

Leon Stirk-Wang

+64 21 034 2105 | www.leonstirkwang.com | leon@stirkwang.com | [Google Scholar](#) | [ORCID](#) | github.com/leonstirk

PROFESSIONAL SUMMARY

Quantitative economist with expertise in econometric theory and causal inference. PhD research developed general tools for estimating treatment effects in quasi-experimental settings, with applications in property markets, climate risk, and spatial analysis. Technically fluent in R and Python, with experience in applied microeconomics, spatial data, and statistical modelling. Research interests include urban land markets, infrastructure investment, and regulatory evaluation. Strong background in independent research, software development, and policy-relevant modelling.

TECHNICAL SKILLS

Programming languages: R, Python, SQL, JavaScript, Unix shell.

Data analysis tools: Stata, SPSS, EViews, Keras/TensorFlow, ArcGIS, QGIS.

Other Software: LaTeX, AWS cloud services, MS Office.

EDUCATION

PhD. Economics | *University of Otago*

Dec 2018 - Mar 2024

B.Com. with Honours (First class) | *University of Otago*

Feb 2016 - Dec 2016

B.Com. (Economics and Finance) | *University of Otago*

Feb 2013 - Nov 2015

RESEARCH PROJECTS/PAPERS

Testable counterfactual equivalence in two-way fixed-effect designs | [Thesis chapter](#)

2024

- Proposes an estimator to recover treatment effects in TWFE models with unobserved, structured confounding. Constructs a latent adjustment variable by searching for groupings that satisfy graph-implied conditional independencies. Implemented via a genetic algorithm, the method reduces bias in simulations and serves as both a correction and diagnostic tool in quasi-experimental settings.
- Methodology operationalised in an R package ([gespag](#))

Identification issues in estimating flood risk in South Dunedin | [Thesis chapter](#)

2024

- Applies latent variable treatment effect estimator developed in earlier chapter to identify changes in flood risk premiums in South Dunedin after a flooding event. Compares latent variable estimator with several conventional specifications.

Hazard risk updating in post-quake Christchurch | [Thesis Chapter](#)

2024

- Applies latent variable treatment effect estimator to Christchurch property data to estimate changes to market natural hazard risk premiums post-earthquake. Explores diagnostic applications of the latent variable method for model identification.

Price recovery after the flood: risk to residential property values from climate change-related flooding | [AJARE](#)

2022

- Estimates the effect of flood exposure on residential property values under climate change scenarios. Part of a Marsden-funded project on sea-level rise and asset stranding.
- Commended for “Innovative Methods” at GRASFI 2019.

Determinants of Suburb Price Appreciation: A Spatio-Temporal Study of Auckland | *Honours thesis*

2016

- Examines the role of demographic predictors and lagged local price movements in housing market appreciation across Auckland suburbs.

EMPLOYMENT

Research assistant | *University of Otago*

Jul 2019 – Apr 2022

- Contributed to Nguyen et al. 2022 described above.
- Developed R packages ([HeRDS](#), [econFM](#)) for novel geospatial analysis methods.
- Mentored masters students related to natural hazard risk and disaster recovery.

Tutor | *University of Otago*

Jul 2015 – Nov 2023

- Taught microeconomics, macroeconomics, statistics, and international trade.

Founder/Director | *Ascroft Property Management*

Nov 2016 – Jul 2022

- Founded and operated a small property management company.
- Oversaw leasing, maintenance, and regulatory compliance.
- Developed expertise in residential tenancy law and operational systems.

Founder/Director | *Illuminate tutoring*

Jul 2014 – Nov 2016

- Built a tutoring business covering subjects in commerce, law, and health sciences.
- Managed branding, advertising, and platform development in JS and HTML.
- Designed online booking and payment infrastructure using AWS and Stripe.

Event manager/Supervisor | *Dawsons Catering*

Apr 2009 – Feb 2012

- Supervised front-of-house operations for events for a range of high-profile individuals and corporate clients.
- Responsible for recruitment and training of FOH staff and managing rosters for a pool of >100 staff.

REFERENCES

Paul Thorsnes paul.thorsnes@gmail.com

Murat Genç murat.genc@otago.ac.nz

Warren McNoe warren.mcnoe@gmail.com