NZIER INSIGHT



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Diversity in economics in Aotearoa New Zealand

In this Insight, we explore the current landscape of tertiary economics enrolment and diversity in Aotearoa New Zealand. Our analysis revealed an overall decline in university enrolment in economics over the past two decades, with diversity trends showing economics becoming increasingly maledominated. This trend is accompanied by an increase in students from areas with lower levels of deprivation (which tend to be higher income) opting to study economics. While there is a slight rise in the percentage of Māori amongst economics students, their representation, along with Pacific students, remains notably below their representation within the broader university student population.

Why does diversity in economics matter?

Diversity and inclusion have gained significant attention in recent years. Some aspects of diversity are straightforward; our society relies on a range of professional specialisations, from the engineers and designers shaping our urban landscapes to the healthcare professionals and teachers who keep our society functioning. For instance, a society composed solely of dentists might boast excellent oral health but would be lacking in other essential areas.

However, diversity extends beyond professional expertise. It may encompass differences such as sex, gender, ethnicity, socio-economic background, disability, neurodiversity and sexual orientation. In the workplace, diversity in these areas is believed to help enhance problem-solving and decision-making by introducing varied perspectives, experiences and skills (Andrevski et al. 2014; Jiang, Tao, and Santoro 2010; Cunningham 2011; Pichler et al. 2018).

While the benefits of diversity are tangible for business in the short term, they can be less apparent in the field of economics. The positive effects of diversity in economics often manifest over the long term, as the complexities of economic theory, systems and policies take time to adapt and incorporate

diverse perspectives, contributing to longterm success.

Why should policymakers care about diversity in economics?

At the core of economics lies the challenge of efficiently allocating limited resources to meet our varied needs. Economics serves as our guide in navigating this complex task, providing frameworks to help us determine the most effective ways to address such challenges.

Consider government budgeting and policymaking — a topic that has received much attention in the most recent election. What are our priorities? How can we achieve them? What is our planning timeframe? How do we maximise the benefits? These are not easy questions, even for the most skilled policymakers. Harder still, policymaking requires careful consideration of the diverse social groups affected by government policies and the goal of achieving equitable wellbeing outcomes.

By involving a diverse group of economists, we can mitigate these challenges. Diversity amongst economists means the process of inquiry, problem-solving, and decision-making benefits from a broader range of perspectives as well as effective techniques. This diversity enhances our ability to navigate the intricacies



of economic optimisation, leading to more robust and inclusive outcomes (Dwyer 2018).

Diversity in economics has been decreasing internationally...

Research in the U.S. and Australia underscores the pressing need for increased diversity in economics. Numerous studies reveal the underrepresentation of women and ethnic minorities among economic professionals, academics, and students in the U.S. (Scott and Siegfried 2019; Bayer and Wilcox 2017; Bayer and Rouse 2016; Price 2009; Ginther and Kahn 2004). Australia experiences a similar trend, with a significant decline in high school economics enrolment over three decades, especially among females, leading to a substantial gender imbalance compared to the early 1990s (Dwyer 2022; 2018; 2017; Livermore and Major 2020)

...but little is known about diversity in enrolment in economics in New Zealand

In New Zealand, studies have focused on disparities in tertiary education more broadly, but little is known about diversity in the economics discipline. For example, research found that a student's socio-economic status, ethnicity, and school decile affect the likelihood of studying at the bachelor's level, with more pronounced effects for Māori and Pacific students (Engler 2010; Meehan, Pacheco, and Pushon 2017; Cao and Maloney 2018; Cao 2021).

In the labour market, obtaining a tertiary qualification levels the playing field in earnings for Māori and Pacific workers compared to their European counterparts (Mahoney (2014a; 2014b). Māori graduates with bachelor's degrees are 24 percentage points more likely to be employed compared to non-Māori students if they studied economics or econometrics.

While studies emphasise the need for diversity and the positive impact of tertiary education on labour market outcomes, there's a notable lack of evidence regarding the evolution of

diversity in New Zealand universities. New Zealand is undergoing significant changes in various dimensions of diversity. To enhance support for individuals studying economics at universities, it is crucial to understand the current state of diversity in this field and how it has evolved over the past decade.

