

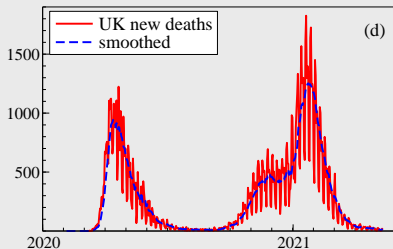
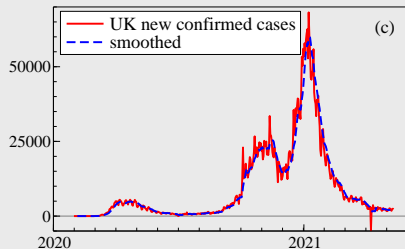
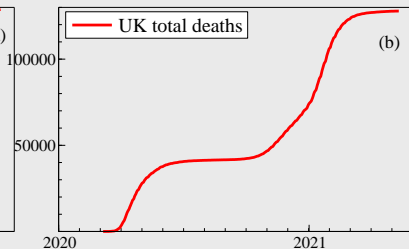
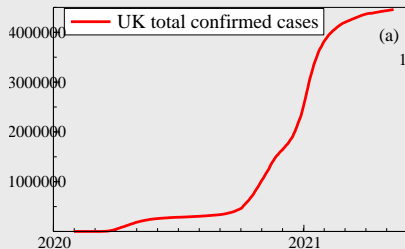


# THE VALUE OF ROBUST STATISTICAL FORECASTS IN THE COVID-19 PANDEMIC

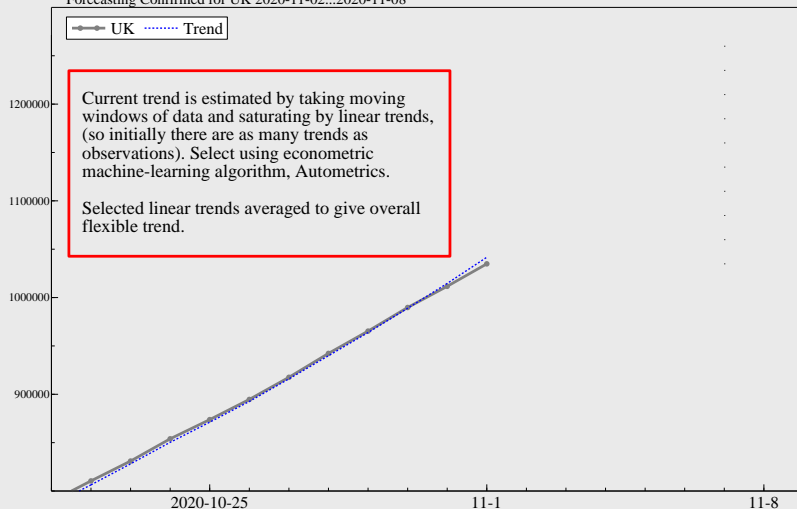
Jennifer L. Castle, Jurgen A. Doornik and David F. Hendry  
Climate Econometrics, University of Oxford

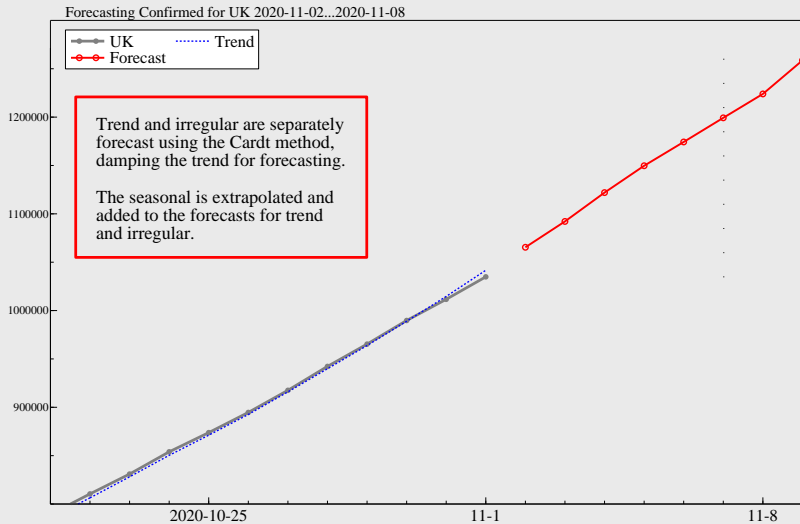
11th European Central Bank Conference on Forecasting techniques:  
Macroeconomic forecasting in abnormal times  
June 15-16, 2021

