Do Tertiary Education Studies Still Pay Off in New Zealand?

Gender and Sectoral Dynamics

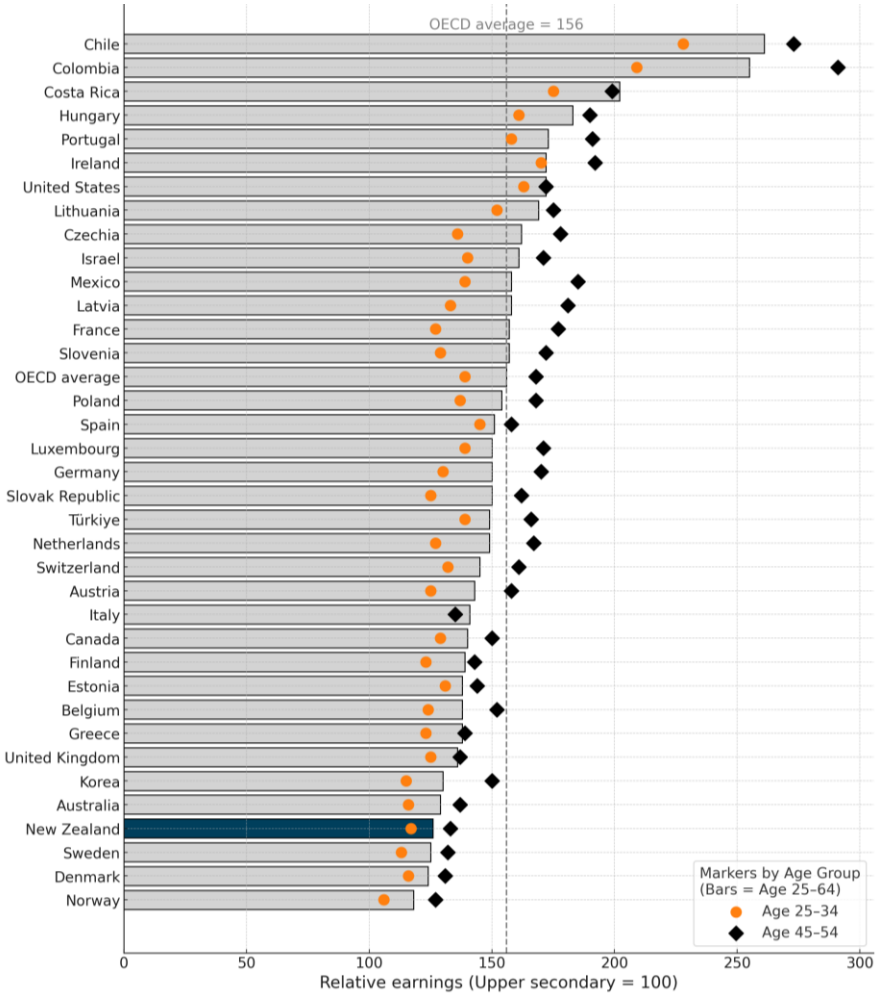
Cristóbal Castro Barrientos

PhD Student at NZ Policy Research Institute at AUT

NZAE conference 2025

International Comparison of Tertiary Education Premiums

Figure 1. Relative earnings of tertiary-educated workers compared to those with upper secondary education in OECD countries (2022), disaggregated by age group (25–34, 45–54, and 25–64)



- New Zealand **ranks low** in terms of premiums to tertiary education among OECD countries (OECD, 2024).

- Why is this the case? Several structural factors explain it (Zuccollo et al., 2013)
  - A **high minimum wage** reduces the wage gap between low- and high-qualified workers.
  - **Progressive taxation** further compresses income differences.
  - There is a correlation between the **Gini** coefficient and the returns to higher education.

- Despite low average returns, local evidence shows a **positive wage effect from higher education** in NZ (Zuccollo et al., 2013; Psacharopoulos & Patrinos, 2018; Hyslop et al., 2020).

Source: Author's elaboration based on OECD (2024), Education at a Glance 2024, Table A4.1.

Motivation and Contribution

- **Central Question:** Does tertiary education still pay off in New Zealand?
- **Motivation – A Challenging Context**
  1. **Tertiary Participation is declining:** New Zealand recently expanded access to tertiary education and now sits around the OECD average, but still behind several European countries and Australia (World Bank, 2025).
  2. **Minimum Wage is still High**: New Zealand continues to rank among OECD countries with a relatively high minimum wage (OECD, 2022).
  3. **A significant Brain Drain:** In 2024, a record ~78.000 workers (ages 25–64) left New Zealand, surpassing pre-pandemic levels (~50,000/year) (Stats NZ, 2025).
  4. **AI is disrupting the labour market:** There are workers whose skills are complementary to AI, and others whose tasks are more likely to be substituted by it (Lorenz, Perset, and Berryhill , 2023).
  5. **HE Policies Changes:** In 2025, fee-free tuition will move from the first to the final year (Tertiary Education Commission, 2024), which could affect enrolment patterns.
  6. **High participation of women:** They represent 58% of total enrolment, and 65% at the bachelor's level. HE policies affect women more than men (Education Counts data, 2024).