Objectives and approach of this research

In this study, we explored diversity in economics in the New Zealand context. This required collecting and analysing relevant data on diversity in economics to identify the under-represented groups amongst economics students and disparities in returns from their economics education across dimensions of diversity. This will contribute to the ongoing discussions about the extent of diversity and inclusiveness in higher education, which should enable policymakers to make more informed decisions on ways to improve equity in accessing education in the field of economics.

We drew our data from Stats NZ's IDI

The suite of data in Stats NZ's Integrated Data Infrastructure (IDI) provides useful information for us to examine diversity across the economics discipline in New Zealand. It holds education data on enrolment in economics at universities. IDI data has been widely used for in-depth research on education, employment, income, health and wellbeing-related topics in New Zealand (Song 2022).

Data on university enrolment and enrolment in economics is publicly accessible through Education Counts, but it lacks information on the current state of enrolment across various dimensions that are of interest in this study. However, the IDI is a valuable tool for exploring a broader range of diversity-related aspects.

We linked education and other administrative datasets

In this study, we linked individual-level data on education with other administrative



datasets in the IDI to identify students enrolled at universities with a predominant field of study¹ in economics and econometrics.² We explore the changing diversity profile of economics students and graduates over time, examining how diversity has evolved among those studying the subject at universities. For simplicity, in this study, we will refer to economics and econometrics collectively as 'economics'.

We focused on the core dimensions of diversity

We primarily focus on diversity dimensions of sex, ethnicity and socio-economic status. We acknowledge that diversity extends beyond the metrics included in this paper. Some dimensions are not currently possible to identify in national datasets. Although we attempted to explore other dimensions like neurodiversity, sexual orientation and mental wellbeing,³ they are poorly described in the IDI datasets and cannot provide robust information; therefore, we excluded them from this study.

We investigated two key questions

The research questions we sought to address using IDI data include:

- How has enrolment in economics at New Zealand universities changed over the past two decades?
- How does enrolment in university economics differ across the dimensions of diversity?

The following sections delve into the outcomes of our study using IDI data, shedding light on how diversity in the discipline of economics has transformed across universities.

Ministry of Education defines "predominant field of study" as the discipline in which students have dedicated the majority of their academic pursuits. More information can be found here: https://www.educationcounts.govt.nz/publications/terti ary_education/occasional-papers/method-to-determinethe-predominant-fields-of-study-of-students-andgraduates-in-provider-based-tertiary-education

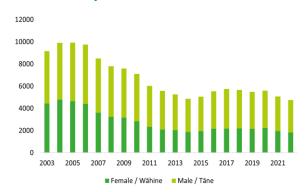
Enrolment in economics has steadily declined

Figure 1 illustrates the overall enrolment trend of male and female students whose predominant field of study is economics.

Over the past two decades, there has been a substantial decline in the number of individuals enrolling in economics at New Zealand universities. Enrolments in economics have decreased from approximately 10,000 in 2004 to around 4,800 in 2022. The most significant drop occurred between 2004 and 2014. However, recent years have shown relatively stable enrolment levels.

The decline in economics enrolment is evident among both male and female students, although the rate of this decrease is more pronounced for females.

Figure 1 Number of students enrolled in economics by sex



Source: NZIER, Stats NZ

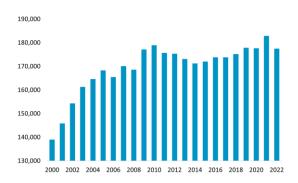
This decrease in economics enrolment at universities is puzzling, as it contrasts with the general upward trend of university enrolments over the past decades, as shown in Figure 2. Overall, enrolments for all universities increased by around 28 percent in

- Econometrics serves as a tool to quantify theoretical economic models, providing an empirical way to estimate to economic relationships.
- Although data on sexual orientation is available in the 2023 Census, this data is not yet incorporated in the IDI.



the past two decades, despite COVID-19 interruptions (Education Counts 2023).

