

# Research sheds light on impact of post-disaster insurance payments

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The evidence for that was obvious when the lights of the city were viewed from space after the Canterbury earthquakes, says disaster economist Cuong Nguyen who graduates this week with a Ph.D. in Economics.

As part of his doctorate, Cuong studied the impact of insurance on the local economy following the destructive Canterbury earthquakes of 2010-2011.

Using monthly satellite images of Christchurch's lights from the United States Air Force's Defense Meteorological Satellite Program and the National Oceanic and Atmospheric Administration's Suomi-NPP environmental satellite, he constructed maps of the change in the city's night [light](#) levels for each quarter from 2012 to 2016.

That change in [light intensity](#) was a reflection of the change in the [economic growth rate](#), once insurance payments began to flow to affected residents and businesses.

"My first direct experience of earthquakes was the Kaikoura earthquake in November 2016. This motivated me to study the effects of earthquakes on a community and how to enhance resilience towards disaster," says Cuong.

"Given the availability of data, I chose the destructive Canterbury [earthquake](#) sequence for my [case study](#). I expected insurance payments to homeowners would stimulate the city's recovery.

"More than 95 percent of residential housing units were covered by insurance and almost all incurred some damage. However, insurance payments were staggered over five years, enabling us to identify their local impact on recovery."

Cuong's supervisor, Chair in the Economics of Disasters at Wellington School of Business and Government Professor Ilan Noy, suggested using remote sensing.

"I tried using night-time light imageries to create an indicator for [economic activity](#), and it worked," Cuong says.

Night-time light is a good indicator of economic activity and [human development](#) because most consumption and household activities require illumination in the evening, he says.

"When household income increases, its light usage also increases. So night-time luminosity can capture the process of recovery and showed insurance payments contributed significantly to the process of local economic recovery after the earthquakes."

Cuong found cash settlement of claims was no more effective than insurance-managed repairs in generating local recovery.

"Notably, the delayed payments were less effective in assisting recovery. This suggests an important role for the regulator in making sure insurance payments are made promptly after disastrous events."

Cuong's work is due to appear soon in the *Journal of Economic Geography*.

Provided by Victoria University of Wellington

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