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Foreword

ANZRSai 48th Annual Conference 2025

The 2025 ANZRSai Conference (i.e. Our 48th annual conference) is planned to be held jointly with RSA conference in the early December at the University of Waikato in New Zealand. It will be an in-person conference, although opportunities for on-line presentation and streaming will be available. The conference this year will go back to the general theme of development with a particular focus of being inclusive. The theme hopes to cover a wide range of topics from the understanding of development, various indicators such as economic activity, income and wealth, the fulfilment of housing, transport, infrastructure, the role of technology and artificial intelligence and various other factors such as government and governance. In trying to capture the inclusiveness of development within and between people, space and place, the conference will also look at topic such as Urban-Rural Divide, Cultural, Community and Intergenerational issues. Proposals for contributed papers, for themed panels, or for special sessions, will be welcomed on any topic related to regional development futures.

Further information about the conference is available at:

<https://www.anzrsai.org/conference/>

2025 Federal Election: Preview vs the Outcome

All pre-election polls pointed to a hung parliament, but campaign polling has revealed improved prospects for the Albanese government. While some previews rise concern, actual outcome is outstanding for the Albanese government. What could be the main drives?

One term governments are rare in Australian political history, but it is a fate that could befall the Albanese government at the Federal election on May 3.

It is more than nine decades since the Scullin Labor government fell apart under the pressures of governing in the great depression and was defeated barely two years into its term. In less challenging political times, the record shows that governments get second terms.

The Whitlam Labor government elected in 1972 lasted just under three years, squeezing in a second election victory during its two abbreviated terms. The Labor government elected in 2007 and led by Kevin Rudd and then Julia Gillard almost lost office after one term. It survived as a minority government before joining Whitlam's government as one of only two two-term governments in the past century.

As Leader of the House and a senior minister through the six years of the Rudd and Gillard governments, Anthony Albanese will be well aware of the difficulties faced by a government that loses its majority. It was the grim prospect he and his government faced when the election was called.

Four of the last five elections have been historically close. The Gillard government was returned as a minority government in 2010 before the Abbott government's landslide victory in 2013. Since then the Turnbull government was elected with a two seat majority in 2016, the Morrison government a three seat majority in 2019, and the Albanese government another three seat majority in 2022.

At those four close elections, the government won between 72 and 77 seats. Where the 2022 election differed was in the size of the opposition. The Coalition won only 58 seats on losing the 2022 election compared to oppositions of 73 seats in 2010, 69 in 2016 and 68 in 2019.

The difference in 2022 was the election of a record 16-member cross bench. The Coalition lost 18 seats but only 10 to Labor. The other eight were lost to the cross bench, six to 'teal' Independents and two unexpectedly to the Greens rather than Labor. Labor also lost a seat each to the Greens and an Independent.

It is the seats lost to the cross bench in 2016 that creates the higher hurdle for Peter Dutton and the Coalition to achieve office.

Ahead of the campaign opinion polls were in agreement that Labor had lost support since 2022, making it more likely than not that Labor would lose its majority.

But the polls did not show the Coalition in a position to achieve majority government, and were unclear whether the Coalition could win more seats than Labor in a hung parliament. Unless the Liberal Party could recover seats lost to Independents in 2022, the political geography of the Coalition's path to office wound through unfamiliar territory in needing to gain seats it only rarely or had never previously won.

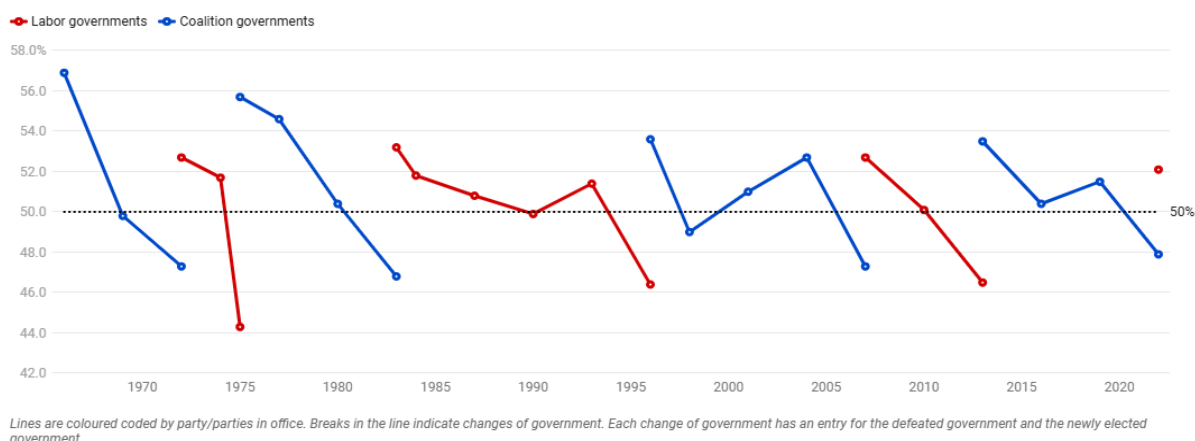
But once the campaign began, the polls began to shift. A lacklustre Liberal campaign combined with economic instability created by President Trump's erratic announcements on tariffs changed the electoral mood with Labor opening a consistent lead in polls for the first time in a year.

All First Term Governments Lose Votes

It may be normal for first term governments to win re-election, but they invariably do so while shedding support. The graph below plots two-party preferred vote percentages for governments at all elections since 1966, the year of Harold Holt's landslide victory after succeeding Sir Robert Menzies.

The lines are coloured blue for Coalition governments, red for Labor governments. The line breaks show changes of government plotting the two-party percentage for both the defeated and newly elected government.

National Two-Party Preferred Pct Vote 1966-2022



[Source: <https://www.abc.net.au/>]

Every line slopes downward representing governments losing support the longer they remained in office. Only four of the 22 elections plotted produced an increase in vote for the government. Those were Paul Keating's come from behind victory in 1993, John Howard's re-elections in 2001 and 2004, and Scott Morrison's 'miracle' victory in 2019.

Apart from the Albanese government's victory, the chart shows six changes of government, in 1972, 1975, 1983, 1996, 2007 and 2013. All six of those elections were followed by the government being re-elected but with reduced support. Even Bob Hawke, far ahead in polls when he called an early election for December 1984, was re-elected in the face of a swing against his government.

The Albanese government came to office with the lowest two-party preferred support of any first term government in seven decades. Labor's two-party preferred vote in 2022 was 52.1%, lower than 52.7% for Kevin Rudd in 2017, 53.2% for Bob Hawke in 1983, and lower than 52.7% for Gough Whitlam in 1972. The euphoria attached to those earlier Labor victories was absent for Anthony Albanese's victory.

If the Albanese government were to suffer the small swings against Whitlam in 1974, Fraser in 1977 or Hawke in 1984, the government would likely survive as a minority government in a manageable House. But the sort of swing faced by John Howard in 1998, Julia Gillard in 2010 and Malcolm Turnbull in 2016, would produce a weak minority Labor government or even a minority Coalition government.

All polls in the year before the election had support for the Albanese government down since 2022. Many of these polls reported the Coalition ahead on the two-party preferred vote, but not by enough for majority government or to be certain of winning more seats than Labor. That was before the polls began to shift Labor's way in the campaign.

The government's pre-election polling was a long way from the good polls in the government's first year which culminated in its historic victory at the Aston by-election in April 2023. The Voice referendum later that year coincided with the decline in the government's poll ratings. Peter Dutton spent the period campaigning on cost-of-living issues and criticised the government for spending hundreds of millions of dollars on a referendum he said divided Australians.

In early 2024 the government re-directed the benefits of the Morrison government's stage three tax cuts so that all voters received a tax cut. The move received a positive public response and helped the government win the March 2024 Dunkley by-election. But from there the drip of poor opinion polls resumed as interest rates and inflation bit into the financial positions of voters.

The government can argue that both inflation and interest rates were on the way up in the final days of the Morrison government. But both continued to rise under the Albanese government before finally levelling off and reversing. A recession and rising unemployment have been avoided, but voters have still felt financial pain.

Inflation coming down doesn't mean voters forget that prices are higher than three years ago. Yet the government's switch to campaign mode in early January seemed to coincide with a change of national mood. The arrival of Cyclone Alfred deferred the expected April 12 election and produced a week of Anthony Albanese looking very prime ministerial.

Then came a budget that neither side had expected to be delivered. By announcing the election date three days after the budget the Prime Minister drowned out coverage of Peter Dutton's budget response. The opposition started the campaign on the wrong foot, and had the first of several policy stumbles within days. And that was before President Trump's erratic changes to tariff policy seemed to make stability look a safer bet than change.

The campaign appears to have diminished prospects of the Coalition winning, though the 2019 election taught everyone to be wary of placing faith in polls. Even if the improved polls for Labor are right, the vagaries of translating votes into seats doesn't answer whether Labor can achieve majority government.

Is the Traditional Two-Party Contest Still Relevant?

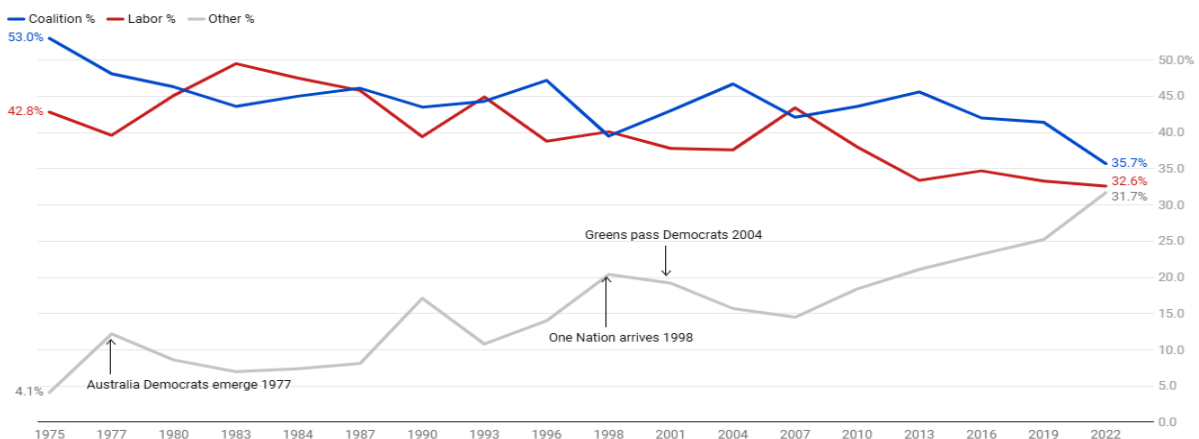
Redistributions, by-elections and resignations have changed the seat numbers since 2022. (See details down the page.) They leave the starting point for the 2025 election at Labor 78 seats, the Coalition 57 seats and 15 members on the cross bench.

As a rough guide, a swing of under 1% would deprive Labor of its majority. For the Coalition to finish with more seats than Labor it requires a swing of around 3.6%. Majority government for the Coalition needs a uniform swing of 5.3%.

But how reliable is national two-party preferred vote and swing at elections where so many seats are no longer two-party contests? In 2022 there were a record 27 seats that did not finish as traditional two-party preferred contests. Sixteen of those contests elected a cross bench member.

For months commentators have quoted national two-party preferred percentages and predicted how the election might unfold. Perhaps they should pay more attention to the first preference vote in polls. Most current polls match the end point of the chart below showing first preference support for Labor, Coalition and 'Others' at elections since 1975.

House Elections 1975-2022 - % Vote by Party



[Source: <https://www.abc.net.au/>]

When the vote for third parties and independents passed 15% for the first time in 1990, preferences of 'Others' decided the election. The Labor Party actively advertised for preferences in 1990 and higher than expected preference flows from Australian Democrat candidates helped re-elect the Hawke government.

When One Nation burst on to the scene at the 1998 Queensland election, the decision of the Liberal and National parties to recommend preferences towards the new party resulted in One Nation electing 11 state members. At the federal election a few months later, One Nation was responsible for 'Other' support passing 20% of the first time in half a century. The major parties recommended preferences for each other to keep One Nation out of federal Parliament, a tactic that largely worked.