Figure 2 Number of students enrolled in universities



Source: NZIER, Education Counts

The decline in economics enrolments presents a formidable challenge for the New Zealand government, which is already grappling with limited economic capability, primarily confined to a handful of core economic organisations. Deficiency in economic expertise threatens the quality of policy advice and operational efficiency (Stevens 2023). Declining enrolments are likely to further intensify the scarcity of economic capabilities within government entities.

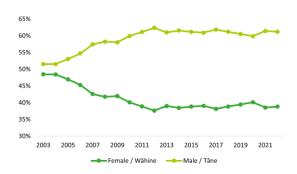
Economics enrolments show an increasing proportion of males

Beyond the decrease in the overall number of students pursuing economics, we also see an intriguing dynamic in the gender distribution of economics enrolments. Figure 3 illustrates the percentage of female and male university students enrolled in economics. Our findings indicate a decline in the percentage of female students over the past decades, while the percentage of male students has been on the rise.

The magnitude of this shift is particularly striking. In 2003, economics was studied by males and females in roughly equal numbers. However, the landscape has evolved significantly, with males now outnumbering

females, with a ratio of approximately two males to every female.

Figure 3 Percentage of female and male students enrolled in economics enrolments



Source: NZIER, Stats NZ

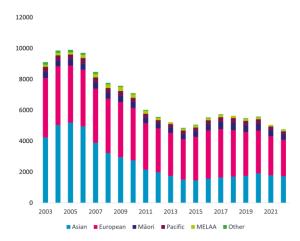
Ethnic dynamics in economics reveal a shift from Asian-majority to European, with increasing participation among Māori and Pacific students

New Zealand society has been experiencing a shift toward increased ethnic diversity, driven largely by immigration from Asia and the Pacific. However, this broader increase in diversity hasn't translated into university enrolments in economics.

Figure 4 illustrates the enrolment trends among students of various ethnicities studying economics in universities. Despite an overall decline in student numbers during this period, a more pronounced decrease is observed among Asian students. Notably, the number of Māori students enrolling in economics has stabilised, at an annual average of around 400–500 over the last two decades.



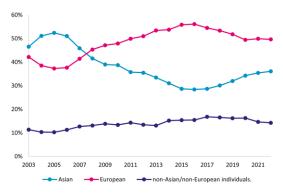
Figure 4 Number of students enrolled in economics by ethnicity



Source: NZIER, Stats NZ

Figure 5 shows the dynamics of ethnic representation in economics enrolments. Notably, Asian students used to make up most of the students studying economics in New Zealand universities, but their numbers have decreased in recent decades. Now, Europeans are the largest group, making up around 50 percent of economics enrolments.

Figure 5 Percentage enrolled in economics by different ethnicity



Source: NZIER, Stats NZ

In addition, we're also seeing a slow increase in the percentage of non-Asian, non-European universities, going from about 10 percent to around 15 percent. As shown in Figure 6, This

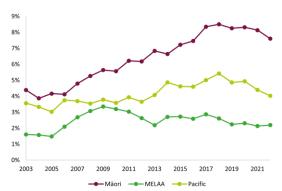
students studying economics at New Zealand

Middle Eastern/Latin American/African.

includes Māori students, increasing from around 4 percent in 2003–2004 to 7 to 8 percent more recently. Pacific student enrolment has varied between 3 and 5 percent, while MELAA⁴ students' enrolment has remained steady between 1 and 3 percent.

While there has been some improvement in the representation of Māori and Pacific students in economics, this remains notably below their overall representation among university students. In 2022, Māori students comprised around 13 percent of university enrolments, and Pacific students made up nine percent (Education Counts 2023).

Figure 6 Percentage enrolled in economics by non-Asian and non-**European ethnicities**



Source: NZIER, Stats NZ

It's also worth noting that while there is an increase in the percentage of non-European students studying economics, this positive trend is overshadowed by an overall decline in student enrolment in this discipline. Nearly all ethnicities are experiencing an absolute decline in economics enrolment, except for Māori students, whose enrolment remains steady.