# COVID-19 UK cases and deaths: highly non-stationary data requires robust forecasting methods

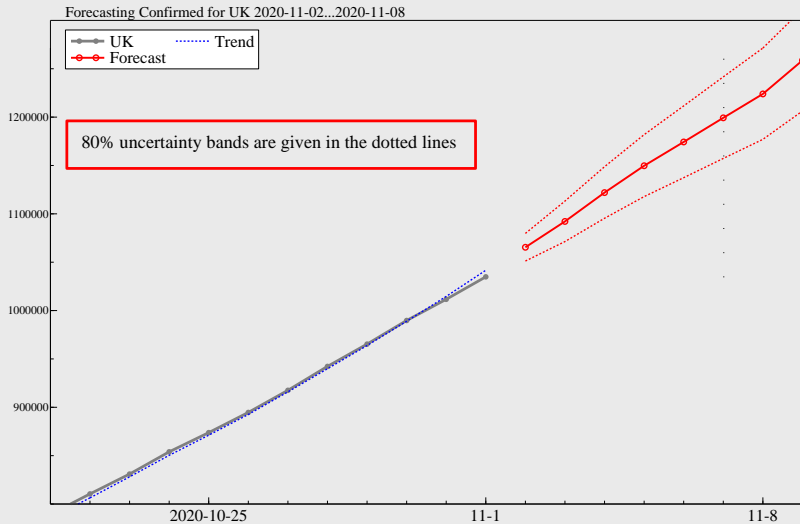


Forecasting Confirmed for UK 2020-11-02...2020-11-08

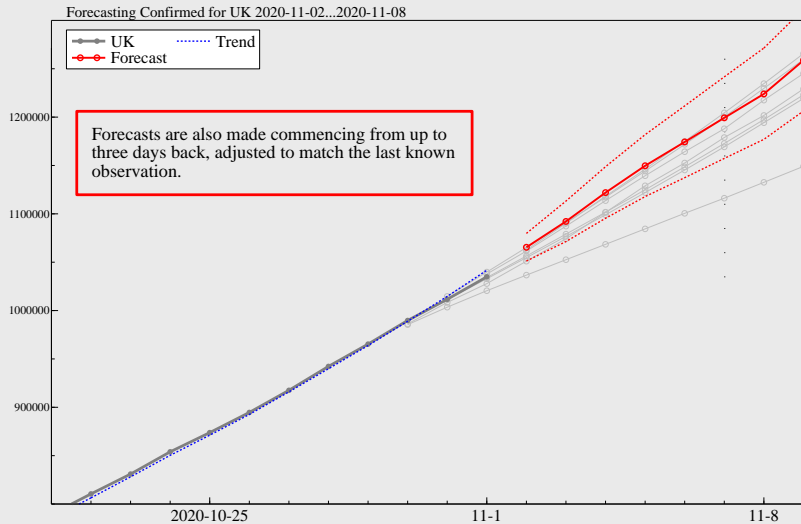




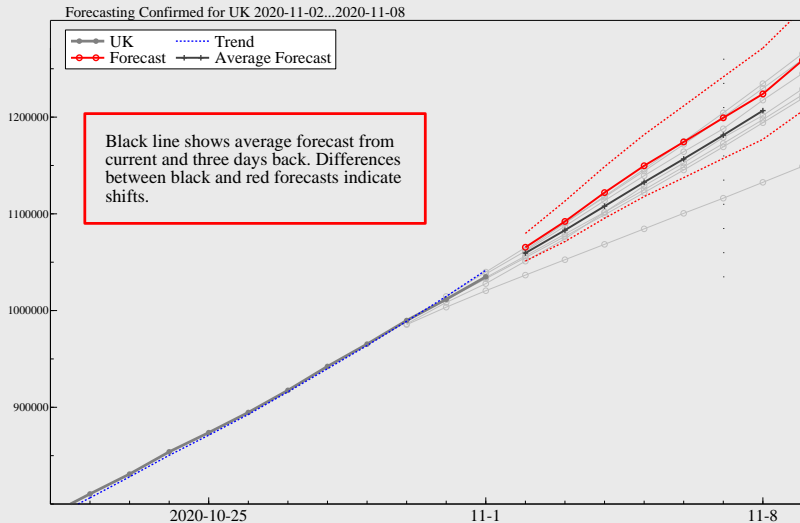
# A closer look at our forecasts: current with 80% intervals

