

Earthquakes caused by natural gas extraction generate house price decreases

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Earthquakes in the northern parts of the Netherlands generate notable house price decreases. In a new study, economists Hans Koster and Jos van Ommeren from VU University Amsterdam, the Netherlands, have analysed the negative economic effects for homeowners of earthquakes induced by gas extraction. Earthquakes with a magnitude above 2.2 are shown to generate house price decreases of about USD 2750.

It is well known nowadays that the production of natural gas, using fracking or conventional gas extraction methods, imposes a substantial number of negative effects on the surroundings, due to noise and air pollution, a reduction in aesthetic appeal of the environment and ground water contamination. However, [negative effects](#) on house prices due to earthquakes had not been established before. These earthquakes occur because of soil subsidence, which is important, because these earthquakes may not occur immediately after gas extraction takes place.

About a quarter of European natural gas reserves can be found in the north of the Netherlands. The occurrence of earthquakes started to occur in 1995, several decades after the first extraction in the 1960s, but has been growing exponentially over the last 20 years.

In the Netherlands, homeowners are fully compensated for earthquake damage to their residential buildings by the [gas extraction](#) company, which is a regulated monopolist. Despite this compensation, [house price](#) decreases have been shown. The average decrease induced by an [earthquake](#) with a magnitude above 2.2 is about 1.2%, approximately

EUR 2500 (USD 2750) per property. The house price reduction in the whole area due to these man-made earthquakes is about EUR 150 million (USD 165 million) or EUR 500 (USD 550) per household.

More information: The results of the study are published in a Tinbergen Institute Discussion Paper 'Natural Gas Extraction, Earthquakes and House Prices':

www.tinbergen.nl/discussionpaper/?paper=2462

Provided by VU University Amsterdam

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