Title
Macroeconomic effects of the CoViD-19 supply shock: Evidence from a global country sample and a GVAR model

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Abstract
Given that the Global Vector Auto-Regressive (GVAR) method, proposed by Pesaran et al. (2004), provides a practical approach to model the world economy, we study the effects on the macroeconomic determinants of a large number of economies around the globe exposed to supply shocks associated with the CoViD-19 pandemic. We show an occurred absence of exogenous epidemics in the economic discourse, which risks undermining governmental flexibility and long-term planning. The existing analysis employs a compact quarterly model of the world economy to illustrate how supply shocks generated by CoViD-19 affect an extended number of both developed and emerging/developing economies, on a cross-section basis (spanning the year 2020). We use interchangeably three potential proxies for the CoViD-19 supply shocks: i) total confirmed incidences, ii) death incidences, and iii) the recovered patients. The Worldometers database allows us to extract CoViD-19 data, while Datastream takes care for the remaining data coming from a sample of 143 countries. Primary condition for the inclusion of a country in the analysis is to have reported CoViD-19 incidence within 2020. The presented GVAR/CoViD-19 model will generate findings on the global macroeconomic implications of CoViD-19 supply shocks with a demonstrated impact on quarterly real GDP, inflation, money supply and credit conditions, public deficit and interest rates. At the same time, specific robustness tests will follow based on different definitions of the variables under study, as well as on various country regions/groups. The findings demonstrate a widespread lack of attention on the “unforeseen” until now supply shock to fully and correctly assess the consequences upon salient macroeconomic variables. Overall, the findings carry clear implications for the role of epidemic shocks in the real economy. Considering how epidemic shocks also tend to affect the expectations of economic participants, this study is calling into question the absence of epidemics in accounting for forthcoming health-related incidences. In his famous book about the 4th industrial revolution, Professor Klaus Schwab and Executive Chairman of the World Economic Forum raised the alarm for the elevated risk on widespread epidemics expected in the 21st century. Following Schwab’s (2017) early warning, we aspire to increase awareness for policymakers to learn more about those shocks and the ways to cope with them.

Keywords: supply shock; CoViD-19; macro variables; GVAR; 183 countries

JEL Codes: E2; I1; C21

Data description
The analysis makes use of data for the year 2020 coming from 143 countries. The countries included in the empirical analysis can be seen below. Their selection was exclusively based on data availability.
**CoViD-19 data**
i) total confirmed incidences, ii) death incidences, and iii) the recovered patients.
Source: The Worldometers database

**Economic data**
Real GDP and GDP per capita. Source: Datastream
Consumer price index. Source: Datastream
Money supply defined as Money M1. Source: Datastream and IFS
Total credit defined as the domestic bank credit to private sector as a percentage of GDP. Source: Datastream and IFS
Public deficit. Source: Datastream and IFS
Short- and long-term interest rates. For certain countries, short-term interest rates are defined as T-bill rates; for those these data are not available, a proxy for short-term deposits rates has been used. For certain countries, long-term interest rates are defined as 10-year bond rates; for those these data are not available, a proxy for

**List of countries**
Albania, Algeria, Angola, Antigua and Barbuda, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahamas, Bahrain, Bangladesh, Belarus, Belgium, Benin, Bolivia, Botswana, Brazil, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Canada, Central African Republic, Chad, Chile, China, Colombia, Congo Democratic Republic, Congo Republic, Costa Rica, Cote d’Ivoire, Croatia, Cuba, Cyprus, Czech Republic, Denmark, Djibouti, Dominica, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Ethiopia, Fiji, Finland, France, FYROM, Gabon, Gambia, Georgia, Germany, Ghana, Greece, Grenada, Guatemala, Honduras, Hungary, India, Indonesia, Iran, Iraq, Ireland, Italy, Israel, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Korea Republic, Kuwait, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Lithuania, Luxembourg, Madagascar, Malawi, Malaysia, Maldives, Mali, Malta, Mauritania, Mauritius, Mexico, Moldova, Mongolia, Morocco, Mozambique, Myanmar, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Nigeria, Norway, Oman, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Qatar, Romania, Russia, Rwanda, Saudi Arabia, Senegal, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia, Somalia, South Africa, Sri Lanka, Sweden, Switzerland, Tajikistan, Tanzania, Thailand, Togo, Trinidad & Tobago, Tunisia, Turkey, Uganda, Ukraine, United Arab Emirates, United Kingdom, United States, Uruguay, Venezuela, Zambia, Zimbabwe.