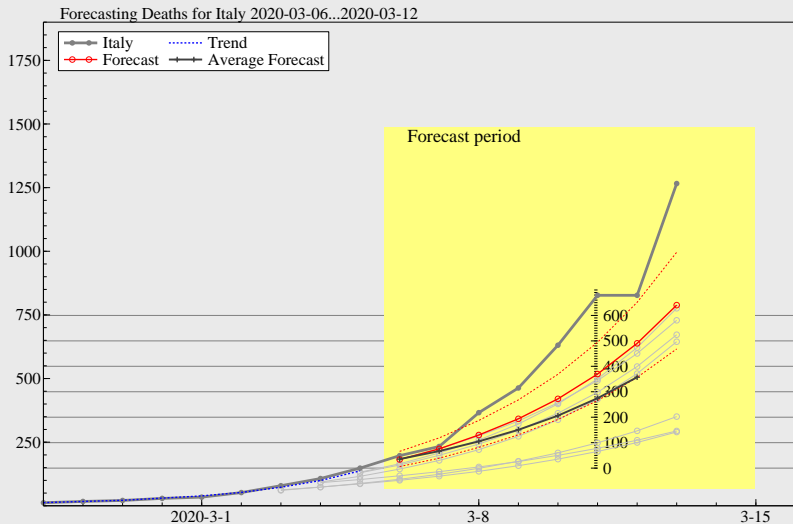


# A closer look at our forecasts: three days back



# A closer look at our forecasts: with average (adjusted)

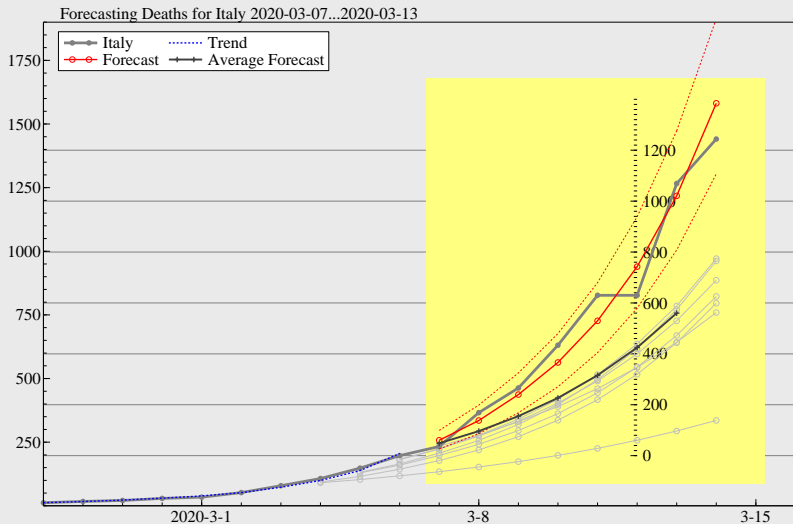




Forecasts for Italian total deaths from 6 to 12 March 2020.

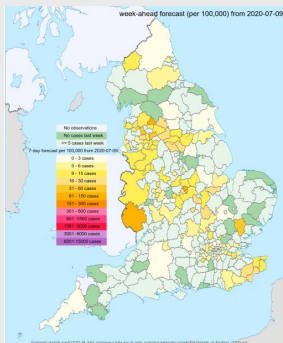
Source: [www.doornik.com/COVID-19](http://www.doornik.com/COVID-19).



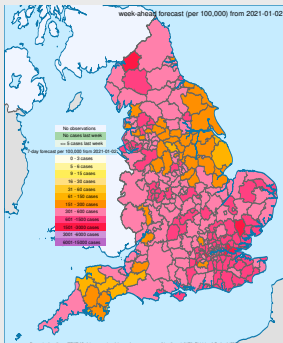


Forecasts for Italian total deaths from 7 to 13 March 2020.