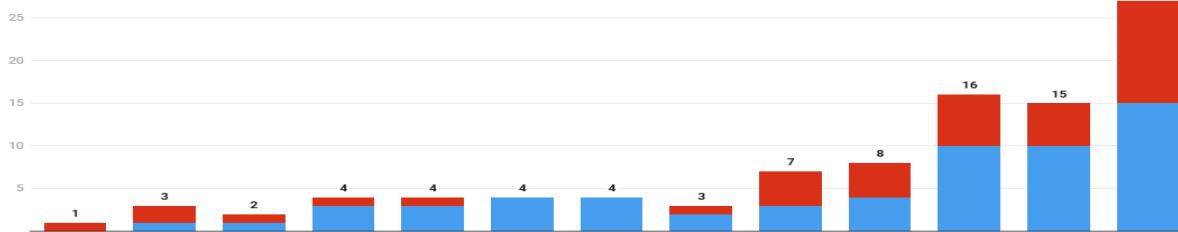
The internal travails of One Nation saw 'Other' support decline through to the election of the Rudd government in 2007. Since then, continued growth in Greens support, the return of One Nation,

campaigns by Clive Palmer and the rise of Independents have lifted 'Other' support to 31.7% in 2022, not far short of the level recorded by Labor and the Coalition.

But the above national vote graph hides how the decline of major party support has accelerated the growth in non-traditional electoral contests. Support for Labor and the Coalition varies by seat across the country. The lower the national vote for Labor and the Coalition, the more seats where a third party or independent candidate finishes in the final pairing after preferences, which is demonstrated by the chart below.

Seats that were Not Two-Party Contests 1987-2022

Coalition Seats Labor Seats



Tally of seats for each election that did not finish as Labor versus Coalition contests. Excludes a small number of Liberal versus National races. Labor or Coalition status determined based on alternative two-party preferred counts undertaken by the AEC.

[Source: <https://www.abc.net.au/>]

Percentage vote support for Others doubled between 2007 and 2022, but the number of contests where a minor party or independent candidate finished in the final pairing increased nine-fold. For Labor the numbers are mainly contests versus the Greens with only Wills in 1993, Fowler in 2022 and Clark/Denison since 2010 being seats lost to Independents. For the Coalition the losses have all been to Independents or single member parties. And cobbling together individual members to achieve stable government can be a tough task.

However, the actual outcome of the election follows.

Federal Election 2025 - Australia Votes

National two-party preferred estimate ⓘ

54.9%

Labor

2.8% swing to ALP

45.1%

Coalition

Federal Election 2025 | Full Results >

89.3% counted, updated 15m ago

2 Seats in doubt



[Source: <https://www.abc.net.au/>]

Where it went wrong for the Liberal Party? The Coalition has a young person problem. Sometimes in election campaigns, politicians say things that make you go "eek". For Peter Dutton, one of those moments came days out from the federal election and related to the crucial issue of housing.

"People are renters for longer, and generally that means that they're more inclined to support the Labor Party. And then, as their views mature politically, they come across the Liberal Party," Mr Dutton told news.com.au.

The opposition leader had, by this stage, spent nearly five weeks trying to position himself as the future "prime minister for home ownership", in an apparent appeal to renters, although this positioning was undermined by missteps, to say nothing of the intervention from his own son Harry, who told reporters that home ownership was "almost impossible" for young people.

So, the statement on political maturity made by a prime ministerial hopeful was eek-worthy, and for two main reasons.

First, it suggested that the Coalition's campaign had written off both young people and renters — two growing cohorts of the electorate.

Much has been made of the fact that gen Z and millennial voters outnumbered baby boomers for the first time this year, so it seemed particularly baffling that someone vying to be prime minister would effectively dismiss their concerns by calling them politically immature.

Second, Mr Dutton's assertion that younger voters eventually "come across" to the Liberal Party as they age simply isn't true anymore, no matter how much he wants it to be.

Analysis from the 2022 Australian Election Study found that young people were now starting off more progressive than previous generations, and they weren't becoming more conservative at anywhere near the same rate as they aged.

In 2022, that meant just one in four people aged 40 and under voted for the Coalition, representing what authors of the report called an "existential threat" to the conservative side of politics.

"We've never seen such low levels of support for one of the major parties as we're seeing in levels of support for the Coalition in the under-40 cohort," University of Sydney professor and report co-author Simon Jackman said of the 2022 result.

Furthermore, 2023 research by the Centre for Independent Studies found the Coalition would likely be in the political wilderness in opposition for at least two decades if it didn't address its apparent inability to attract young voters.

So, did the Coalition do anything during this election campaign to heed those warnings? We're still waiting for the dust to settle from the May 3 election, but there are a couple of things we can identify to find an answer.

The news with some significant data can be explored here at the following links:

<https://www.abc.net.au/news/elections/federal/2025/guide/preview-national>

<https://www.abc.net.au/news/2025-05-12/the-coalition-has-a-young-person-problem/105276642>

<https://www.abc.net.au/news/2025-05-15/what-do-young-liberals-think-is-the-future-of-their-party/105289828>

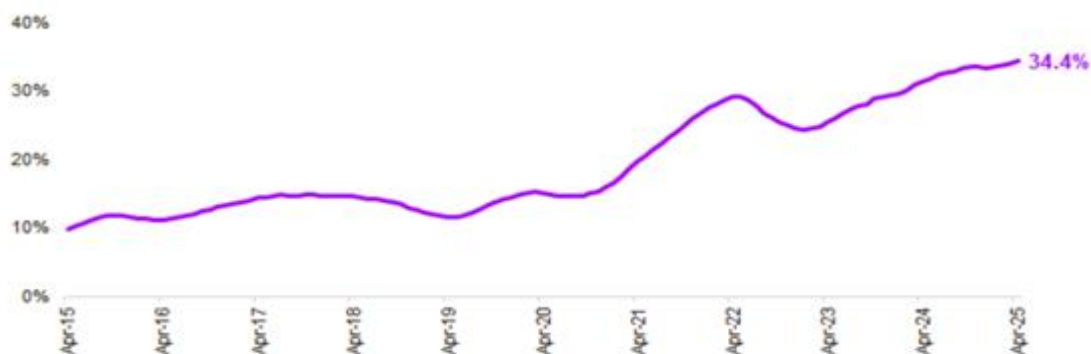
A Third of Australian Homes Worth at Least \$1 Million

What can \$1 million buy you? Less than it did a decade ago in the housing market, with the value of a third of homes now above the million-dollar mark, according to research from Cotality.

The data shows the portion of dwellings valued at \$1 million or more has risen from just below 10 per cent in April 2015, to more than 34 per cent a decade later.

Eliza Owen, head of research at the property insights firm, notes that a million-dollar price tag is "increasingly standard" for housing in Australia, after the median home value across the capitals surpassed that level last year.

**Figure 1. Portion of Australian homes that are valued at \$1 million or more
Australia wide**



Source: Cotality (formerly CoreLogic)

Over a third of homes nationally are now valued at \$1 million or higher, Cotality found. (Supplied: Cotality)

Regionally, nearly 20 per cent of homes are valued at \$1 million or higher, compared to just 0.5 per cent a decade ago, Cotality found.

Across the capital cities, it's nearly 42 per cent of homes, up from 14 per cent.

What can you get for \$1 million compared to a decade ago?

Of course, as home values rise, what you can get for the same price has also changed substantially since 2015.

Cotality found two-thirds of homes in Sydney have passed the million-dollar threshold, and for that money is "generally smaller, and further afield than a decade ago".

"Only houses with five or more bedrooms had a median value over \$1 million in Greater Sydney a decade ago," Ms Owen says.

Now, the median value across houses with any number of bedrooms is more than \$1 million and for five-bedroom houses, it's over \$2 million.

Here's how the capital cities stack up:

Proportion of homes valued at \$1m or more, April 2025	
Capital Cities	%
Sydney	64.4%
Brisbane	40.2%
Melbourne	30.9%
Adelaide	27.8%
Perth	26.3%
Hobart	11.9%
Darwin	1.3%

Ms Owen forecasts Brisbane to become the country's next "million-dollar house market", with the median house price sitting at \$990,000.

"Even if Brisbane house values rise half the rate that they did in the 2024 calendar year, they would hit \$1,010,000 by the end of 2025," she notes.

In Melbourne, the proportion of homes valued over \$1 million is around 30 per cent, below a peak of 33.1 per cent in January 2022 but up from 12.4 per cent a decade ago.

However, the trend isn't uniform across the country — in Hobart, a significantly smaller percentage have the million-dollar price tag, compared to a peak of around a fifth of homes in March 2022 for the Tasmanian capital.

"A combination of rapidly rising interest rates, weak population growth trends and relatively weak jobs growth may have contributed to sustained home value declines across the city," Ms Owen writes.

And Darwin remains the capital with the lowest portion of million-dollar homes and the current level is only slightly above where it sat in 2015 (1.3 per cent vs 1 per cent).

The million-dollar mark comes not only at a cost (of at least \$1 million in many case) to those buying homes but to those locked out of the market by the increasing price tag.

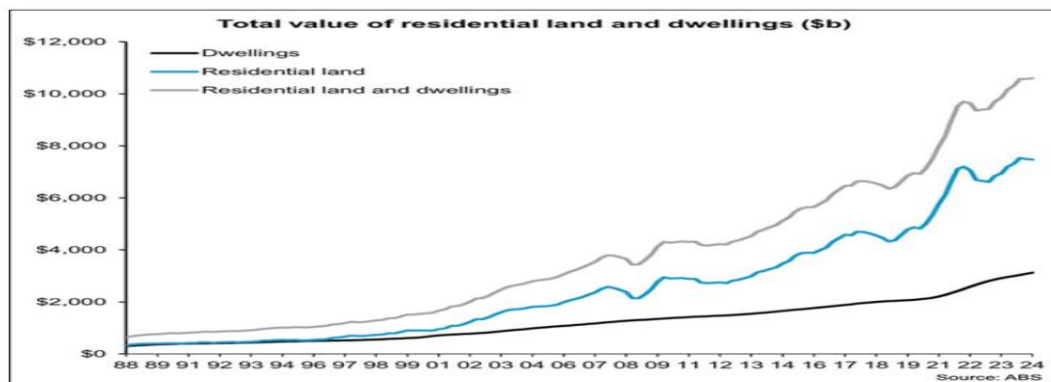
Lenders are cutting fixed and variable rates in an attempt to attract customers ahead of a widely anticipated Reserve Bank meeting next week.

"The rate of home ownership has gradually declined over time, particularly among younger, low-income households where income cannot keep pace with growth," Ms Owens says.

"The average age of first home buyers has increased, and increasingly wealthy households are stuck renting for longer, which increases competition for low-income, renting households."

Independent property economist Cameron Kusher argues there needs to be a "paradigm shift" in the way Australians view housing, "away from one in which you build wealth from buying and holding residential property to one in which it is seen as essential shelter".

In his Oz Property Insights note, Mr Kusher observes that lowering the cost of land would reduce the growth in home prices, due to much of the value lying in the land rather than the dwelling.



Of the \$10.6 trillion in residential land and dwelling assets owned by households, around 70 per cent of the value sits in the land.
(Supplied: Oz Property Insights)

"This data explains the price discrepancy between detached houses and medium and higher-density housing and also shows why houses tend to grow in value at a much faster pace than units do," Mr Kusher says.

[Source: <https://www.abc.net.au/>]

"This data explains the price discrepancy between detached houses and medium and higher-density housing and also shows why houses tend to grow in value at a much faster pace than units do," Mr Kusher says.

He says younger Australians are likely to be in favour of "upzoning" of sites to allow higher-density housing because it will give them a better chance of living in an area they like.

"...realistically [younger people] have very little chance of making that a reality if they have to buy a house given how much prices have escalated in recent decades.

Further information can be found at:

<https://www.abc.net.au/news/2025-05-16/what-one-million-buys-in-housing-market-cotality/105296718>

How Real is the Risk of Nuclear War between India and Pakistan?

In the latest India-Pakistan stand-off, there were no ultimatums, no red buttons.

Yet the cycle of military retaliation, veiled signals and swift international mediation quietly evoked the region's most dangerous shadow. The crisis didn't spiral towards nuclear war, but it was a reminder of how quickly tensions here can summon that spectre.

Even scientists have modelled how easily things could unravel. A 2019 study by a global team of scientists opened with a nightmare scenario where a terrorist attack on India's parliament in 2025 triggers a nuclear exchange with Pakistan.

Six years later, a real-world stand-off - though contained by a US-brokered ceasefire on Saturday - stoked fears of a full-blown conflict. It also revived uneasy memories of how fragile stability in the region can be.

As the crisis escalated, Pakistan sent "dual signals" - retaliating militarily while announcing a National Command Authority (NCA) meeting, a calculated reminder of its nuclear capability. The NCA oversees control and potential use of the country's nuclear arsenal. Whether this move was symbolic, strategic or a genuine alert, we may never know. It also came just as US Secretary of State Marco Rubio reportedly stepped in to defuse the spiral.

