictions, economies started to grow again, sometimes faster than expected. The relaxation of health restrictions lead to a new increase in contamination and stress on the health system that, at the time of writing, threatens the economic recovery.

These huge and sudden shocks impacted economic sectors in a very different manner. Activities linked to the digital economy were stimulated while activities involving close social contact are still severely impacted.

These very fast developments are only imperfectly described by usual statistics at a quarterly or even monthly frequency. Furthermore, such statistics can only be released with a delay that make them of little use for policy decisions. In such conditions, alternative indicators about particular sector of activities offer a partial glance at some aspect of economic life in almost real time.

Health indicators are updated on a daily basis. The digital economy collects a wealth of information about people mobility, some of their consumption habits, traveling, restaurant bookings. Credit cards provide information about consumption. Satellite pictures follow sea shipping across the world or road traffic. When such swings happen, even air pollution gives indication about the level of economic activity.

Bank of France, DBnomics and OECD got together to integrate a series of high frequency indicators into the DBnomics platform (https://db.nomics.world) and make them publicly available among traditional macroeconomic data. Whenever possible it is important that statistics about the current state of the economy be readily available for policy makers, for economic analysts and researchers and indeed for the general public.

One of the obvious advantage is that necessary discussions about policy alternatives start with a common set of data. The DBnomics platform is particularly convenient for this project. The platform already contains data from 70 institutions providing economic statistics worldwide representing 750 millions time series. DBnomics provides publicly available data freely in a common digital format.

In recent years, more and more economic data are made freely available to the public but all these different sources use different computer formats and are sometimes hard to access. DBnomics aims at providing a maximum of data via a single interface

where requests are made possible with a single interface so as to decrease the effort required to acquire economic data.
In this paper, we revisit six months of COVID-19 crisis through the lenses of this new set of high frequency indicators paying particular attention to international diversity of experiences.

2 Methods

In addition to monthly and quarterly data from institutional sources, we consider the following high frequency indicators:

- Google Mobility Index (daily)
- OAG flight departure (weekly)
- Air quality Index (daily)
- RTE and ENEDIS electricity data (daily)
- Citymapper Mobility Index (daily)
- Opentable restaurant bookings (weekly)
- Opportunity Insight Economic Tracker indicators (daily/weekly)
- Johns Hopkins University COVID-19 data (daily)

Most of these sources provide information about several countries, regions, or cities across the world.
We analyze the relation between these high frequency indicators and standard measures of economic activity at the monthly or quarterly frequency. We consider each indicator taken separately as well as the joined contribution of all high frequency indicators. Comparing with monthly or quarterly statistics of economic activity available later, we document the predictive power of the various high frequency indicators, in level or in growth rate.
We are particularly interested in three questions:

1) What is the predictive power of high frequency indicators for assessing current economic activity?

2) What is the influence of the current state of the epidemic on future economic activity?

3) Is the speed of recovery of economic activity an indicator of future evolution of the epidemic (the so-called second wave)?

3 Results

Preliminary results suggest that, when dramatic and abrupt events such as COVID-19 occur, real time indicators, even for a limited number of sectors, provide information about the severity of the crisis. It is more difficult to assess the contribution of high frequency indicators in normal times.

4 Conclusion

High frequency indicators are useful device to follow the economic situation during a crisis in real time and before official statistics are published. Many useful high frequency indicators are proprietary data, but it is also important that as many of them as possible be made publicly available.
Open Data projects such as DBnomics provide easy access to a great quantity of data in a common format even when they come from many different original sources. Such projects have the flexibility to respond quickly when new needs arise.