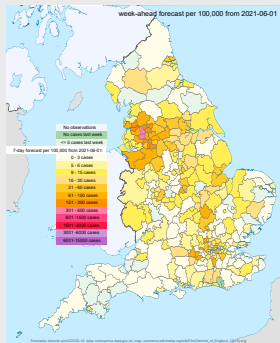
Source: [www.doornik.com/COVID-19](http://www.doornik.com/COVID-19).



9 July 2020



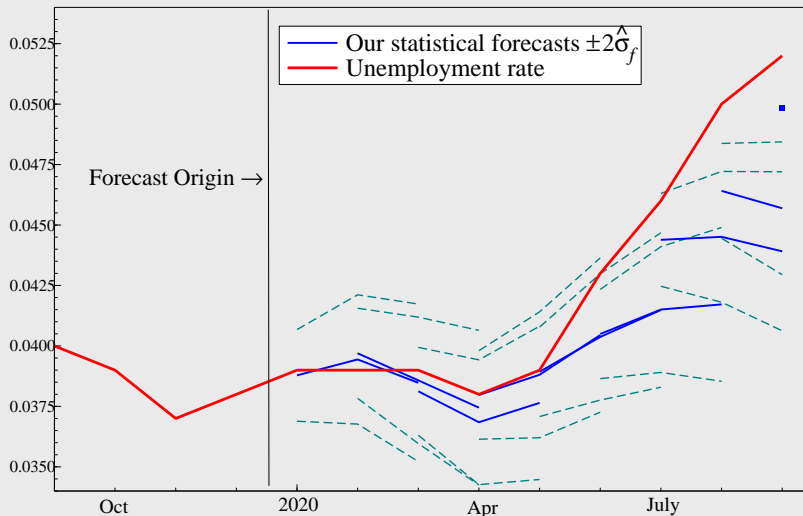
2 January 2021



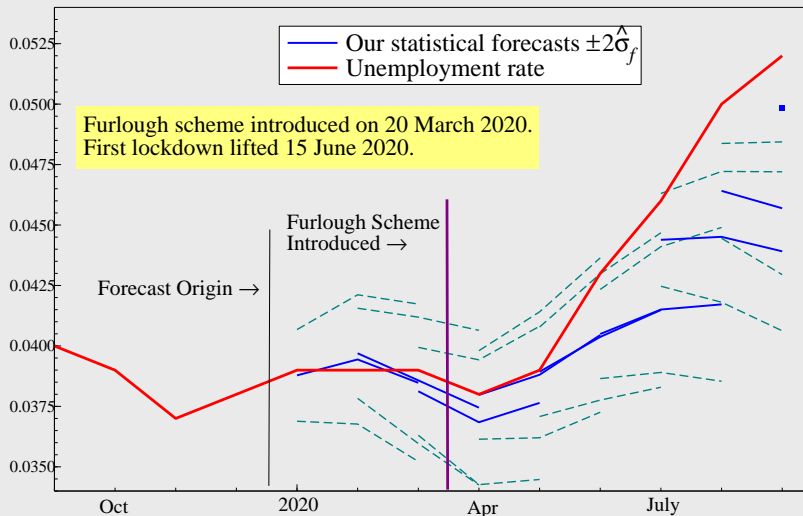
9 June 2021

**Forecast evaluation:** Compare evolution of forecast performance with other forecasts. Many forecasts now available but few available near start of pandemic. **Our forecasts fair well in comparison to epidemiological model forecasts, particularly at start as not much history to match evolution.**

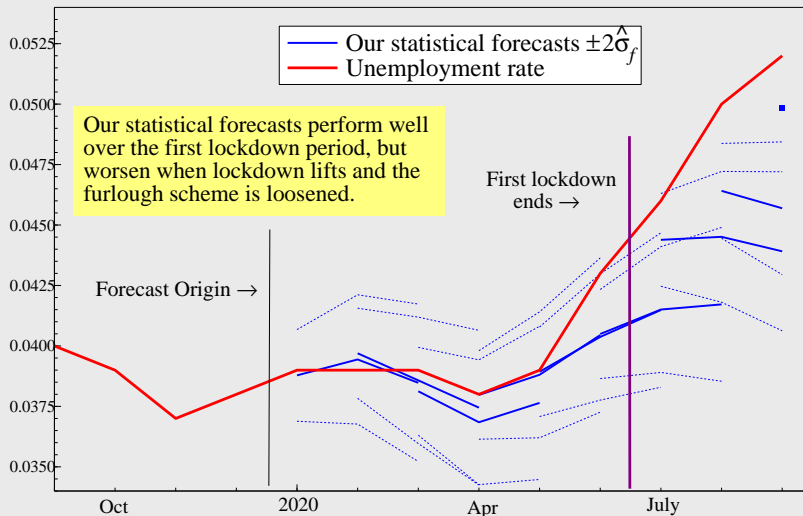
# 3 month ahead forecasts of UK unemployment in 2020