President Trump said the US didn't just broker a ceasefire - it averted a "nuclear conflict". On Monday, in an address to the nation, Indian Prime Minister Narendra Modi said: "[There] is no tolerance for nuclear blackmail; India will not be intimidated by nuclear threats.

"Any terrorist safe haven operating under this pretext will face precise and decisive strikes," Modi added.

India and Pakistan each possess about 170 nuclear weapons, according to the think-tank Stockholm International Peace Research Institute (Sipri). As of January 2024, Sipri estimated there were 12,121 nuclear warheads worldwide. Of these, about 9,585 were held in military stockpiles, with 3,904 actively deployed - 60 more than the previous year. The US and Russia together account for more than 8,000 nuclear weapons.

The bulk of both India's and Pakistan's deployed arsenals lies in their land-based missile forces, though both are developing nuclear triads capable of delivering warheads by land, air and sea, according to Christopher Clary, a security affairs expert at the University at Albany in the US.

"India likely has a larger air leg (aircraft capable of delivering nuclear weapons) than Pakistan. While we know the least of Pakistan's naval leg, it is reasonable to assess that India's naval leg is more advanced and more capable than Pakistan's sea-based nuclear force," he told the BBC.

One reason, Mr Clary said, is that Pakistan has invested nowhere near the "time or money" that India has in building a nuclear-powered submarine, giving India a "clear qualitative" edge in naval nuclear capability.

Since testing nuclear weapons in 1998, Pakistan has never formally declared an official nuclear doctrine.

India, by contrast, adopted a no-first-use policy following its own 1998 tests. But this stance has shown signs of softening. In 2003, India reserved the right to use nuclear weapons in response to chemical or biological attacks - effectively allowing for first use under certain conditions.

Further ambiguity emerged in 2016, when then-defence minister Manohar Parrikar suggested India shouldn't feel "bound" by the policy, raising questions about its long-term credibility. (Parrikar clarified that this was his own opinion.)



Pakistan's surface-to-surface Shaheen II missile is capable of carrying a nuclear warhead

[Source: <https://www.bbc.com/>]

The absence of a formal doctrine doesn't mean Pakistan lacks one - official statements, interviews and nuclear developments offer clear clues to its operational posture, according to Sadia Tasleem of Carnegie Endowment for International Peace.

Pakistan's nuclear threshold remains vague, but in 2001, Khalid Kidwai - then head of the Strategic Plans Division of the NCA - outlined four red lines: major territorial loss, destruction of key military assets, economic strangulation or political destabilisation.

In 2002, then-president Pervez Musharraf clarified that "nuclear weapons are aimed solely at India", and would only be used if "the very existence of Pakistan as a state" was at stake.

In his memoir, former US Secretary of State Mike Pompeo wrote that he was jolted awake at night to speak with an unnamed "Indian counterpart" who feared Pakistan was preparing to use nuclear weapons during the 2019 stand-off with India.

Around the same time, Pakistani media quoted a senior official issuing a stark warning to India: "I hope you know what the [National Command Authority] means and what it constitutes. I said that we will surprise you. Wait for that surprise... You have chosen a path of war without knowing the consequences for the peace and security of the region."

During the 1999 Kargil War, Pakistan's then-foreign secretary Shamshad Ahmed warned that the country would not "hesitate to use any weapon" to defend its territory. Years later, US official Bruce Riedel revealed that intelligence indicated Pakistan was preparing its nuclear arsenal for possible deployment.

But there is scepticism on both sides over such claims.

Former Indian high commissioner to Pakistan Ajay Bisaria wrote in his memoir that Pompeo overstated both the risk of nuclear escalation and the US role in calming the conflict in 2019. And during Kargil, Pakistan "knew the Indian Air Force wouldn't cross into its territory" - so there was no real trigger for even an implicit nuclear threat, insist Pakistani analysts.

"Strategic signalling reminds the world that any conflict can spiral - and with India and Pakistan, the stakes are higher due to the nuclear overhang. But that doesn't mean either side is actively threatening nuclear use," Ejaz Haider, a Lahore-based defence analyst, told the BBC.

But nuclear escalation can happen by accident too. "This could happen by human error, hackers, terrorists, computer failures, bad data from satellites and unstable leaders," Prof Alan Robock of Rutgers University, lead author of the landmark 2019 paper by a global team of scientists, told the BBC.

In March 2022, India accidentally fired a nuclear-capable cruise missile which travelled 124km (77 miles) into Pakistani territory before crashing, reportedly damaging civilian property. Pakistan said India failed to use the military hotline or issue a public statement for two days. Had this occurred during heightened tensions, the incident could have spiralled into serious conflict, experts say. (Months later, India's government sacked three air force officers for the "accidental firing of a missile".)

Yet, the danger of nuclear war remains "relatively small" between India and Pakistan, according to Mr Clary.

"So long as there is not major ground combat along the border, the dangers of nuclear use remain relatively small and manageable," he said.

"In ground combat, the 'use it or lose it' problem is propelled by the possibility that your ground positions will be overrun by the enemy." ('Use it or lose it' refers to the pressure a nuclear-armed country may feel to launch its weapons before they are destroyed in a first strike by an adversary.)

Sumit Ganguly, a senior fellow at Stanford University's Hoover Institution, believes that "neither India nor Pakistan wants to be labelled as the first violator of the post-Hiroshima nuclear taboo".



The Chagai Hills, whitened at the top after Pakistan's nuclear tests in May 1998, in south-western Balochistan [Source: <https://www.bbc.com/>]

"Furthermore, any side that resorts to the use of nuclear weapons would face substantial retaliation and suffer unacceptable casualties," Mr Ganguly told the BBC.

At the same time, both India and Pakistan appear to be beefing up their nuclear arsenal.

With new delivery systems in development, four plutonium reactors and expanding uranium enrichment, Pakistan's nuclear arsenal could reach around 200 warheads by the late 2020s, according to The Nuclear Notebook, researched by the Federation of American Scientists' Nuclear Information Project.

And as of early 2023, India was estimated to have about 680kg of weapons-grade plutonium - enough for roughly 130-210 nuclear warheads, according to the International Panel on Fissile Materials.

Despite repeated crises and close calls, both sides have so far managed to avoid a catastrophic slide into nuclear conflict. "The deterrent is still holding. All Pakistanis did was to respond to conventional strikes with counter-conventional strikes of their own," writes Umer Farooq, an Islamabad-based analyst.

Yet, the presence of nuclear weapons injects a constant undercurrent of risk - one that can never be entirely ruled out, no matter how experienced the leadership or how restrained the intentions.

Further information interesting reports can be found at the following link:

<https://www.bbc.com/news/articles/c2e373yzndro>

Commentary

From the Regional Australia Institute

Beyond city limits: unveiling income premiums in regional Australia

This report, *Beyond City Limits: Unveiling Income Premiums in Regional Australia*, analyses the nature and extent of income differences between major city and regional jobs.

With the enduring cost-of-living squeeze changing the way many workers and families manage their budgets, the pursuit of higher incomes is top of mind for many Australian households.

In this report, the RAI identifies the impact of geographical location on incomes across the range of Australian occupations, controlling for the effect of age, gender, occupation, industry and education. Using integrated Census and Australian Taxation Office (ATO) data covering around 80% of the Australian workforce, it then drills down into which professions enjoy higher incomes in the regions after accounting for housing costs.

The report analyses occupations across Australian Statistical Geography Standard (ASGS) Remoteness Areas: Major Cities, Inner Regional, Outer Regional, Remote and Very Remote using the Australian and New Zealand Standard Classification of Occupations (ANZSCO). The results show that Remote and Very Remote areas offer significant income premiums across a range of occupations, with Machinery Operators and Drivers the biggest winners.

Remote regions with high levels of industry specialisation, such as mining or agriculture, attract an income premium of 25.9%. This premium is highest for the occupation groups of Machinery Operators and Drivers, and Technicians and Trades Workers.

While there is a clear income premium for those living in many areas of Remote and Very Remote Australia, especially where specialised industries exist, this report also showcases many roles where workers living in regions are advantaged financially across the national landscape. It shines a light on contemporary opportunities, not just for regional Australians, but for the national workforce.

The policy recommendations in this report are drawn from more than a decade of research, undertaken by the RAI, in relation to employment and skills. They do not pertain solely to this report.

The five key recommendations made in this research report are:

- 1) **Provide information:** Provide job seekers with information about regional job vacancies that offer comparable or higher incomes than the major cities, and promote the many benefits of regional living, including income, lifestyle and housing affordability.
- 2) **Make it easy:** Make it easier for Australians to move to the regions to fill skilled job vacancies by addressing barriers in the tax system (e.g. stamp duty) and regulatory frameworks (e.g. jurisdictional occupational licensing restrictions).
- 3) **Encourage skilled migrants:** Encourage more skilled migrants to settle and work in regional Australia including through:
 - Dedicated regional visa programs.
 - A substantial regional allocation in annual migration planning.
 - Reducing time and cost of visa applications and processing.
 - Amending regional definitions to stop regional visas being allocated to capital cities.
 - Investing in migrant settlement services and working with local communities.
- 4) **Improve digital connectivity:** Improve digital connectivity in regional, rural and remote Australia by setting a minimum standard for connectivity in all regions that enables full participation by regional individuals and businesses in the digital economy and the ability for skilled workers to work in knowledge jobs anywhere in Australia.

- 5) Invest in regional Australia: Invest in regional housing, infrastructure, health and education services to ensure living standards keep pace with population growth and allow the regions to remain as attractive locations to start a new job and settle.

Detailed information, including a copy of the full report can be found at:

<https://www.regionalaustralia.org.au/libraryviewer?ResourceID=119>

Regionalisation ambition 2032

As Australia's pre-eminent, authoritative source of independent information and policy advice on regional Australia, the Regional Australia Institute works with partners across the country to ensure regions are empowered to thrive and take their rightful place in the Australian story.

Regional Australia shaped the foundation of our nation. At Federation, just under two thirds of Australia's population lived in the regions. This has since shifted dramatically, with just under two thirds of Australia's population living in the capitals, and the cities of Sydney and Melbourne on a trajectory to 'megacity' status by mid-century. We believe this expansion of 'megacities' is not the right trajectory for Australia – instead, we must unlock the productivity and economic potential of Australia's regional cities and communities and rethink our nation's population settlement.

We know that Australians are 'voting with their feet' and looking to alternate lifestyle opportunities outside of the major capitals. In the two Census periods to 2016, we have seen more people moving from capital cities to regions than the other way around. Since the launch of our Regional Movers Index, powered by Commonwealth Bank of Australia, we know that this has only further propelled movement during the recent pandemic. It's time to harness this opportunity and rebalance the nation.

We are proud to present our Regionalisation Ambition 2032 - A Framework to Rebalance the Nation (the Framework). Regional people have said for years that they don't want to be told, they want to be heard.

They want a long-term plan, to contribute and collectively build a stronger Australia and ensure a healthy and prosperous future for their children. We also want this and it's our role to help achieve this through developing a lasting legacy that we can all be proud of.

But we cannot do it alone. The Framework translates the critical matters most important to regional Australia into a call for real, collaborative action which will shape the nation for generations to come. We know this is no small ask – the Framework poses a deeply complex, systems-wide approach to regionalisation, and can only be influenced by the whole eco-system through collaborative action between all parties. As we enter this next decade, we must work together – as governments, industry, peak and regional organisations, not-for-profits and communities – to embrace and unlock the opportunities of regional Australia, and build stronger regions, for a stronger, more balanced nation.

We are kickstarting a movement, a genuine shift in mindset and action right across the country, that places regional Australia solidly at the heart of our policy, planning, investment and decision-making. We ask that you champion this with us.

It's time to Rebalance the Nation.

Regional, rural and remote Australia (regional Australia) is home to over 9.5 million Australians, projected to increase to just under 10.5 million by 2032, based on the most recent combined State and Territory growth projections. Through our continued dedication to regional Australia, the Regional Australia Institute (RAI) has highlighted the boundless potential of our regions which, if unlocked, would lead to a stronger regional Australia and a stronger, more balanced nation.

90% of those surveyed in our regionalisation consultation survey agree that Australia needs a long-term ambition for strengthening our regional communities.

