

The impact of COVID-19 school disruption on learning outcomes: the 2001 Foot and Mouth Disease experience gives reason for optimism



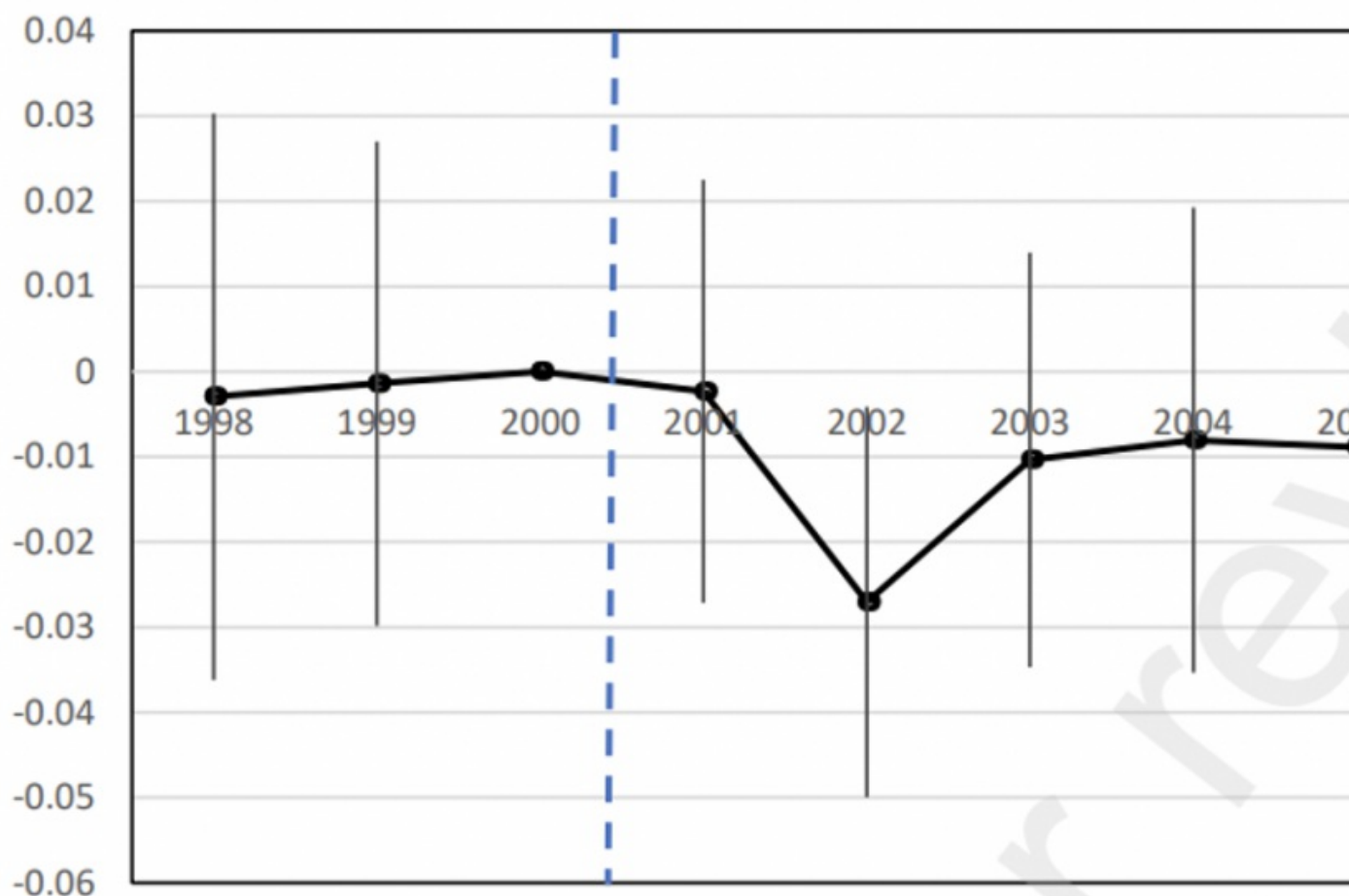
*The COVID-19 crisis has led to disruption to schooling across the world. Though it is recognised that pupils are suffering immediate learning loss, there exists a lack of understanding as to how this disruption might affect longer-term educational outcomes. **William Cook** considers this question by examining the effect of school disruption in England as a result of restrictions put in place to manage the Foot and Mouth Disease epidemic in 2001. He finds that primary schools that had been significantly disrupted by the measures exhibited achievement falls in the year immediately after the outbreak, driven by sizeable falls in maths performance in particular. The negative effects weaken in subsequent years, suggesting that the effects of school disruption may fade out as cohorts progress through schooling.*

The large-scale disruption to schooling caused by the COVID-19 pandemic has been one of the defining features of the crisis around the world, with fears that it could ‘scar’ future generations’ long-term outcomes. Though the scale of the disruption is unprecedented in recent times, 20 years ago rural areas in the UK were facing a crisis caused by a contagious virus that also disrupted schooling.

Back in the spring and summer of 2001, the UK government took a series of measures to contain the spread of Foot and Mouth Disease (FMD), a viral disease of little consequence to humans but a threat to cattle and other livestock. Measures included a mass cull of potentially infected animals and movement restrictions on people living in affected areas. As a result of these measures, rural communities suffered loss of income, psychological distress, and general disruption to normal life. School absence in affected communities rose significantly above average.

In a [recent paper](#), I investigate whether this disruption had any detectable effect on age 11 primary school test scores. Using a difference in differences design to control for potentially confounding factors, I compare schools that were significantly affected by the FMD crisis against those that were not. The results give some indication as to what the longer-term effects of the COVID-19 pandemic might be on education outcomes.

Figure 1: Difference between schools affected by FMD vs control, in proportion reaching the expected level across English, Maths, and Science at age 11.



There is tentative evidence from the study that the disruption caused by the FMD crisis persisted for a number of years after the crisis (see fig. 1). Such a result would imply that policy action is required now in order to avoid this sort of permanent reduction in human capital for those affected cohorts.

However, it is also noteworthy that the main effective disruption is observed in the year immediately after the crisis occurred (2002) and that possible effects beyond this (i.e. cohorts taking their end of primary school test some years after the crisis) appear to be quite small. This may give reasons for optimism as to whether the COVID-19 school disruption will have long term scarring effects, and there is growing [evidence](#) that so-called 'learning loss' may [not be as great](#) as feared. It is worth, however, reiterating that the disruption caused by the FMD crisis was much smaller in scale than the scale of disruption caused by COVID-19.

My research on the FMD crisis also shows on which subject the impact of school disruption was greatest: maths. Correspondingly, [early indications](#) of the effect the COVID-19 pandemic also [suggest](#) that maths appears to be [bearing the brunt](#) of the school disruption. Why might this be? It may have something to do with the idea that, more so than other subjects, maths has lots of interdependencies of knowledge, i.e. that learning one technique within mathematics is a prerequisite for learning subsequent skills and knowledge. A key policy implication therefore is that COVID-19 catch-up efforts should be directed towards covering missed maths content. Moreover, this research demonstrates that policy responses can learn from the past, even when responding to rare events like COVID-19.

About the Author



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