Forecasting under extreme uncertainty

SUERF webinar
Economic forecasting during and after corona
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Topics

• Immediate challenges to nowcasting and forecasting due to the corona crisis
  
  * Real-time economic indicators
  * Role of sectoral analysis
  * Linking firms’ financial analysis, banking sector analysis and conjunctural analysis and forecasting

• Long term effects of corona crises
  
  * Implications for estimates of potential output and for inflation forecasting
The role of real time economic indicators

- Turning to non-standard and high-frequency data became necessary to assess economic developments in quasi-real time
  - Traditional monthly indicators were not able to react quickly enough to the changing economic situation due to publication lags
  - Weekly trackers of economic activity (e.g. Federal Reserve Bank of New York)

- Increasing use of less common data sources such as electricity consumption, payments card data, traffic data, unemployment benefit data, temporary lay-offs, surveys, epidemiological data

- Combination of traditional and less common indicators
Example I: MIDAS model with financial market data

- Mixed Data Sampling models allow data of different frequencies to enter a model, i.e., we can forecast quarterly GDP using monthly, weekly or daily data.
  - MIDAS models thus allow a variety of indicators, also high frequency ones, to be included into one forecasting model.

- We used a regression model with a MIDAS lag polynomial structure to forecast Finnish quarterly GDP growth using (a principal component of) daily financial market data.

- Financial market data turned out to be useful for nowcasting the turning point in Finnish GDP growth
  - The MIDAS model could identify a downturn in GDP already in early March, while other nowcasting models did not recognize a downturn until April.

- Financial market data was, however, unable to account for the severity and persistence of the economic downturn, compared to other nowcasting models.
Example II: BVAR with real-time data

• Use two sets of variables to predict industrial production
  1. Traditional indicators (Stock price index, interest rate spreads, PMI, confidence indicators)
  2. Real-time indicators (Electricity usage, truck traffic)
• Traditional indicators predict the current and future dynamics
• Real-time indicators predict the current dynamics only
• Enhanced the precision by setting priors on how the industrial production reacts to different types of indicators
Role of sectoral analysis

• Containment measures hit different sectors very asymmetrically
• Not a typical business cycle shock, so cannot trust usual business cycle moments (and therefore models) when making the short term macroforecasts

• More disaggregated and timely information needed
  • Frequently updated specialized surveys
  • Firm and household level data

• How strong is the cash position of the firms? How long can they last without or almost without cash revenues? What are their direct financing needs?
Example from a specialized survey to firms

- Survey of some 1,600 SMEs by state-owned investment company

- Firms evaluated their changes in turnover and responses to decline in turnover (adjusting their costs eg. labour costs, other costs) due to Covid19

- This was combined with financial statements of firms (2018) to assess liquidity situation of the firms to evaluate risk of bankruptcy under different lock-down scenarios
Linking firms’ financial analysis, banking sector analysis and conjunctural analysis

• At the BoF and FSA we did put an extra effort to get more frequent information on banks NFC lending activities related to corona crises
  • *It became a valuable source of information on firm’s financing needs as well as on the impact of different support measures*

• We also used empirical macro models to predict loan losses conditional on different macroeconomic scenarios
  • Challenge there continues to be that corona shock is very unusual
Long term growth effects of corona crises (?)

- Large shocks often lead to lower capital investment and capital stock
  - Financial frictions & borrowing constraints & precautionary savings
  - The re-evaluation of tail risks (scarring effect)
- Shortfall in demand → hysteresis in productivity & loss in potential output growth
  - Profits ↓ R&D ↓ technology adoption↓ → productivity growth ↓

Cumulative labor productivity response after epidemics:

What about inflation?

Positive
• Firm exit → fewer competition → increased price pressures
• Pent-up demand in the aftermaths of the pandemic + temporarily reduced supply
• Supply chain disruptions
• Deglobalisation

Negative
• Magnitude, depth and protracted nature of the crisis
• Persistent shifts in consumption behaviour
• Risk of inflation expectations becoming anchored at a lower level
• Bankruptcies + short-time work + unemployment → weakened aggregate demand
• Uncertainty: precautionary savings as insurance; delay of big ticket items
• Lower external cost pressures due to reduced global demand
General lessons

• When economic swings are unusually large, high frequency and more disaggregated data as well as surveys and direct contacts to stakeholders are needed to nowcast the economic situation.

• But it is too early to judge whether these new approaches improve our forecasting ability also in the short to medium term.

• Covid19 will leave permanent mark to the economy:
  • Consumption habits, technologies and production sets are changing.
Thank you!
Additional slides
How much help of forecasting with electricity consumption?

Forecasts of industrial production of Italy