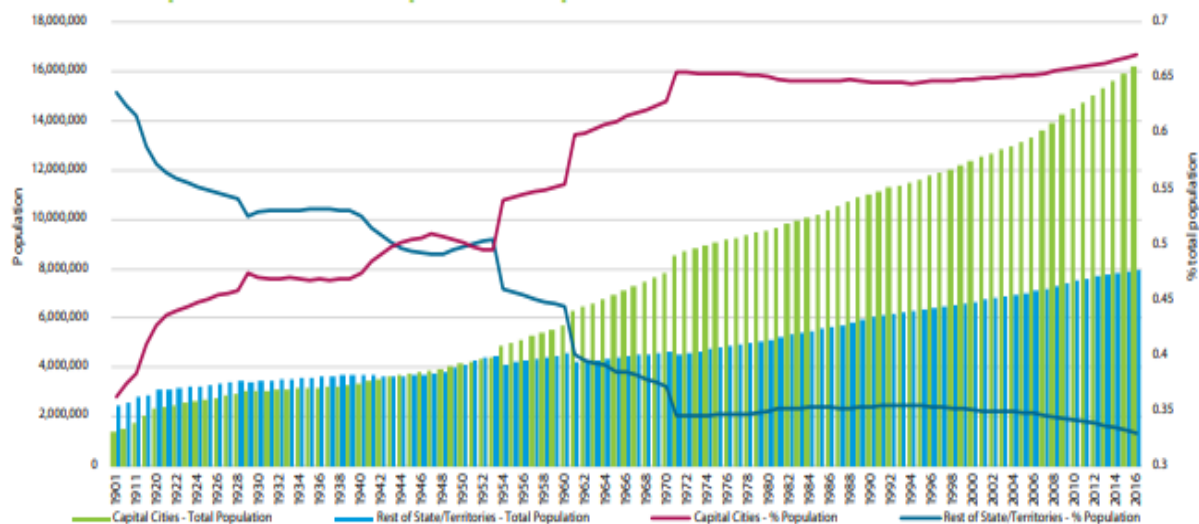
We know that regional Australia is calling for a long-term ambition for regions – we simply need to come together as government, industry, not-for-profit and community leaders to lead the way. We at the RAI wish to champion this shift in mindset that places regional Australia solidly at the heart of policy, planning, investment and decision-making.

Today, Australia is one of the most urbanised nations in the OECD, with just under two thirds of Australia's population living in our handful of major capitals. Historically this has not always been the case – at Federation just over one third of Australians lived in Australia's capitals, and two thirds in our regions.

Whilst this trend reflects global shifts towards increasing urbanisation and expansion of city-based service industries, Australia's unique pattern of urban primacy is unsustainable, and we believe it's time to shift this trajectory.

This report poses a bold ambition to rebalance the nation and seeks to challenge the current trajectory of Australia's growth with an ambitious alternative, building a more prosperous, inclusive and balanced Australia.

Australia's Population Shifts – Comparison of Capital Cities and Rest of State³



[Source: <https://www.regionalaustralia.org.au/>]

This is, however, only the beginning of this journey. The RAI is issuing a call for collaborative action and change in each of the pillars spotlighted in the Framework, over the next decade. This Framework sets out a multifaceted suite of aspirations, targets and corresponding actions, that seek to achieve impactful shifts in a complex system of stakeholders and relationships.

Achieving our ambition will require collaboration, engagement and action across each of the targets set out in the Framework, by all parties. Every one of us will have the power to make regionalisation a reality. Every one of us must play a part in creating or supporting action that ensures we build a more prosperous, inclusive, and balanced future for Australia.

Further information can be found at the links:

<https://www.regionalaustralia.org.au/common/Uploaded%20files/Rebalance-the-Nation/Rebalance-the-Nation-Report-2022.pdf>

From Brookings

Why Australia should be watching New Zealand and Cook Islands closely

Australia's reliance on bilateral security agreements as a counter to China's growing influence in the Pacific is proving short-sighted, as Cook Islands' engagement with Beijing demonstrates. To secure enduring regional partnerships, Australia must prioritise long-term relationship-building and Pacific-led regionalism over transactional agreements and reactionary diplomacy.

The news that Cook Islands will sign a "comprehensive strategic partnership" with China has attracted significant attention. Cook Islands has a relationship of "free association" with New Zealand and is obliged to "consult regularly" on its foreign, defence, and security policy. While New Zealand Foreign Minister Winston Peters had requested to see the proposed partnership agreement, Cook Islands Prime Minister Mark Brown flew to China without providing the document. The New Zealand Foreign Ministry responded that they viewed Cook Islands as "having failed to properly consult," which was a "matter of significant concern." This is a challenge for New Zealand, but in many ways, it is Australia who should be most worried.

Australian governments of both persuasions have constructed an Australian-centred security architecture in the Pacific via a network of bilateral security and defence arrangements. Australia signed a bilateral security treaty with Solomon Islands in 2017, Vuvale Partnership with Fiji in 2019 (renewed in 2023), a comprehensive strategic and economic partnership in 2020 and then bilateral security agreement in 2023 with Papua New Guinea (PNG), a security agreement with Vanuatu (now under review) in 2022, the Falepili Union Treaty with Tuvalu in 2023, and a treaty with Nauru in 2024.

Most recently, Australia agreed to contribute AUD\$600 million over ten years to support a PNG team entering the Australian NRL competition. In exchange, the PNG government reportedly signed an agreement on "strategic trust," which provided that Australia could withdraw its funding if PNG does not retain Australia as its major security partner.

Australian governments have been quick to claim these bilateral arrangements as diplomatic wins. But they are the diplomatic equivalent of a Mars Bar: the government gets the sugar-rush of making an announcement, but there is no guarantee that these arrangements will deliver long-term outcomes.

While there are mechanisms to enforce treaties under international law, it is unlikely that either Australia or its Pacific counterparts would do so. Even if Australia, for example, was found to have breached a treaty obligation, we've been reminded of the unenforceability of international legal decisions by the war in Gaza. And as the Trump administration has normalised abrogating treaty and other bilateral obligations, an Australian government may conclude that it can bear the shame of doing so. Security agreements have even fewer practical enforcement mechanisms.

Sanctions are the most likely enforcement mechanism, but Australia's sanctions on Fiji after its 2006 coup illustrate how ineffective they can be. Alternatively, Australia could threaten to withdraw its support—such as banking and development assistance to Nauru—if its Pacific counterpart were perceived to be in breach, such as by striking a deal with China. But this is also unlikely. In an environment of heightened strategic competition, Australia knows that China is likely to step in to the breach.

So, what should Australia do? While electoral politics and the grinding news cycle encourage governments to seek sugar-fixes, Australia needs to do two things.

First, fight short-term transactionalism, which has become more explicit over the last 18 months: on one reading, Australia took advantage of the vulnerabilities of Nauru (economic and banking) and Tuvalu (climate change) to secure treaties and advance its strategic interests. The reported agreement on “strategic trust” is similarly transactional, with PNG’s NRL funding reliant on Australia continuing to be its primary security partner.

Australia has, at different times since colonial settlement, been anxious about French, Dutch, German, Japanese, Soviet, and Libyan influence in the Pacific. In the context of broader strategic competition in the Indo-Pacific, Australia currently has legitimate strategic concerns about the much-amplified “China threat.” But regardless of how that threat is eventually resolved, Australia’s geography won’t change. This highlights why Australia should balance pursuing its short-term strategic interests with building long-term relationships.

Our colleagues have reminded us that “relationships are more important than might and money.” Through research with partners in Solomon Islands and Vanuatu, we know that Australia’s role in the region is appreciated. But Australia “should feel both pride and humility about its track record.” Importantly, many research participants would prefer that Australia pursue “long-term constructive development approaches over more immediate, ‘flashy’ aid.”

Second, Australia’s focus on bilateral security agreements, combined with new Australian-led regional mechanisms, risks undermining the Pacific Islands Forum and other regional agencies. Pacific leaders have made clear their desire for Pacific-led regionalism.

Recent Australian schemes such as the Pacific Policing Initiative and the Pacific Response Group have responded to regional priorities and have been endorsed by the Pacific Islands Forum and the South Pacific Defence Ministers Meeting (PRG). But these initiatives have been instigated, and are largely run and funded by, Australia. While resource and capacity constraints in the Pacific mean that, inevitably, partner countries play a key role in providing assistance, Australian-backed initiatives are often viewed as overreach that undermines Pacific sovereignty.

Australia should therefore centre Pacific-led regional approaches. For example, Australia could work with Pacific Island countries to develop a regional approach to climate migration, rather than linking this opportunity to its strategic interests under the Falepili Union. This might be harder to sell domestically, but the Australian public are capable of grasping well-explained policy decisions, particularly if efforts are made to improve understanding of the Pacific in Australia.

Given the importance of domestic issues in Pacific countries, including the rising cost of living, corruption, the state of law and order, and the impact of climate change, Australia must also realise that it is difficult for Pacific Island countries to “pick a side.” Indeed, many influential Pacific leaders have visited China and been impressed by its development model. Many also see the ability to enter into economic and other arrangements with China and other partners as an important demonstration of their independence.

Rather than continuing its security arrangement “arms race” with China, Australia would be better trying to facilitate partner countries—including China—engaging through regional mechanisms. China has traditionally been reluctant to take this approach, as it views many regional institutions—particularly the Pacific Islands Forum—as overly influenced by Australia and New Zealand, as well as complicated by the continued recognition of Taiwan by Tuvalu, Palau, and the Marshall Islands.

Read the whole article here at:

<https://www.internationalaffairs.org.au/australianoutlook/why-australia-should-be-watching-new-zealand-and-cook-islands-closely/>

From University of Sydney, the Warren Centre for Advanced Engineering

Digital Energy Systems- challenges, opportunities and technologies

Australia is at the forefront of the uptake of distributed energy resources (DER) globally. According to the Australian Energy Market Operator (AEMO), power supply will consist mostly of renewable energy sources by 2040, with more than 20% coming from small-scale DER.

The objective of this white paper is to provide a better understanding of the current digital energy systems landscape as reviewed by leading University of Sydney researchers, industry and business partners including The Warren Centre and Nokia. It assesses the current situation and looks toward the future to identify where and what sort of challenges are likely to arise. It aims to trigger further collaboration between the research community, industry and government agencies, as Australia seeks to find an effective, integrated solution to the nation's distributed energy resources.

Challenges: The challenge is to harness this intermittent energy. Today home solar owners in Australia are paid about 10 cents/kWh for electricity they export to the grid, but the retailers sell it for 30+ cents. There are two huge opportunities. Firstly, there is the commercial opportunity. The financial gap is huge. Can we manage this exported solar and distribute it to local customers? Who will manage it? What is needed to make this new exchange of electricity work and create a new 2-way market?

Secondly, rooftop solar generates power on demand side of the power meter. The emerging issue is low demand associated with over voltages and reverse power flows, not peak demand as in conventional grids. However, if these sources of power are controlled, they can actually balance the network.

Network companies can only manage the rapid uptake of rooftop solar by curtailing existing rooftop solar generation and preventing new connection, which is against the interest of prosumers.

The current demand response practices, that use flexible loads can shift demand by a few hours to reduce peak demand. However, these shift practices often do not consider the end users' comfort requirements. Regardless, an increasing number of new rooftop solar installations come with battery storage. Battery storage, coupled with an intelligent energy management system (EMS), can effectively decouple energy and power consumptions, which preserves prosumer prerogative and privacy by allowing them to manage their own energy.

Using demand response for system operation is now possible at a new level. However, achieving the full potential requires aggregating DER into virtual power plants (VPPs). The existing VPPs that directly control individual batteries to achieve demand response allow the VPP operator to improve its position in the wholesale market.

Opportunities: To enable a proper two-sided market where VPPs both trade in the wholesale market and offer network support services, the DER aggregation problem needs to be formulated as an optimisation problem, akin to economic dispatch used in the wholesale market. To solve the problem and address privacy issues, a distributed approach is needed.

The distributed aggregation approach distributes the computation burden among prosumers agents where prosumers solve their own energy management problem and iteratively exchange messages with the aggregator until convergence. While this approach is feasible computationally, it does require a communication network with sufficient latency, reliability and bandwidth.

A framework: Changes are also required in the regulatory framework to support a future two-way market. Network companies do not have a contractual relationship with customers to manage their dispatchable solar electricity. If they were to use prosumer-owned DER for-network support, the regulatory framework would need to shift from the current regulated cost-plus compensation model towards a model that encourages the provision of new products and services.

To realise these opportunities, network companies will need to work together with DER aggregators and retailers to facilitate distribution energy markets with full prosumer participation. The newly developed market platforms will enable the monetisation of new products and services across the value chain.