- **Contribution of the Study**
  1. **Long-Term perspective:** First post-pandemic study to span 2009–2024, capturing structural shocks and labour market transformations.
  2. **Innovative Methods:** Uses of quantile regression to go beyond averages, revealing inequality dynamics across the wage distribution.
  3. **Granular Analysis:** It shows returns by qualification (certificate, bachelor, postgraduate), sector, gender, and age.

Methodology: Data and Model Specifications

- Data Source: Household Labour Force Survey (HLFS) through the Integrated Data Infrastructure (IDI).
- Sample: Full-time and part-time employees (excluding self-employed individuals and employers), aged 25-64, with wage income. Secondary education as reference group (low than them are excluded

- 2009-2024 Models:

$$\log(wage_i) = \beta_0 + \beta_1(Bachelor + Postgraduate)_i + \mathbf{X}_i'\gamma + \varepsilon_i$$

$$Q_\tau(\log(wage_i)) = \beta_{0\tau} + \beta_{1\tau}(Bachelor + Postgraduate)_i + \mathbf{X}_i'\gamma_\tau + \varepsilon_{i\tau}$$

- 2016-2024 Model:

$$\log(wage_i) = \beta_0 + \beta_1 \cdot Certificate_i + \beta_2 \cdot Bachelor_i + \beta_3 \cdot Postgraduate_i + \mathbf{X}_i'\gamma + \varepsilon_i$$

- Control Variables: Age (and age^2), gender, region, ethnicity, employment status, parental status, country of birth, year fixed effects.
- Key Limitations:
  - Observational data (associations, not causality).
  - Potential selection bias (due to labour market selection).
  - Pre-2016 data limitations may affect comparability: *The HLFS was redesigned in 2016, introducing changes that limit comparability with earlier data (Stats NZ, 2016)*