Economics enrolments are seeing an increase in students in the least deprived areas

In terms of socio-economic status, it is generally recognised in the literature that students from relatively advantaged socio-economic backgrounds tend to participate more in tertiary education(Croll and Attwood 2013; Boneva and Rauh 2017; Meehan, Pacheco, and Pushon 2019). Therefore, in this study, our primary focus was to examine the trends in the socio-economic status of students enrolling in economics at New Zealand universities.

We used the New Zealand Index of
Deprivation⁵ (NZDep2018) as our metric for
measuring socio-economic status.
Represented in deciles, each NZDep decile
contains approximately 10 percent of areas in
New Zealand (Not 10 percent of population).
Decile 1 signifies areas with the least
deprivation (which tends to be higher
income), while Decile 10 represents the most
deprived areas (which tends to be lower
income). It is important to recognise that
NZDep2018 reflects the deprivation level of
the area where students reside, rather than
directly indicating the socio-economic
circumstances of their families.

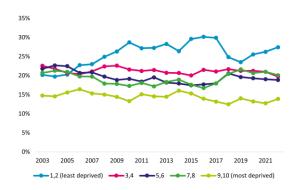
To better understand students' backgrounds before entering university, we used the locality in which they lived before becoming university students.

Figure 7 illustrates the percentage of students enrolled in economics across NZDep deciles.

Between 2003 and 2005, students studying economics were distributed relatively evenly across NZDep deciles 1–8. However, since 2006, there has been a noticeable shift. A larger percentage of students from less deprived areas are now enrolling in economics with an NZDep index of 1 or 2, while there's a slight decrease in the percentage of students

More information on NZDEP is available here: https://www.otago.ac.nz/wellington/departments/public health/research-groups-in-the-department-of-publicwith an NZDep index of 5 and above. In 2022, about 27 percent of economics students in universities came from NZDep 1 or 2, while around 14 percent were from NZDep 9 or 10.

Figure 7 Percentage enrolled in economics by NZDep2018



Source: NZIER, Stats NZ

What we found in New Zealand

Our IDI research has shown intriguing trends in university enrolment in economics over the past two decades. Notably, we observed:

- A decrease in the overall number of students studying economics.
- A low but increase in the percentage of economics students of Māori ethnicity.
- An increasing male-to-female ratio among economics students indicates economics is becoming more maledominated.
- An increasing proportion of economics students are from less deprived areas.

Why is enrolment in economics decreasing?

The contrast between the general trend of enrolment for universities and the decrease in enrolment in economics has recently been studied in New Zealand. A New Zealand study (Agnew 2015) surveyed the heads of

 $\frac{health/hirp/socioeconomic-deprivation-indexes-nzdep-and-nzidep-department-of-public-health}{}$



departments at New Zealand's universities to understand why there's been a decrease in students studying economics in New Zealand universities.

The survey results suggest that students may perceive economics as relatively abstract and less practically applicable to real-life problems. Additionally, the incorporation of mathematics in economics poses challenges for potential students, as mathematical skills are often essential for formulating equations, conducting statistical analyses, and comprehending complex economic concepts.

These concerns indicate the need to increase student interest in the subject, particularly in illustrating how economics can be applied to real-life problems and to enhance students' confidence in mathematics.

Promoting interest in economics

As economists, we often think about incentives; one way to incentivise students to be more engaged in economics is to show the tangible benefits of economics in practical settings and to forge a clear link between economics education and post-university employment opportunities. A perception of economics as a more practical and useful field may increase enrolment. This can involve incorporating video clips and newspaper articles in lectures that apply current events to economics and showcasing practical applications that demonstrate how economic theories and concepts can be applied to realworld issues. By exposing students to these tangible connections between their studies and potential career paths, lecturers can instil a greater sense of purpose and relevance in their economic education.

Another approach is increasing student's preparedness in mathematics. By international standards, New Zealand is underperforming in secondary mathematics education, and there is a clear downward trend over time.

A robust grasp of mathematics is crucial for boosting students' confidence and interest in tackling more mathematically intensive subjects, such as economics. Previous NZIER Insights (Hogan and Wills 2021) explored potential strategies to enhance maths learning in New Zealand, which may include initiatives to support teachers in gaining a deeper understanding and specialisation in their subject.