Further details are available at:

<https://www.sydney.edu.au/content/dam/corporate/documents/faculty-of-engineering-and-information-technologies/industry-and-government/the-warren-centre/vpp-white-paper-the-warren-centre.pdf>

From the Gulbali Institute of Agriculture, Water and Environment (CSU)

Australian insect industry takes flight with \$2M program of research

The five-year program of research, officially launched at the University of Adelaide's Waite campus today, is focused on developing best-practice guidelines and industry standards, market development and consumer education and building industry capacity.

Professor Kerry Wilkinson from the University of Adelaide's School of Agriculture, Food and Wine has assembled a research team that includes experts from Charles Sturt University, CSIRO, University of Melbourne, University of Western Sydney, University of South Australia, University of Western Australia and behavioural science company, Evidn.

"For more than 100 years, agricultural research conducted at the University of Adelaide has broken new ground in fields spanning soil science, plant breeding, animal production and food science," Professor Wilkinson said.

"We look forward to working with the insect industry to help realise the benefits that insects offer – from valorisation of agri-food waste, to meeting increased protein demands, and reducing pressure on precious natural resources."

Insect Protein Association of Australia Chair and insect industry pioneer, Luke Wheat said the program of research would address current and future industry challenges.

"This research program is a significant opportunity for the domestic insect industry to unlock market access and increase scale," Mr Wheat said.

"This will be achieved through focus areas such as industry risk assessments, new product development and validation and regulatory review. Importantly, the work will be underpinned by robust, data driven, research conducted by some of the best universities in the country."

AgriFutures Australia Managing Director, John Harvey said the planned work was guided by the Australian Insect RD&E Plan, in consultation with producers through the Insect Protein Association of Australia, to support the long-term growth and viability of the Australian insect industry.

“Insects have the ability to convert organic waste into high-value protein and other valuable compounds such as oils and can be used in a range of products including animal feeds, fertilisers, pharmaceuticals and even human food products,” Mr Harvey said.

“Insects such as black soldier fly larvae, crickets and mealworms are rich in protein and have high micronutrient profiles. Insect farming is also more sustainable than many other forms of protein production as it requires much less water, has a smaller physical footprint and creates fewer greenhouse gas emissions.”

Further details are available at:

<https://agrifutures.com.au/news/australian-insect-industry-takes-flight-with-2m-program-of-research/>?

From CEDA

Nuclear energy is an emissions detour Australia doesn't need

By Matt Kean (March 2025)

With our busy lives, it can be tough to look beyond next week, let alone focus on seemingly distant dates like 2050.

And so, when CSIRO, the Climate Change Authority and other organisations urge governments to stay the net-zero emissions course, it's easy to dismiss a mid-century goal as something we can defer to another day.

But it really does matter how Australia and other nations get to that goal.

The impact of greenhouse gases stems from their accumulation in the atmosphere. They build up over time because of the amount we produce in any given year. We can't just pollute away as usual until 2049 then (miraculously) eliminate those emissions the following year and declare success.

Just as many families are battling to manage their own budgets, there's also a carbon budget in the background that's ticking up. Scientists have a good handle on how much we have emitted and how much more we can pump out before our goal of keeping global temperature increases well below 2°C recedes beyond reach.

The remaining budget isn't big, and that's why we need to start reducing emissions as far as possible, as soon as possible.

This is what drives the Climate Change Authority in our work: guiding Australia towards emissions reductions that are ambitious, achievable and in our national interest.

Just as importantly, we need to sound the alarm when Australia risks going off track with policies or plans that would add to national emissions. That's what we've done by publishing a report examining the impact on Australia's emissions of incorporating nuclear power into our energy mix.

Where other analyses have probed the challenges - from nuclear's high costs to the regulatory, legal and scientific hurdles to clear – our analysis examined how Australia's emissions trajectory would change.

And change it would: the nuclear pathway could blow out national emissions by more than 2 billion tonnes in the next 25 years.

Uranium-powered plants couldn't come online until sometime in late 2030, meaning our ageing and increasingly unreliable coal generators would have to chug along much longer.

Investment in renewable energy would also likely diminish, as the rhetoric around so-called “always-on” nuclear plants and policy uncertainty undermine confidence and the business cases for wind and solar farms.

Renewables are already the cheapest new-build replacement for fossil fuels, an advantage that improves every year as the price of solar panels and wind turbines tumble. Concerns about the reliance on weather-dependent energy sources are also being alleviated by the rapidly declining cost of big batteries.

If we don't take advantage of these options and wait for nuclear instead, emissions in the electricity sector alone would swell by more than 1 billion tonnes. Given Australia's annual carbon pollution is now about 440 million tonnes, that would be like adding a couple of years of extra pollution to our national tally.

But the power sector is just one part of the emissions equation, even if it does account for the largest chunk at about one-third of national carbon pollution.

Our future economy will be driven by zero-emissions electricity – literally, in the case of electric vehicles. Industry and homes will also increasingly move away from gas as cheaper, cleaner options become available. That's the pathway the Australian Energy Market Operator deems best for cutting emissions, reducing energy bills and delivering a reliable energy system out to 2050.

The nuclear proposal assumes those necessary and beneficial changes outside the power sector also happen far more slowly. That's the only way it avoids huge gaps in energy supply during the long wait for reactors to be built. It's a good modelling trick, but absolutely not a plan for a thriving clean economy.

Further details and the full report are available at the links follow:

<https://www.ceda.com.au/newsandresources/opinion/climate-environment-emissions-reduction/nuclear-energy-is-an-emissions-detour-australia-doesn%E2%80%99t-need>

From the Productivity Commission

How Australia can seize the circular economy opportunity

Productivity Commission (April 2025)

Australians are finding innovative ways to use materials more sustainably and efficiently but are being held back by complex and inconsistent regulations.

The interim report of the Productivity Commission's inquiry into the circular economy, *Australia's circular economy: Unlocking the opportunities*, finds that despite an increased focus from business, government and the community, progress towards a more circular economy has been slow.

A circular economy aims to use materials and products more sustainably and efficiently through activities such as designing products to use less materials, extending product lifespans via reuse and repair, and recycling and recovering materials to reduce waste.

'We heard from businesses, communities, and researchers who are exploring how to use materials more efficiently, convert different types of waste into valuable products and to regenerate nature,' said Commissioner Joanne Chong.

'However, some face barriers such as prescriptive, outdated or inconsistent regulations, limited access to finance or insurance, and challenges accessing information and knowledge.'

The report welcomes recent government focus on the circular economy and urges sustained national leadership.

'Innovative sustainable practices, like prefabrication in construction, using organic waste to create energy, and repurposing old mine sites, are sometimes being stymied by out-of-date or overly complex regulation. Governments need to ensure that rules and guidelines support a safe shift to a more circular approach,' said Commissioner Alison Roberts.

Inconsistent regulation between governments also presents barriers for circular economy practices. Currently, states and territories have different rules around disposing e-waste, using recycled materials in construction and kerbside recycling, to name a few.

'Inconsistencies in regulations between governments are a recipe for red tape and frustration for businesses and consumers that can slow the uptake of circular practices. Getting governments on the same page will make sustainable choices cheaper and easier for everyone,' said Dr Roberts.

The report also recommends that governments provide consumers with more information about the durability and repairability of products.

'In the same way dietary information helps consumers make healthier choices, providing information on the durability and repairability of products could help consumers make more sustainable choices,' said Dr Roberts.

The growing challenge of e-waste highlights the role of circular economy practices.

'Australians generate e-waste at almost three times the global average, but this e-waste challenge also presents an opportunity, particularly as more and more rooftop solar panels and electric car batteries reach end-of-life,' said Ms Chong.

'Materials found in solar panels and electric car batteries can be valuable when recovered correctly. Government can coordinate cross-industry solutions to the e-waste issue that could benefit the economy and the environment.'

The circular economy relies on connections – whether between researchers and industry or between businesses. These connections can span across Australia or be concentrated in circular economy precincts or regions that can create benefits for local communities.

‘In cities and regions, we heard about businesses working together to develop new circular economy ideas, turn waste into wealth, and save on costs such as transport. The PC is considering ways for governments to enable these connections between organisations both close to and far from each other,’ said Commissioner Chong.

Key points:

- A circular economy aims to use materials and products more sustainably and efficiently, with economic, environmental and social benefits.
 - Circular activities include designing products to use less materials, extending product lifespans via reuse and repair, and recycling and recovering materials to reduce waste.
 - The benefits of circularity include more efficient use of the planet’s finite stock of natural capital to support economic and productivity growth; reduced harms to the environment, climate and biodiversity; and improved social outcomes such as health, amenity and intergenerational equity.
 - Some circular activities reduce materials use in ways that simultaneously benefit the economy, the environment and society. Others have trade-offs, such as lowering materials use but increasing carbon emissions (for example, if recycling requires transporting waste long distances).
- Despite some uptake of circular economy opportunities in Australia, progress has been slow.
 - Australia’s materials productivity, circularity rate and waste recovery rate have increased slightly over the past decade.
 - Barriers to adopting circular economy opportunities include high costs; prescriptive, outdated or inconsistent regulations; coordination challenges and difficulties diffusing circular innovations; and limited practical information on circular opportunities.
- Updating regulations to level the playing field for newer or less widespread technologies and capabilities would support the uptake of circular activities. Harmonising inconsistent regulations between jurisdictions would lower administrative costs and burdens for businesses undertaking circular activities across Australia.
- Governments can facilitate coordination and innovation diffusion by supporting information exchange platforms, adopting challenge-based innovation funding models, brokering businesses’ engagement with regulatory processes, and leveraging sustainable procurement policies and place-based initiatives. The Australian Government’s current leadership and coordination of product stewardship schemes could be expanded to products with higher-risk and/or higher-value waste streams.
- More information would enable better decisions about circular opportunities. For example, at the consumer level, product labelling schemes on repairability and durability would help people to make more informed purchases of sustainable products. At a higher level, monitoring the outcomes associated with materials use and circular activities would help governments and businesses identify opportunities and measure improvements.

Access the full report here:

<https://www.pc.gov.au/inquiries/current/circular-economy/interim/circular-economy-interim.pdf>

From the Business Insider Australia

A remote town is looking for a doctor

By Joshua Nelken-Zitser (March 2025)

- An Australian town is offering up to \$428,000 a year and rent-free accommodation to be its doctor.
- Julia Creek, Queensland, is a 19-hour drive from the nearest major city.
- Australia is facing a doctor shortage, prompting rural areas to offer competitive packages.

A remote town in the Australian outback is looking for a doctor. To sweeten the deal, the town is offering a generous salary, rent-free accommodation, and a car allowance.

The catch? You'd be the only doctor in an isolated town that is a 19-hour drive from the nearest major city — Brisbane.

The North West Hospital and Health Service is advertising for a senior medical officer in Julia Creek, Queensland, an outback town of about 550 people.

The job listing shows that the role would offer an annual salary of up to 680,277 Australian dollars, or about \$428,000. That's almost seven times the average Australian salary.

The position also includes rent-free accommodation, a motor vehicle allowance, and more than three weeks of annual professional-development leave.

"Your primary role will be as the sole doctor providing clinical care for the community," the listing said. That would include seeing patients in primary care clinics, on the ward, and in retirement homes.

It listed one of the perks as "no traffic jams or long commute here."

While there may be no long commutes, the town is far from urban life and its conveniences. It's so isolated that most high-school students there need to go to boarding schools.

The nearest small cities are Mount Isa, about a three-hour drive, and Townsville City, an over eight-hour drive.

Brisbane, the third-most-populous city in Australia, is over 1,000 miles away, or a 19-hour drive.

Back in 2022, Julia Creek put out a hiring call to fill the role. The listing went viral and attracted applicants from all over the world, with a doctor from Brisbane eventually chosen to fill the role. He's now leaving.

Australia is facing a growing shortage of general practitioners, with the government estimating a shortfall of thousands by 2048.

The situation is particularly bad in rural and remote areas, the country's Department of Health and Aged Care said in an August report.

Further details are available at:

<https://www.businessinsider.com/remote-town-doctor-offering-428k-free-rent-car-allowance-australia-2025-3>

From the RNZ New Zealand

Health NZ eyes \$1.8b cost for unpaid leave dating back 15 years

Jimmy Ellingham (May 2025)

More than \$334m has already been paid out to rectify some of the errors.

- Health NZ spends more than \$130 million on fixing Holidays Act compliance errors - errors that will cost \$1.8 billion
- It won't name the consultants and contractors who have received much of that
- Current staff due to receive what's owed to them by the end of the year
- Workers' unions says dates for that have already been pushed out.

