CENTRE FOR MACROECONOMICS

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Shake me the money!

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Focusing on the 'Aquilano' earthquake that hit the Italian region of 'Abruzzo' in 2009, in this paper we estimate the output effect generated by the event, as a result of two combined shocks, the negative supply shock due to the quake, and the positive demand shock driven by reconstruction grants to the region. Concerns over containing or reducing the potential negative effects on economic activity generated by earthquakes have been an important driver of policy and academic debates. However, despite earthquakes are large idiosyncratic shocks for affected regions, little is known of their impact on local economies. Furthermore, because of the nature of such natural events (earthquakes are rare and counterfactuals are often entirely absent) there remains uncertainty over the effectiveness of allocated public grants for assistance and reconstruction.

The correct identification of the aforementioned contemporaneous shocks is obtained relying respectively on: (i) a quantified measure of damages reported by the 75,424 buildings classified after the quake, and (ii) the specific characteristics of the institutional arrangement of public grants providing insurance to the municipalities affected by the event. Regarding the second factor, our strategy relies on a sharp discontinuity generated by a law by decree enacted by the central government few days after the event. Despite the earthquake generated damages in 97 municipalities, only 57 qualified for grants, reporting sufficiently extended damages. Using difference-in-differences analysis we compare economic activity behavior across ex ante identical neighbor municipalities that only differ ex post according to the amount of grants received.

In our findings, the direct effect of the earthquake on output is unambiguously negative. Our analysis shows that, on impact, the output loss from the quake averages 3.7 percentage points. Against the output effects of the negative supply shock, we document positive multiplicative effects of reconstruction grants. The estimated 'grants multiplier' is bounded between 0.14 and 0.36 according to the model. Multiplying these elasticities by the magnitude of the fiscal shock, our results suggest that public grants compensate the output fall (which is instead suffered by the control group) generated by the quake. Therefore, although grants multipliers remain well below

unity in all models, our results suggest that following the event reconstruction grants provide public insurance. Output in uninsured regions contracts while it expands, although marginally, in qualified municipalities. Finally, although our analysis shows that reconstruction grants effectively provide public insurance following the event preventing output from falling below trend, the marginal cost of this insurance scheme is estimated to be high raising the need of future research on the efficiency of public funds management.