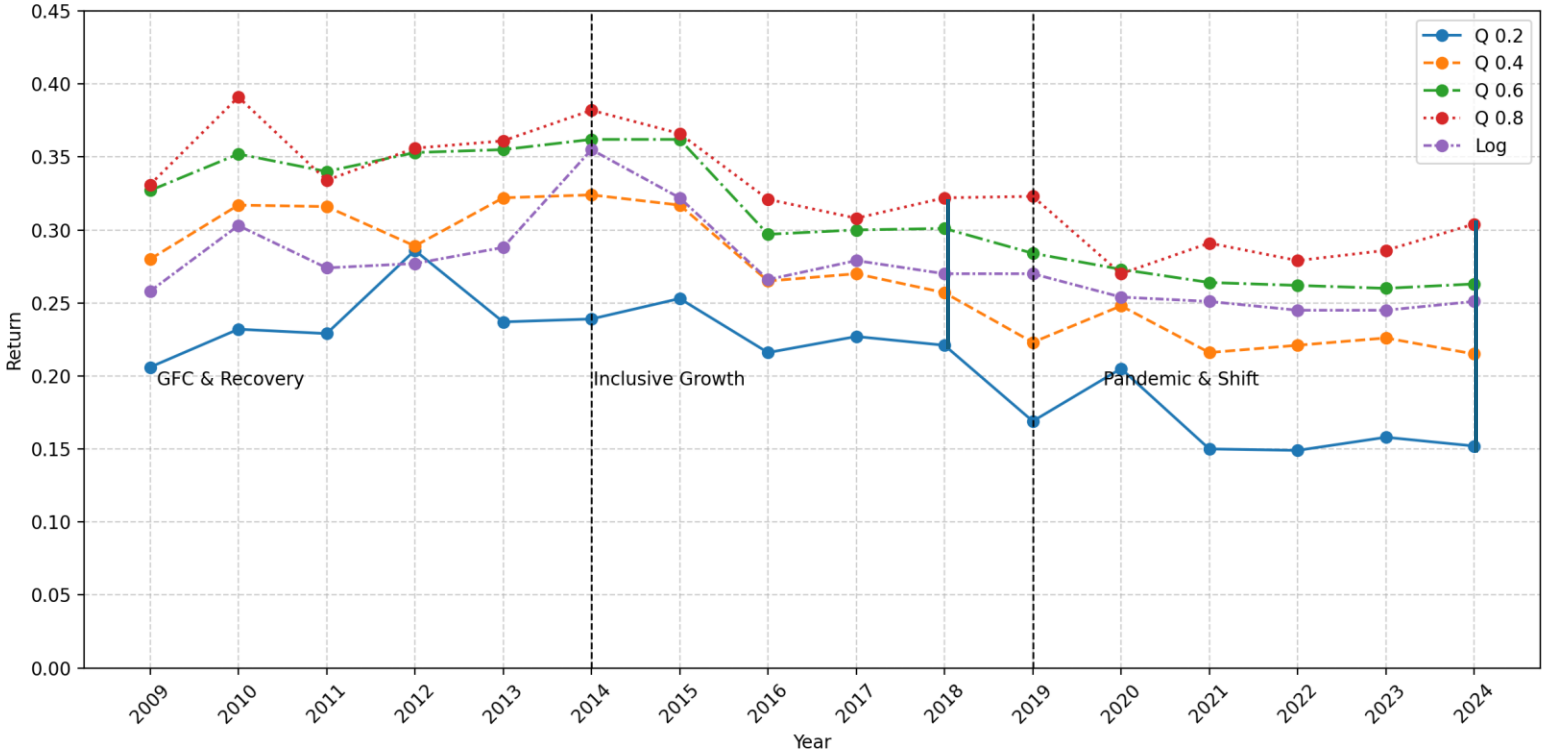
(i) Results from the 2009–2024 period

$$\log(wage_i) = \beta_0 + \beta_1(Bachelor + Postgraduate)_i + \mathbf{X}_i'\gamma + \varepsilon_i$$

$$Q_\tau(\log(wage_i)) = \beta_{0\tau} + \beta_{1\tau}(Bachelor + Postgraduate)_i + \mathbf{X}_i'\gamma_\tau + \varepsilon_{i\tau}$$

Trends in Premiums to Higher Education (2009–2024)

Figure 4. Wage Premiums to Higher Education (Bachelor +Postgraduate) vs Secondary by Model, 2009–2024