Health New Zealand has spent more than \$130 million fixing errors with Holidays Act compliance, on top of the more than \$334m it has already paid out for those errors.

In total, it owes about \$1.8 billion to about 220,000 past and present staff - such as doctors, nurses and healthcare assistants - in backpay, stemming from the act's complicated requirements.

That comes at a time when there is unprecedented pressure on the health budget.

Eight years ago, the compliance problems were discovered in the payroll systems at the 20 district health boards that merged into Health New Zealand in 2022.

The errors stretched back to May 2010 and meant some employees weren't receiving their proper leave entitlements.

Health NZ confirmed on Monday it expected the errors to cost about \$1.8b - and last month it had paid out more than \$334m.

Now, information obtained by *Checkpoint* shows that, until the end of September, the organisation had spent almost \$130.1m on fixing these errors - money that doesn't go to staff affected by the payroll system errors.

About \$44.4m was spent on a "remediation partner" on the project to work through and correct the errors, \$34.4m on project contractors, \$26.4 on staff costs - such as those seconded to the project - \$13.7m on consultants and \$10.7m on "payroll system vendor costs".

Health NZ said it would complete payments to 90,000 present employees by the end of 2025, but workers' unions are reporting delays in the process. Health NZ will start working on payments to 130,000 former staff this year on a region-by-region basis.

Then-current "Auckland metro" staff were paid in mid-2023.

On Monday's *Checkpoint*, Health NZ northern region deputy chief executive Mark Shepherd refused to name which consultants and contractors had received most of the \$130m.

He said the work involved the likes of payroll experts, who were fixing systems to make them compliant, and that had so far happened in 15 out of the 20 payroll systems.

"This is an incredibly complicated project, where we're trying to return the money that's really deserved and owed to our staff.

"There's \$1.8b that we're trying to organise."

Health NZ interim chief human resources officer Fiona McCarthy said it inherited 20 different payroll systems from district health boards.

"Each payroll was set up differently, with different practices and local arrangements in place, and a majority were no longer suited for modern payroll requirements," she said.

"The complexities of the Holidays Act, the size of the workforce, the hours people work and the variety of employment arrangements, as well as the state of the payroll systems and processes, all make this a very challenging programme of work."

New Zealand Nurses Organisation delegate Tracy Chisholm said she understood the way the process was being dealt was reviewed, when the government changed in 2023, so she wondered if there was duplication in that \$130m spend.

"It makes a mockery of the statement, 'There's no more money for health'. It makes a mockery of, 'We have a limited budget'.

"It makes a mockery of, 'We can't afford to give you any more than maybe an up to 1 percent pay increase, but over the last how-many years, we've spent \$130m on correcting errors that we've made', so you can correct your own errors, but you can't actually pay the staff that are currently employed."

Chisholm said the dates staff were told they'd receive their Holidays Act entitlements were often pushed back.

Further details are available at:

<https://www.rnz.co.nz/news/national/560741/health-nz-eyes-1-point-8b-cost-for-unpaid-leave-dating-back-15-years>

THE CONVERSATION

From GPS to weather forecasts: the hidden ways Australia relies on foreign satellites

Cassandra Steer, Australian National University

You have probably used space at least 20 times today. Satellites let you buy a coffee with your phone, book a rideshare, navigate your way to meet someone, and check the weather.

Satellites are also essential for monitoring floods, cyclones and bushfires, and supporting the people they affect. Farmers depend on satellite data, too, as does everyone trying to understand and tackle climate change, not to mention our military.

Yet Australia's access to space services depends almost entirely on satellites owned and run by foreign governments and companies. In an increasingly uncertain world, having our own sovereign space technology is becoming even more important for security.

But what exactly do we need to secure? And how can space help us do it? My colleagues and I at the Australian Centre for Space Governance have thought through these questions and presented them in a policy paper series – and we have some recommendations for the government.

Space services are essential

Since 2022, the Australian government has considered space technology to be “critical infrastructure”. In other words, if the space-based services we use were destroyed or disrupted, it “would have a debilitating impact on Australia’s defence and national security, a destabilising effect on the population, and cause significant damage to the economy”.

However, Australia is entirely dependent on foreign partners for space-based services such as communications and Earth observation.

Another crucial kind of satellite-powered service is “position, navigation and timing” – things like GPS, which is owned and operated by the US government. Even a temporary loss of these services could pose significant risks to Australia’s telecommunications and energy systems, as well as disaster response.

According to Australia’s 2024 National Defence Strategy, space capabilities are “equally as important as the maritime, land and air domains”. But we are in many respects simply users of space infrastructure that belongs to partner countries for our military needs. There are opportunities to increase our role in these partnerships if we place more emphasis on how Australia can be a contributor.

An uncertain world

Almost all the satellite data that supports our agriculture, banking, transport, climate monitoring, bushfire and flood response – and connects rural, remote and regional Australians – comes from the US, Europe and Japan. This dependency poses significant risks.

If any of those countries have to prioritise their own national needs in a natural disaster – such as the Sea of Japan earthquake in January last year – we might lose access. Even temporary loss of service can be disruptive, such as the temporary outage in 2023 of a UK satellite that impacted farmers in Australia and New Zealand.

The same might happen if any of those countries stopped providing data for political or national security reasons.

These risks are only increasing as our dependency on satellite services grows, and our relationship with the United States may become less certain.

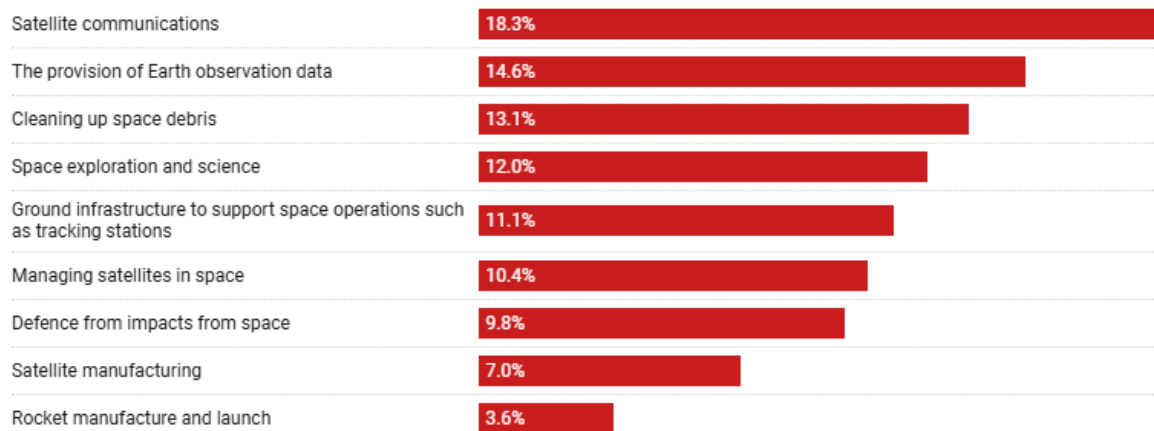
What do we want from space?

Many of Australia’s international partners are also questioning their dependence on the US, and prioritising their domestic needs. Many have national space policies, or at least a clear idea of what sovereign space capabilities they want to invest in. This is what Australia needs, too.

Greater cooperation on new space technologies could help our shared interests with our neighbours. Obvious areas include regional security, climate response, supporting agriculture, and internet connectivity needs.

One obstacle, as we discovered when we ran a national public opinion survey last year, is that Australia doesn't have a clear vision of what it wants from space.

Respondents' highest ranked priority for space industry development



[Source: <https://theconversation.com/>]

In government, too, there is little shared understanding of how satellites and related infrastructure feed into our national priorities and needs.

At present, thinking about space is usually the domain of specialists in government. But a better option would be “mainstreaming” space – making it part of the everyday, business-as-usual thinking of policymakers across government.

More on this story is available at:

<https://theconversation.com/from-gps-to-weather-forecasts-the-hidden-ways-australia-relies-on-foreign-satellites-256440>

Is the pope a mathematician? Yes, actually – and his training may help him grapple with the infinite

Humans are finite creatures. Our brains have a finite number of neurons, and we interact with a finite number of people during our finite lifetime. Yet humans have the remarkable ability to conceive of the infinite.

This ability underlies Euclid's proof that there are infinite prime numbers as well as the belief of billions that their gods are infinite beings, free of mortal constraints.

These ideas will be well known to Pope Leo XIV since before his life in the church, he trained as a mathematician. Leo's trajectory is probably no coincidence since there is a connection between mathematics and theology.

Infinity is undoubtedly of central importance to both. Virtually all mathematical objects, such as numbers or geometric shapes, form infinite collections. And theologians frequently describe God as a unique, absolutely infinite being.

Despite using the same word, though, there has traditionally been a vast gap between how mathematicians and theologians conceptualise infinity. From antiquity until the 19th century,

mathematicians have believed that there are infinitely many numbers, but – in contrast to theologians – firmly rejected the idea of the absolute infinite.

The idea roughly is this: surely, there are infinitely many numbers, since we can always keep counting. But each number itself is finite – there are no infinite numbers. What is rejected is the legitimacy of the collection of all numbers as a closed object in its own right. For the existence of such a collection leads to logical paradoxes.

A paradox of the infinite

The most simple example is a version of Galileo's paradox and leads to seemingly contradictory statements about the natural numbers 1,2,3....

First, observe that some numbers are even, while others are not. Hence, the numbers – even and odd – must be more numerous than just the even numbers 2,4,6.... And yet, for every number there is exactly one even number. To see this, simply multiply any given number by 2.

But then there cannot be more numbers than there are even numbers. We thus arrive at the contradictory conclusion that numbers are more numerous than the even numbers, while at the same time there are not more numbers than there are even numbers.

Because of such paradoxes, mathematicians rejected actual infinities for millennia. As a result, mathematics was concerned with a much tamer concept of infinity than the absolute one used by theologians. This situation dramatically changed with mathematician Georg Cantor's introduction of transfinite set theory in the second half of the 19th century.

Cantor's radical idea was to introduce, in a mathematically rigorous way, absolute infinities to the realm of mathematics. This innovation revolutionised the field by delivering a powerful and unifying theory of the infinite. Today, set theory provides the foundations of mathematics, upon which all other subdisciplines are built.

According to Cantor's theory, two sets – A and B – have the same size if their elements stand in a one-to-one correspondence. This means that each element of A can be related to a unique element of B, and vice versa.

Think of sets of husbands and wives respectively, in a heterosexual, monogamous society. These sets can be seen to have the same size, even though we might not be able to count each husband and wife.

The reason is that the relation of marriage is one-to-one. For each husband there is a unique wife, and conversely, for each wife there is a unique husband.

Using the same idea, we have seen above that in Cantor's theory, the set of numbers – even and odd – has the same size as the set of even numbers. And so does the set of integers, which includes negative numbers, and the set of rational numbers, which can be written as fractions.

The most striking feature of Cantor's theory is that not all infinite sets have the same size. In particular, Cantor showed that the set of real numbers, which can be written as infinite decimals, must be strictly larger than the set of integers.

The set of real numbers, in turn, is smaller than even larger infinities, and so on. To measure the size of infinite sets, Cantor introduced so-called transfinite numbers.

The ever-increasing series of transfinite numbers is denoted by Aleph, the first letter of the Hebrew alphabet, whose mystic nature has been explored by philosophers, theologians and poets alike.

Set theory and Pope Leo XIII

For Cantor, a devout Lutheran Christian, the motivation and justification of his theory of absolute infinities was directly inspired by religion. In fact, he was convinced that the transfinite numbers were communicated to him by God. Moreover, Cantor was deeply concerned about the consequences of his theory for Catholic theology.

Pope Leo XIII, Cantor's contemporary, encouraged theologians to engage with modern science, to show that the conclusions of science were compatible with religious doctrine. In his extensive correspondence with Catholic theologians, Cantor went to great lengths to argue that his theory does not challenge the status of God as the unique actual infinite being.

On the contrary, he understood his transfinite numbers as increasing the extent of God's nature, as a "pathway to the throne of God". Cantor even addressed a letter and several notes on this topic to Leo XIII himself.

For Cantor, absolute infinities lie at the intersection of mathematics and theology. It is striking to consider that one of the most fundamental revolutions in the history of mathematics, the introduction of absolute infinities, was so deeply entangled with religious concerns.

More on this story is available at:

<https://theconversation.com/is-the-pope-a-mathematician-yes-actually-and-his-training-may-help-him-grapple-with-the-infinite-256721>

CONFERENCES and STUDY OPPORTUNITIES

ANZRSAl 2025 Conference

The ANZRSAl 48th Annual Conference will be held at the University of Waikato in New Zealand. Further details are available at the ANZRSAl website.