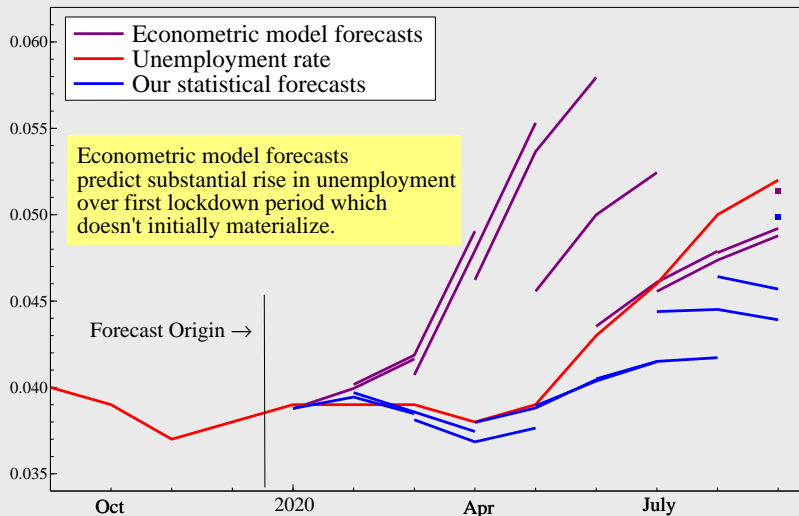
# 3 month ahead forecasts of UK unemployment in 2020



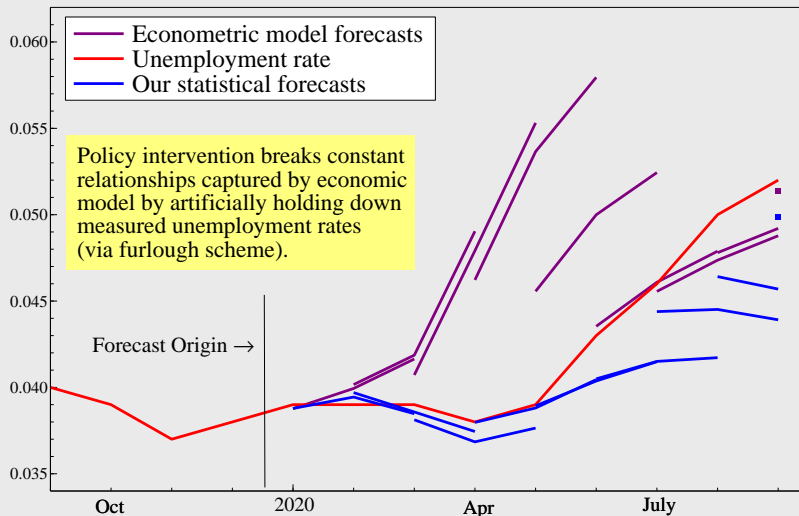
# 3 month ahead forecasts of UK unemployment in 2020



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# 3 month ahead forecasts of UK unemployment in 2020



## View forecasts from economic model as a useful counterfactual.

- Three month period from April to June 2020 – 1.34m people unemployed in UK.
- In April 2020, econometric model predicted 1.55m people unemployed for the same period.
- Our statistical forecasting device predicted 1.32m people unemployed.

**Interpreting this difference as a scenario, whereby the level of unemployment would have been 225,000 higher had furlough and other related policies not been implemented, suggests economic response was fundamental to holding unemployment down in first wave of pandemic.**



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**Forecasting under spotlight during pandemic.**

**But data is messy:** need methods that can handle non-stationary data subject to breaks, revisions and changes in policy.