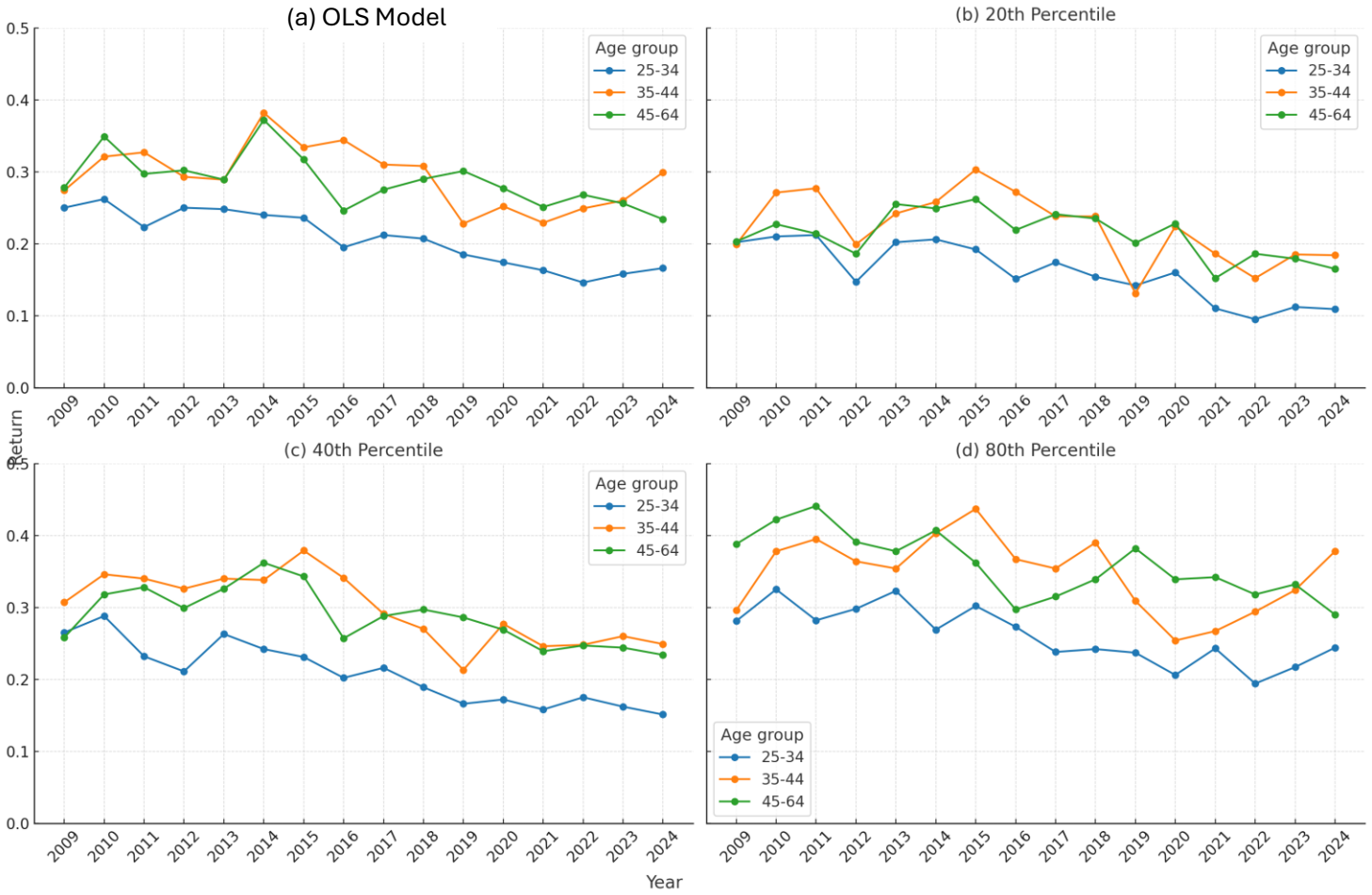


Source: Author's elaboration based on HLFS estimations

- **Post-Global Financial Crisis (2009–2014): Premiums increased**, even though access to higher education was expanding.
- **Inclusive Growth Period (2015–2019):** During this period, premiums began to **flatten or decline**.
- **Post-Pandemic (2020–2024): Premiums became more volatile**.
  - The distance between percentiles began to widen
  - Reflecting increased dispersion in returns.
- Drop after 2015, partly due to survey redesign (2016)

Wage Premiums by Age Group

Figure 4. Wage Returns to Tertiary Education (Bachelor +Postgraduate) vs Secondary by Model & Age Group, 2009–2024

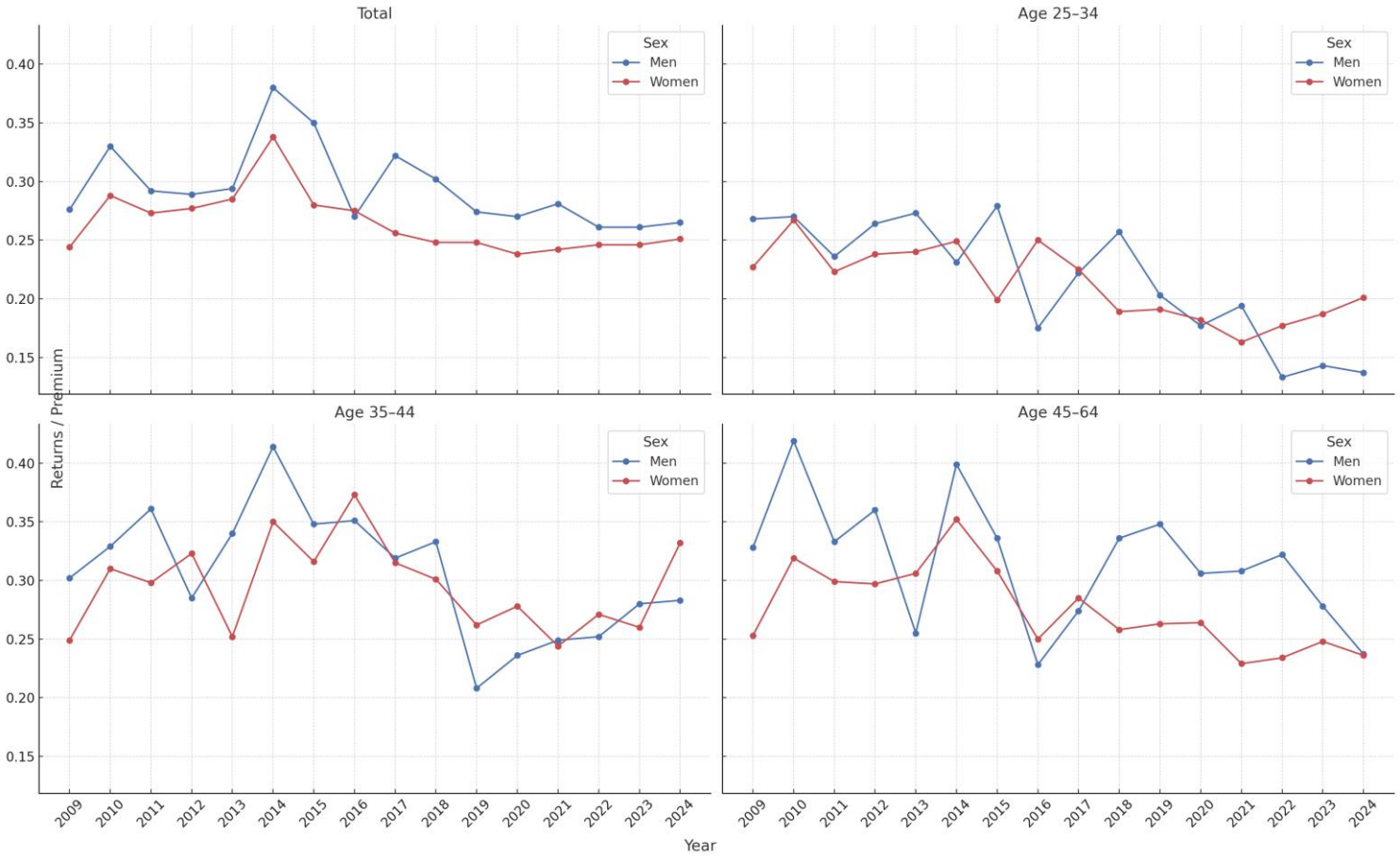


Source: Author's elaboration based on HLFS estimations

- **Young workers (25–34**) show **declining** and lower returns.
  - They have to face more competition than the previous generation.
- **Mid-career workers (35–44)** show **post-COVID recovery**, especially at the top of the wage distribution
  - Likely benefit from experience + digital skills
- **Older workers (45–64) show a decline**
  - May reflect skill obsolescence or difficulty adapting to change