2025 RSA Regional Futures Conference

The RSA Regional Futures Conference 2025 presents an important opportunity to champion a positive agenda for regional change and development. The event will provide an important platform to discuss and debate regional futures, establish new connections, and assess options for practitioners and policymakers working towards brighter regional futures.

The conference organisers are keen to attract papers and sessions which identify new connections, address broad research and policy agendas, and include contributions from any discipline offering insights at local and regional levels. Papers which are highly innovative, collaborative, international or multi-disciplinary are especially welcome.

Broad themes and key agendas the organisers are keen to facilitate discussion around that include, but are not limited to:

- New tools, data, and methodologies for studying regions and their interconnections.

- Regional policies in/for the majority world.
- Technological change, innovation and entrepreneurship.
- Rethinking the concept of regions in the context of (de)globalisation, digital transformation, and transnationalism.

Special Sessions

We invite scholars, practitioners, and policymakers to submit **session proposals** for inclusion in the upcoming conference programme. Sessions should be fully formed and include all proposed speakers and their presentation titles. We particularly welcome sessions that are interdisciplinary, internationally collaborative, and align with the conference's themes. This is a great opportunity to bring together voices around a shared topic and foster meaningful dialogue. Please ensure all speakers have confirmed their participation prior to submission. Sessions can be submitted through the conference portal (link above) using the Gateway Theme – Session Proposal.

After the general abstract submission deadline has closed, you will receive all abstracts submitted to your session for your review. After reviewing the abstracts, the next step will be to send the accepted abstracts in the order you wish to have them in your Special Session to the RSA. You must accept a minimum of four papers for your session to go ahead, if not, the papers will be redistributed into the general programme. The actual scheduling of the programme will then be done by the RSA.

Date & Location: London, UK, 13-14 November 2025.

More details are at <https://www.regionalstudies.org/events/2025-regional-futures/>

Regional Studies Blog

Professor Paul Dalziel, Executive Officer, ANZRSAl has recommended the Regional Studies Association Blog, which has been running since 2010. Each post is an easy-to-read piece between 500 and 750 words on a topical issue in regional studies.

The link is https://www.regionalstudies.org/category_news/rsa-blog/. A recent contribution that is relevant to ANZRSAl as we plan for the new post-CoVID normal is the following item: [Moving towards a new conference model? The rocky road to virtual conferencing](#), by Daniela Carl and Alex Holmes. Ashleigh Weeden talks about the 'right to be rural' during the CoVID epidemic in a contribution entitled [COVID-19 and Cottage Country: Exploring place, power, and policy in the 'right to be rural'](#).

CURRENT RESEARCH ABSTRACTS

ANZRSAL Abstract Alerts

To contribute to ANZRSAL Abstract Alerts email the editors a title, abstract, and citation.

Yogi.Vidyattama

Yogi.Vidyattama@canberra.edu.au

We would like to draw your attention to the abstracts from Australasian Journal of Regional Studies and a YouTube Channel 'Professor Joseph Drew's World of Local Government'

For the latter it can be found in:

<https://www.youtube.com/channel/UCXn5CI2x5h1cgEsaT8nLK9g/videos>

The whole purpose of the channel is to help local government help other people. So, please consider subscribing and sending the link on to colleagues.

In a few weeks' time Prof. Joseph Drew will start uploading videos by some of his colleagues from around the world which will provide people with new global insights into what can be done to make LG even stronger.

Does environmental, social, and governance disclosure affect financial performance? An empirical study of Southeast and East Asia commercial banks

Hung Manh Pham, Nham Linh Vuong, Dung Viet Tran, Minh Thi Hai Ngo, Trung Tien Le

Abstract: This research aims to investigate the impact of environmental, social and governance (ESG) disclosure on the financial performance of commercial banks operating in Southeast and East Asia. Specifically, this study examines a sample of 40 Southeast and East Asian banks from 2009 to 2021 to verify the influence of ESG initiatives and each environmental, social, and governance dimension on their performance. The results

indicate that ESG disclosure has an adverse impact on financial performance within the banking industry. However, upon closer examination, the associations between ESG dimensions present a mixture of favorable and unfavorable consequences. The positive effect of the governance pillar on bank performance is demonstrated by the findings. Conversely, the social and environmental aspects of ESG are inversely proportional to the banks' performance.

Measuring the financial stability sentiments and evaluating their impacts on financial soundness, financial stability, and the macroeconomy of Pakistan

Ateeb Akhter Shah Syed, Kevin Haeseung Lee, Mohsin Waheed, Sarah Saleh

Abstract: This paper measures the Financial Stability Sentiments Index (FSSI) for the economy of Pakistan, an interesting country case due to its resilient banking sector. We used a Natural Language Processing technique to quantify these sentiments from annual financial stability review reports published by the State Bank of Pakistan, central bank of Pakistan. The index captured events of high and low financial stress in Pakistan, such as the Global Financial Crisis and recent tightening by the Federal Reserve. Regarding the information content of our index, it serves as a leading indicator for selected indicators of financial soundness in Pakistan. Further, asymmetric analysis of the impact of financial stability sentiments on financial stability showed that improvements in the FSSI lead to a higher distance-to-default for two sets of diverse banking institutions in Pakistan, indicating improved financial stability as bank assets far outweigh their obligations. Finally, the index shows an intuitive and significant impact on selected financial soundness indicators as well as the real macroeconomic variables in Pakistan.

Nexus between rural poverty and environmental quality: empirical evidence from Indonesia

Sabrina Do Miswa, Fitri Kartiasih

Abstract: Two primary objectives of sustainable development goals are poverty reduction and environmental quality. Recent findings, however, point to a potential conflict between pursuing these two objectives. This study aimed to investigate the existence of a dilemma between rural poverty and environmental quality in Indonesia. Unlike previous studies, we focused on rural poverty and environmental quality index to examine the poverty-environmental degradation nexus. We also attempted to reveal the socio-economic dynamics that affect rural poverty and environmental quality. We used the data from 33 provinces of Indonesia between 2015 and 2022 and employed the system-generalized method of moments (SysGMM) approach. The results showed that rural poverty and environmental quality support trade-off relationships that improve environmental quality and increase rural poverty. Population density and income inequality hindered the improvement of environmental quality. Meanwhile, human development, rural labor wages, and information communication and technology (ICT) supported the improvement of environmental quality. Economic growth, electricity access, and ICT supported the alleviation of the rural poor. Therefore, the central and regional governments should make efforts to reduce income inequality and increase ICT access to simultaneously improve the quality of the environment and reduce rural poverty.

Mapping actor networks: shaping the dynamics of economic corridors through the lens of the Bioceanic Road Corridor

Ledys Franco, Miguel Atienza, Marcelo Lufin, Javier Revilla Diez

Abstract: Economic corridors are long-term projects that must address challenges beyond physical infrastructure to become fully operational. Most of these challenges, including institutional coordination, logistical integration, and creating favorable conditions for trade and investment, require complex networks of interaction among the corridor agents. This study analyzed the actor network within the Bioceanic Road Corridor (BRC) "Mato Grosso do Sul—Ports of northern Chile" to assess how their roles and interactions influence the development of the project. Based on 240 surveys and the application of social network analysis (SNA), we mapped key relationships within the BRC. Our contributions extend the analysis of economic corridors from a relational space perspective, highlighting the influence of key actors in shaping the development of these projects. Our findings reveal poor coordination between the private sector and subnational public agencies, threatening the corridor's success. Limited private sector involvement restricts opportunities for regional economic growth, investment, job creation, and trade. Additionally, weak coordination among subnational actors worsens institutional fragmentation, hindering the implementation of policies aligned with local needs. To avoid BRC becoming a "white elephant," institutional coordination must improve and incentives for private sector participation—such as public-private partnerships, tax incentives, and investment programs—are essential to unlock its potential for regional development.

Driving force behind the investment location choice of Chinese enterprises in ASEAN countries

Xinyu Wang, Bingqing Yu, Shuiying Lan, Li Hong

Abstract: With deepening cooperation between China and ASEAN countries, the driving force of Chinese enterprises' location choice for direct investment in ASEAN should not only

consider their own competitive advantages but also consider environmental and resource factors such as geography, economy and culture of the host country. Therefore, this paper first expounds on the location choice of Chinese enterprises' investment in ASEAN and then presents research hypotheses based on the enterprises' own experiences and the three proximities of geography, economy and social culture. A Probit regression analysis model is adopted to analyze the evolutionary driving force of Chinese enterprises' investment locations in ASEAN. The study reveals the following findings: First, Chinese enterprises' investments in ASEAN countries exhibit a "clustering-dispersal" pattern in industries such as energy, transportation and real estate forming industrial clusters of various ASEAN cities. Second, the attributes of multinational corporations, including corporate characteristics, geographical factors, economic factors, and cultural factors, significantly influence the expansion of the ASEAN investment network, and heterogeneous investment preferences exist across different regions.

Novel groundwater quality index (GWQI) model: A reliable approach for the assessment of groundwater

Abdul Majed Sajib, Apoorva Bamal, Mir Talas
Mahammad Diganta, S.M. Ashekuzzaman,
Azizur Rahman, Agnieszka I. Olbert, Md
Galal Uddin

Abstract: The groundwater is crucial for drinking, irrigation, river flows, lake levels, and ecosystem health. Regular monitoring and reporting of groundwater are required for sustainable aquifer management. The goal of this study is to assess the reliability of the newly developed Groundwater Quality Index (GWQI) model using water quality (WQ) data from 58 monitoring sites in three Irish domains. The study utilized the novel GWQI model which incorporates trace/heavy metals and a broad classification scheme to compute and nuanced interpretation of the GWQI

scores. The model's performance, encompassing uncertainty and sensitivity, was evaluated using nine ML/AI models. Most monitoring sites demonstrated a 'Fair' to 'Good' WQ rating, while the WFD suggested EPA approach (e.g., 'One Out, All Out'—OOAO) rated it from 'Good' to 'Poor'. This suggests only a few indicators breached WHO (2022) and EPA (2014) guidelines. In addition, the Gradient Boosting model with the OPTUNA optimizer outperformed in predicting groundwater quality with high accuracy ($RMSE^- = 0.73$, $MSE^- = 0.69$, $MAE^- = 0.41$, $PABE^- = 0.41$), efficiency ($MEF^- = 0.63$) and low prediction error ($PBIAS^- = 0.03$; $PREI^- = 0.02$); whereas the model high sensitivity ($R^2 \geq 0.91$) indicated the strong relationship between model input and output with less uncertainty ($< 2\%$). Compared to other exiting approaches, the GWQI model provides the accurate rating of groundwater quality, whereas the EPA approach misinterpreted the WQ in several monitoring sites in domain 2 (D02, D03, D07, D08, D10, D11, D12, and D13), and domain 3 (C01, C02, C05, C11, C15, and C17), respectively, without breaching number of indicators by following guidelines. Therefore, relatively the GWQI model shows outstanding performance to correct WQ classification in terms of reliability and reducing uncertainty in the groundwater quality assessment. However, the result of the research revealed that the GWQI model could be effective to classify groundwater quality more accurately. Since this study utilized single time-span dataset across various domains, it is suggested for future research to consider extended spatio-temporal resolution's of the domain including various anthropogenic stressors under different climate attributes. The research findings could be helpful to support the decision makers/policy makers/national and international stakeholders in order to promote sustainable groundwater quality management with less assessment errors using the GWQI model.

Regional Studies

Vol. 59, Issue 1, 2025

The role of social capital in territorial development: the case of a French post-industrial region

Anna Gerke & Yan Dalla Pria

<https://doi.org/10.1080/00343404.2022.2069237>

Abstract: This article analyses the role of social capital in territorial development by investigating the case of a post-industrial territory in France. We use semi-structured interviews with actors in the territory that are linked through a cluster network. The results are structured according to three dimensions of social capital (relational, cognitive and structural) and provide insights for policymakers and members of local business networks. Our study reveals micro-economic factors that lead to social capital formation in a specific territory and sheds light on the impact of social capital on territorial development.