Why does the field of economics struggle to achieve diversity?

In terms of diversity, although New Zealandspecific research is lacking, international literature provides some insights into why economics is becoming more male-centric and why it struggles to attract ethnic minorities and students from diverse socio-economic backgrounds.

One explanation is that women are more responsive to grades compared to male students. They are both more likely to study economics if they receive good grades and less likely to study economics if they receive poor grades, compared with male students with similar academic records (Rask and Tiefenthaler 2008). This underscores the need for better support and encouragement for young women in early economics education.

In the context of socio-economic backgrounds, international research indicates that students from more disadvantaged backgrounds often lack sufficient exposure to quantitative and qualitative tools before university, creating a barrier to success in economics courses (Brown-Robertson, Ntembe, and Tawah 2015) and this may affect enrolment. Additionally, research also highlights the impact of perceptions on participation in economics, noting that students from more disadvantaged backgrounds are less likely to believe they can succeed in economics and report receiving less encouragement from their subject teachers (Livermore and Major 2021).



The lack of role models, which results from a low level of diversity over time, exacerbates the situation. Role models are important for students with diverse backgrounds in economics, as they inspire, provide diverse perspectives, and foster inclusivity and motivation. However, international evidence has shown that the academic and professional landscape in economics has made minimal progress in diversifying the economics profession in terms of gender and ethnicity over the last two decades, especially in universities in the US and UK (T.Mora 2021; Advani, Sen, and Warwick 2020).

In New Zealand, the gender composition in academia is notably skewed towards males in the field of economics, where approximately 80 percent of senior positions are occupied by males (Wesselbaum 2023). This significant imbalance in academic participation poses risks that may hinder the growth of diversity in New Zealand's economic enrolments.

Understanding the reasons behind the decreasing diversity in economics in New Zealand presents a challenge, given the limited available research on this specific topic. Further research is crucial to identify the factors contributing to the diminishing diversity in the field of economics in New Zealand.

Early intervention is key

Although further research is needed to better understand and design appropriate interventions in New Zealand, the international evidence underscores the imperative to focus on pre-tertiary education to foster diversity in economics, especially by offering targeted support and encouragement for students from diverse backgrounds to boost confidence, enhance mathematical preparedness and cultivate interest in the subject.

For example, international research has shown that providing positive feedback to female and underrepresented students who are new to economics, in the form of praise and encouragement increases the probability of them entering the economics major (Advani, Sen, and Warwick 2020). Similar targeted intervention may prove useful in New Zealand in encouraging more diverse enrolment in universities.

Another area highlighted by research as a barrier to diversity is the effect of bias, which refers to negative attitudes towards others. Bias impedes diversity by influencing decisions in hiring, admissions, and daily interactions, which may lead to underrepresentation and unequal opportunities for certain groups (Milkman, Akinola, and Chugh 2015).

While New Zealand universities and workplaces have implemented measures to mitigate explicit bias, tackling implicit attitudes poses a challenge due to their subconscious nature. Effective strategies to mitigate the harms of implicit bias may involve altering the social context, such as fostering a culture that champions diversity and inclusion (Payne and Vuletich 2018).

Interviews and training initiatives have also been shown to increase implicit bias recognition and enhance individual awareness (Onyeador, Hudson, and Lewis 2021). For employers, especially universities, training programmes for faculty and administrators to identify and mitigate unconscious biases, especially in decision-making processes like promotions and admissions, can be essential.

What's next for our research?

The reduction in enrolment and increasing lack of diversity are major concerns within the field of economics. The representation of a diverse range of economists in our society is crucial as diversity supports varied perspectives on economic outcomes and policies.

To gain a comprehensive understanding of diversity, there is a pressing need for improved data, especially across dimensions not covered in this Insight.



Currently, limited information in New Zealand inhibits our understanding of the diverse landscape of communities like the rainbow and neurodiverse communities. Further research is essential to delve into these groups' unique needs and situations.

As a follow-up to this Insight, we may explore how income and employment vary across the dimensions of diversity for economics graduates.

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