Wage Premiums by Sex and Age

Figure 5. Wage Premiums to Tertiary Education (Bachelor +Postgraduate) vs Secondary by Sex & Age Group (OLS Model), 2009–2024

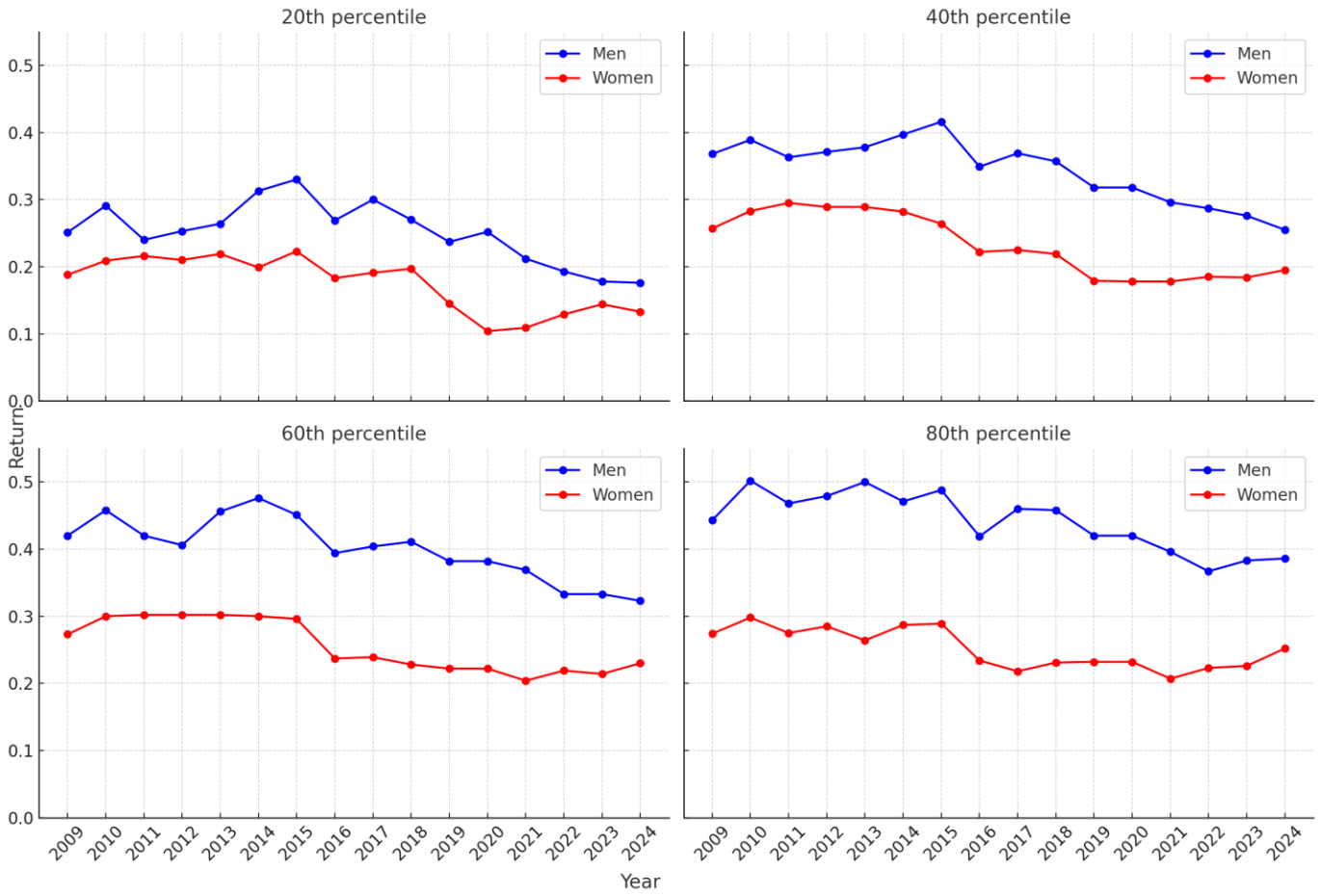


- **Men and women** now show **similar premiums overall**.
- **Among younger workers**, women even have **slightly higher premiums**.
- **Strong post-COVID gains for both genders (35–44 age group)**
- **Older men's** premiums have been **reduced since 2016**

Source: Author's elaboration based on HLFS estimations

Quantile regressions by Sex (2009–2024)