Technology, resources and geography in a paradigm shift: the case of critical and conflict materials in ICTs

Andreas Diemer, Simona Iammarino, Richard Perkins & Axel Gros

<https://doi.org/10.1080/00343404.2022.2077326>

Abstract: Critical and conflict materials (CCMs) are providing an important material infrastructure for recent technological shifts. Relying on text analysis of US Patent and Trademark Office (USPTO) data, this exploratory study examines the technological and geographical linkages between technological paradigms and selected CCMs. Our descriptive analysis finds evidence of a clear association between information and communication technologies (ICTs) and CCM intensity over time, and of a striking resource–technology divide between value-creating and

–extracting activities across the Global North and the Global South and their regions. The paper emphasizes the need for a more critical, spatially sensitive approach to studying resource-based technological change to expose its uneven development consequences.

Spatio-sectoral heterogeneity and population–employment dynamics: some implications for territorial development

Luisa Alamá-Sabater, Miguel Á. Márquez & Emili Tortosa-Ausina

<https://doi.org/10.1080/00343404.2022.2088725>

Abstract: Grounded in the general equilibrium framework of regional adjustment models, this paper studies how the spatial distribution of sectoral employment can affect the intra-regional spatial location of a population, and so affect territorial development. Although spatial interactions, spatial heterogeneity and sectoral heterogeneity have been introduced in these models, no empirical studies reveal how spatio-sectoral heterogeneity affects the intra-regional distribution of population and jobs. This paper explores this effect through a complex set of interdependencies among the regional population, employment in the regional economic sectors and their respective regional neighbours within the different regional typologies (urban, semi-urban and rural areas), as suggested by the concept of proximity developed by Torre in 2019. We use a system of simultaneous equations to focus on the phenomenon of rural depopulation for the 542 municipalities of the Valencian region of Spain. The results provide evidence for the relevance of spatio-sectoral dynamics, suggesting that reversing depopulation in rural areas depends strongly on the services sector.

Local currencies for territorial development: lessons from a national survey in France

Jérôme Blanc, Marie Fare & Oriane Lafuente-Sampietro

<https://doi.org/10.1080/00343404.2022.2120974>

Abstract: This article analyses how convertible local currencies (CLCs) contribute to their circulating territory, in the case of France, where a systematic survey was held in 2019–20. It builds a framework in which CLCs contribute to a territorialized infrastructure and assume functions of territorial intermediation, thus supporting a territorial development process. It examines how the CLC organizations define their territory, before assessing the territorial development they carry, with evidence about their size, role in the territorial coordination of actors and governance issues. This assessment raises doubts about their actual contribution to territorial development, while possible achievements are discussed.

Regional Science Policy and Practice

Volume 17, Issue 4 (April 2025)

Inequality of opportunities, institutional distrust, and beliefs about socio-economic outcomes in the Western Balkans

Elvisa Drishti, Ildir Duhanxhi, Nevila Mehmetaj, Drini Imami, ... Arjola Halluni

<https://doi.org/10.1016/j.rspp.2025.100174>

Abstract: This paper explores how inequality of opportunities (IOP) and institutional distrust shape beliefs about social and economic outcomes in the Western Balkans. Drawing on data from the Public Opinion Survey (2017–2021) conducted by the Regional Cooperation Council, we apply a robust multivariate regression framework to assess both the direct and interaction effects of these factors. Our findings demonstrate that higher levels of IOP are strongly associated with perceptions of social and economic unfairness, while institutional distrust amplifies these perceptions, revealing a dynamic interplay between socio-economic disparities and public confidence in institutions. The study highlights

the critical need for targeted policy measures to mitigate IOP and rebuild institutional trust, which could fundamentally reshape public beliefs and foster equitable growth. Policymakers are urged to prioritise reducing socio-economic disparities and enhancing institutional transparency and accountability to promote trust and sustainable development in the region.

Stochastic frontier analysis and agricultural typologies: Applied to Mexico's sugarcane industry

Araceli Ortega Díaz, Miguel Flores Segovia, Noé Aguilar Rivera

<https://doi.org/10.1016/j.rspp.2025.100173>

Abstract: This study identifies Mexican sugarcane-planting micro-regions with different productive potential (PP), technical efficiency (TE) and poverty, to propose targeted impact investments. Central to our analysis are three innovative approaches: estimating a Stochastic Production Frontier (SPF) model to precisely measure TE and PP, using spatial analysis including the climate and weather of the microregions, and incorporating stakeholder validation to ensure the real-world applicability of our findings. By integrating data from the 2019 National Agricultural Survey (Encuesta Nacional Agropecuaria - ENA), we investigated sugarcane production in Mexico, highlighting high-priority areas (HP) for investment, characterized by municipalities with medium to high PP, low to medium TE, and high-income poverty. Our findings identified 56 microregions across Oaxaca, Puebla, San Luis Potosí, and Veracruz as pivotal for strategic investments, which vary according to each region's specific needs—from technological advancements and improved transportation infrastructure to the establishment of competitive rural banks. This multifaceted approach provides an in-depth assessment of sugarcane production while identifying high-priority areas for targeted short- and long-term investments to boost

productivity, drive economic development, and reduce poverty.

Papers in Regional Science

Volume 104, Issue 2 (April 2025)

The effect of neighborhood composition on ethnic discrimination in the labor market

Sylvain Chareyron, Yannick L'Horty, Pascale Petit

<https://doi.org/10.1016/j.pirs.2024.100076>

Abstract: In this article, we explore the relationship between ethnic discrimination and neighborhood composition using a field experiment involving employment applications in the fast-food industry in metropolitan France. First of all, we note a high overall level of discrimination in hiring on the basis of ethnic origin. Second, we merged the experimental dataset with census data at a fine geographical level so that we could explore the link between ethnic discrimination and the ethnic composition of the neighborhood. We find that the relationship between ethnic discrimination and the proportion of non-French nationals in a neighborhood is non-linear and negative.

Cohesion policy and domestic fiscal expenditure in Italian regions: A sectoral ex-post assessment of the additionality principle

Fabio Mazzola, Debora Gambina

<https://doi.org/10.1016/j.pirs.2024.100078>

Abstract: The additionality principle of the European cohesion policy was verified ex-ante by the European Commission and was eliminated starting from the 2021–27 programming period. However, the cohesion treatment may have ex-post reduced, in some cases, national spending and the decision to eliminate the principle should have been taken under a case-by-case scrutiny. The application of the additional principle has been suggested for more recent anti-crisis fiscal policy

programmes and some authors have claimed a reintroduction of it for cohesion policy. This paper deals with an ex-post sector-by-sector evaluation of the additionality principle in the European cohesion policy with respect to domestic fiscal policy during the two most recently concluded programming periods (2007–13 and 2014–20). The application is carried out for the Italian regions. In particular, we look at how the relationships between cohesion policy and domestic non-cohesion fiscal policy may differ for specific sectors (education, culture, transportation and environment) employing a regional panel framework and addressing the issues of endogeneity and reverse causality explicitly. We construct a unique database which combines two sources of information available for the Italian case. The first includes information on cohesion projects while the other refers to the regionalized public expenditure obtained by consolidating all different sources of spending. We found strong sectoral heterogeneity in the compliance with the additionality principle. Cohesion policy in education and environment appears to display a substitution effect. On the contrary, cohesion policy seems more additional to domestic expenditures in transportation infrastructures. The analysis found some differences in the compliance with the additionality principle also among Italian regions. Sectoral and regional heterogeneity should be taken into account in practical policymaking.

Special economic zones and land misallocation: Evidence from Chinese cities

Yi Cui

<https://doi.org/10.1016/j.pirs.2025.100084>

Abstract: This study examines the impact of China's special economic zones (SEZs) on land misallocation, primarily using city-level data for China from 2003 to 2018. The findings indicate that establishing SEZs exacerbates land misallocation by over-allocating land to cities, resulting in an average

annual loss of 0.22% of real urban GDP. After establishing SEZs, local governments change their land supply strategies by adjusting supply mode, object, and preference, reducing land allocation efficiency. Thus, the bundling of SEZs and government intervention is an essential cause of land misallocation. Furthermore, the geographical location of SEZs affects land allocation efficiency through the spatial form of cities. Its spatial separation from the core urban area is an essential cause of land misallocation. This study has important implications for more effective planning and implementation of SEZs.

Australasian Journal of Regional Studies
Vol. 30, No. 1

FIRST HOME BUYERS' PURCHASING AFFORDABILITY IN POST-COVID ERA: A MICROSIMULATION COMPARISON OF FIRST HOME GUARANTEE AND HELP TO BUY SCHEME IN QUEENSLAND

GUL RUKH SHAKIR

PAGE NUMBER - 3

Abstract: The surge in house prices, post COVID, presented a tremendous challenge to the Government in Australia. Enhancing purchase affordability, especially for new entrants of the housing market, that is the first home buyers, is the top priority for the current government. Several housing programmes have been proposed which aim to target and help low- and moderate-income families into homeownership. This paper analyses features of two of these programmes, namely "First home guarantee scheme" (FHGS) and "Help to buy scheme" (HTBS). Using Queensland as a case study, a housing microsimulation model is used to conduct a comparative analysis of these two programmes. The impact of these two programmes has been evaluated on the basis of their impact on the number of potential first-time buyers who can achieve home ownership. Results suggest that the

FHGS can be more helpful in increasing rates of homeownership than the HTBS.

DRIVERS OF HOUSING DEMAND AND LAND VALUES IN REGIONAL NEW SOUTH WALES: INSIGHTS FROM SUBMISSIONS TO THE NEW SOUTH WALES REGIONAL HOUSING TASKFORCE 2022

VINCE MANGIONI, JANET GE, SONG SHI, SHANAKA HERATH

PAGE NUMBER - 25

Abstract: Residential land values and housing prices across regional Australia have outpaced those of capital cities over the past five years, primarily driven by forces of market demand. This paper commences with a review of the movement in land values and examines the key factors that have driven demand for residential land and housing in regional New South Wales (NSW). By reviewing submissions to the NSW Regional Housing Taskforce 2022, the paper explores the feedback and factors that have impacted, and will continue to impact, land values and housing demand in the medium term. Through thematic analysis, this paper finds a shift towards lifestyle living and second dwelling ownership and a change in workforce demand have increased the demand for regional housing. This is compounded by the demand for short-term worker accommodation and the conversion of long-term rentals into short-term stays. These factors have profoundly increased demand for housing and residential land values across regional NSW.

WILL EFFICIENCY IN HEALTH EXPENDITURE IMPROVE CHILD HEALTH OUTCOMES? AN ENQUIRY ACROSS LMICs USING TWO-STAGE BOOTSTRAP DATA ENVELOPMENT ANALYSIS

PINAK SARKAR, NUTAN SHASHI TIGGA

PAGE NUMBER - 48

Abstract: This study measures the efficiency of health expenditures in improving child mortality outcomes, one of the targets of the Sustainable Development Goals (SDG). Bootstrap data envelopment analysis was used to evaluate the efficiency of 127 low- and middle-income countries (LMICs) from 2010 to 2019. We found that 45 percent of the LMICs operated at decreasing returns to scale (DRS), implying that an increase in inputs could generate only a smaller increase in health outcomes, whereas 53 percent exhibited increasing returns to scale, indicating that an increase in health expenditure could lead to a greater increase in health outcomes. The findings of the study also have greater policy implications. It suggests that countries which perform at DRS could deliberate on reallocating resources to improve their health outcomes since these countries may not benefit from an increase in the input level as their output will not increase at the same rate. Therefore, governments should focus on improving efficiency rather than increasing health expenditure, thereby enabling the achievement of the SDG target.

COVID-19 AND THE FINANCIAL SERVICES SECTOR—EVIDENCE FROM FOUR REGIONS IN THE U.S.

HUONG NGUYEN

PAGE NUMBER - 69

Abstract: How has COVID-19 impacted on the financial services sector? This paper attempts to answer the question by investigating the sector revenues across the four regions in the U.S. My findings show that there are negative impacts of COVID-19 on the sector revenues. Specifically, regions with a larger financial services sector are more likely to be affected by the pandemic. To rebuild more resilient financial systems, it is imperative to understand the key factors contributing to the differences of negative impacts on those regions. By employing multiple discriminant analysis (MDA), the results indicate that

before COVID-19, labour determined revenue differences across regions, while during the pandemic, local, state, and federal taxes played the key roles. My findings and discussions aim to inform policy makers in decision-making processes during this outbreak.

ABOUT ANZRSAL

ANZRSAL Council Notes

Council has planned for the 2024 conference in Canberra at the Ann Harding Conference Centre in University Canberra and improving access to and ranking of AJRS and the website. Conference participants gain access to support, encouragement, and relevant experience. AJRS offers an opportunity for publication. Council acknowledges Rolf Gerritsen's contributions to ANZRSAL and proposes his name as a lifetime member of ANZRSAL.

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