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Date

Le 03 December 2019 De 12:30 à 14:00

Location

Pôle Tertiaire - Site La Rotonde - 26 avenue Léon Blum - 63000 Clermont-Ferrand

Room 210

[A Test of DMPS and VIIRS Night Lights Data for Estimating GDP and Spatial Inequality for Rural and Urban Areas](#)

with Susan Olivia and Geua Boe-Gibson

ABSTRACT

Night lights, as detected by satellites, are increasingly used by economists, especially to proxy for economic activity in poor countries. Widely used data from the Defense Meteorological Satellite Program (DMSP) have several flaws; blurring, top-coding, lack of calibration, and variation in sensor amplification that impairs comparability over time and space. These flaws are not present in newer data from the Visible Infrared Imaging Radiometer Suite (VIIRS) that is widely used in other disciplines. Economists have been slow to switch to these better VIIRS data, perhaps because flaws in DMSP are rarely emphasized. We show the relationship between night lights and Indonesian GDP at the second sub-national level for 497 spatial units. The DMSP data are not a suitable proxy for GDP outside of cities. Within the urban sector, the lights-GDP relationship is twice as noisy using DMSP as using VIIRS. Spatial inequality is considerably understated by the DMSP data. A Pareto adjustment to correct for top-coding in DMSP data has a modest effect but still understates spatial inequality and misses much of the intra-city heterogeneity in the brightness of lights for Jakarta.

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