Figure 6. Wage Premiums to Tertiary Education (Bachelor +Postgraduate) vs Secondary by Sex (Quantile Models), 2009–2024



Source: Author's elaboration based on HLFS estimations

- Wage premiums by sex are now similar at the 20th and 40th percentiles.
- **At the 80th percentile, men continue having significantly higher premiums.**
- **Convergence remains slow.**
- This reflects a persistent "*glass ceiling*" (Pacheco et al., 2017)
  - Underrepresentation in top roles

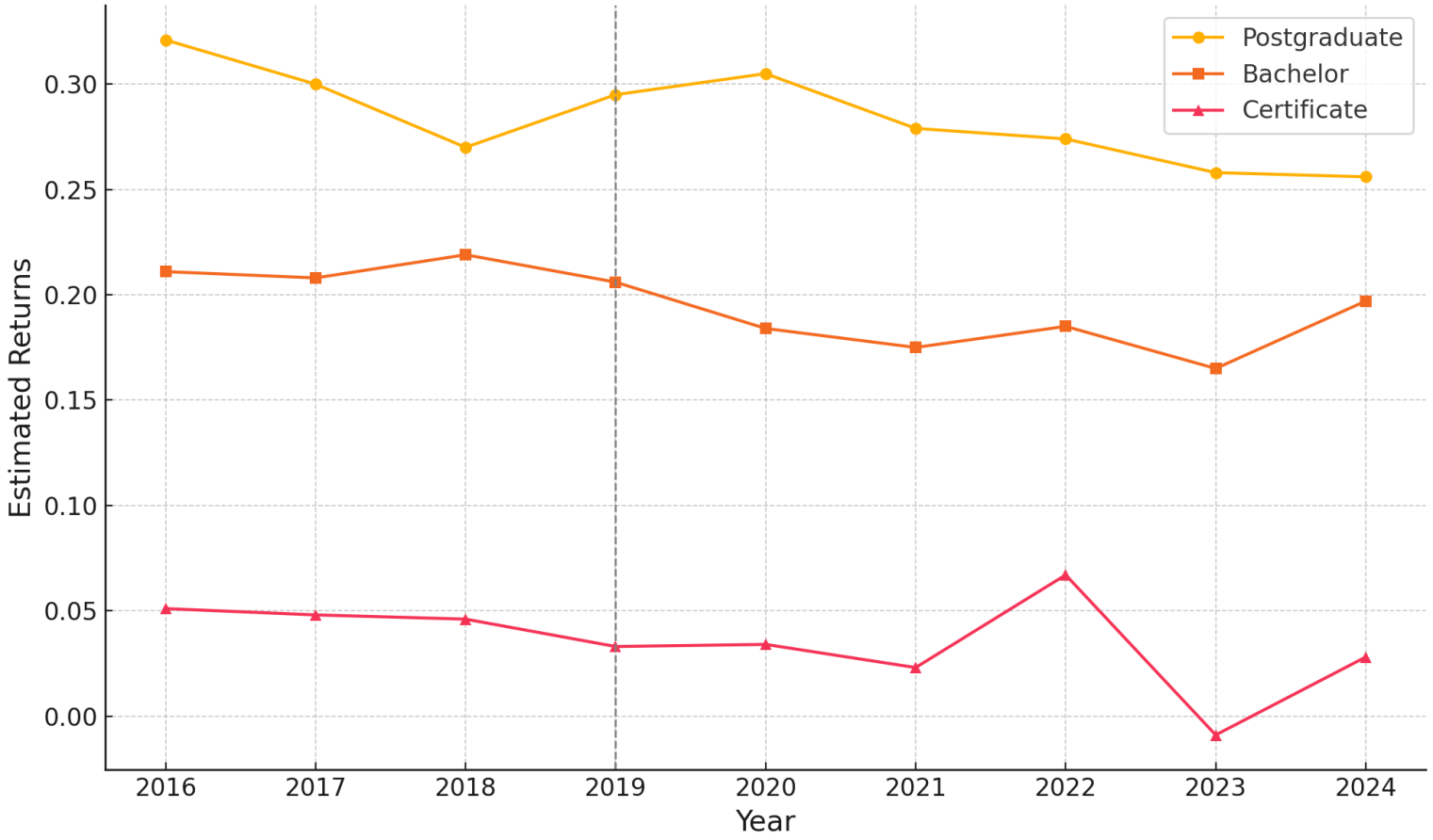
(ii) Results from 2016–2024 period

$$\log(wage_i) = \beta_0 + \beta_1 \cdot Certificate_i + \beta_2 \cdot Bachelor_i + \beta_3 \cdot Postgraduate_i + \mathbf{X}_i'\gamma + \varepsilon_i$$

Preliminary

Premiums by Qualification Level (2016–2024)

