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[Abstract Title]

The Impact of Climate Change and Drought Persistence on Farmland Values in New Zealand

[Abstract]

This project aims to obtain a quantitative understanding of the potential impacts of climate change on New Zealand's agriculture, especially through the impacts of drought events on farmland values. The objective is to explore the impact of climate change on agricultural land prices under different land uses in New Zealand over a study period of 1993-2018. The specific objectives are to (1) to measure the day-to-day persistence of drought events using autoregressive (AR) model;(2) to quantify the impacts of climate change and drought persistence on farmland values; and (3) to calculate the future impacts of climate change on farmland values. We implement the Ricardian approach of land climate-pricing using QVNZ and projected climate scenarios. We explore the relationship between climate variables and farmland values while controlling for unobservable heterogeneity using the Spatial First Difference method. Preliminary results show the heterogeneity in which rural land values are affected by climate depending on the land use category. The rural land values decrease with the persistence of summer temperature and soil moisture deficit. This knowledge allows New Zealand to make better target drought adaption efforts and understand which agricultural sub-sectors and areas are the most at risk from future climate change.

[Keywords]

Spatial First Difference; climate change; drought persistence; agriculture