Figure 7. Wage Premiums to Tertiary Education by Qualification Level, 2016–2024

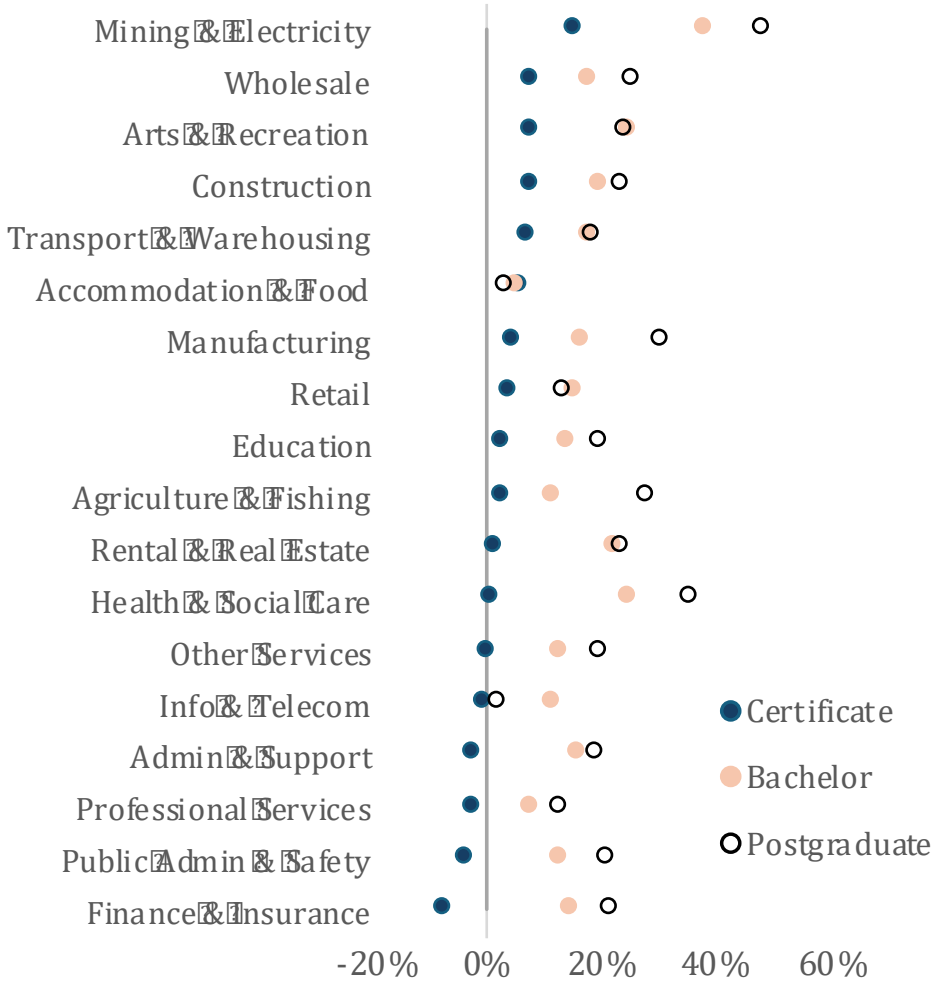


- **Certificate-level premiums are close to zero** (or negative).
- **Bachelor's and postgraduate premiums are mostly positive** (and maybe there is a "compensation dynamic")
- **There has been a slight decline in estimated premiums.**

Source: Author's elaboration based on HLFS estimations

Premiums by Sector and Qualification (2024)

Figure 8. Wage Premiums to Tertiary Education by Economic Sector and Qualification (2024)



- Five sectors consistently appear in the top 9 for all education levels:

Arts & Recreation, Construction, Manufacturing, Mining & Electricity, and Wholesale Trade.

- Four sectors consistently fall in the bottom 9 for all levels:

Information Media & Telecommunications, Other Services, Public Administration & Safety, and Professional, Scientific & Technical Services.

- Special mention to Health and Education because they are still having high premiums to HE

Source: Author's elaboration based on HLFS estimations

Conclusions

Group / Sector	HE Still Pays Off?
Young workers – Low percentiles	❌
Young men	❌
Certificate level – Most cases	❌
Bachelor – Accommodation & Food Services	❌
Postgraduate – Information & Communication	❌
Health sector (Bachelor & Postgraduate)	✅
Bachelor – Arts, Construction, Mining, Wholesale	✅
Mid-career women with postgraduate	✅

- Tertiary education in New Zealand still pays off—but now not for everyone.
- Premiums have become more dispersed across the population.
  - This means that qualification level and sector of employment now matter more than ever.
- Persistent gender premium gaps remain at the top
- Strategic choices are essential, particularly for students from low-income backgrounds.

Thanks!

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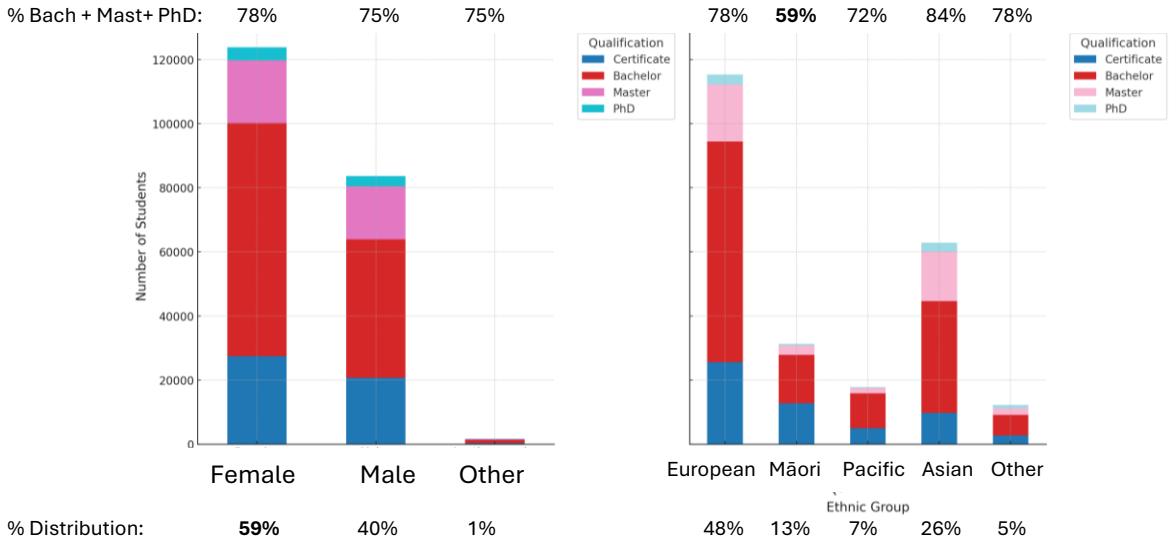
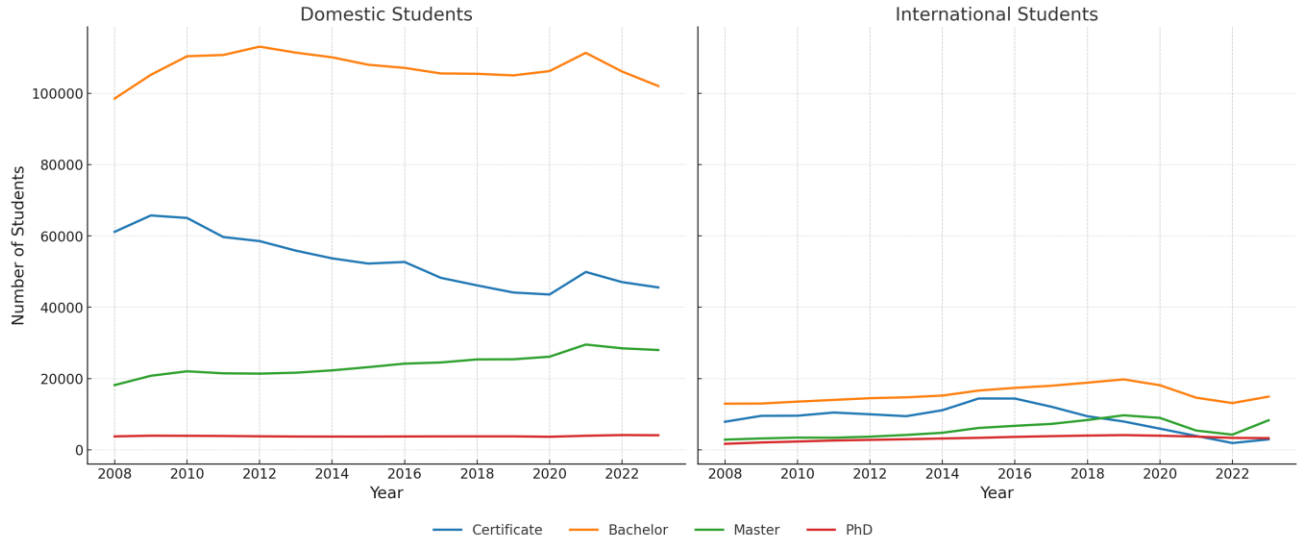
The New Zealand Tertiary Education System

Figure 2. Composition of Tertiary Enrolments by Gender and Ethnicity, by Qualification Level (FTE, 2023)



Source: Author's elaboration based on Education Counts data.

Figure 3. Full-time equivalent (FTE) enrolment in tertiary education by qualification level and student type, 2008–2023



Grouped by NZQF levels: Certificate (L4–6), Bachelor (L7), Master (L8-9), PhD (L10).

Source: Author's elaboration based on Education Counts data.

- Women represent the majority of students across all levels, especially at the bachelor's level and above.
- This means tertiary education policy disproportionately affects women (59%).
- European students are more likely to study at bachelor's, master 's, or PhD levels than Māori (78% vs 59%)

- Vocational education enrolments have steadily declined.
- PhD enrolments have remained relatively stable.