

# School of Economics

## Research Impact



# Power play: reducing the fallout of the US–China trade war

**Shifting power dynamics in global politics pose a major threat to Australia's peace and prosperity.**

In particular, the US-China trade war has the potential to create significant difficulties for Australia as two of our strongest trade partners go head-to-head, but also presents potential opportunities for strengthening regional relationships.

Associate Professor Renuka Mahadevan, an applied economist and Asia-Pacific expert, is using economic models to discover ways to minimise harm and explore opportunities in the wake of the US-China trade war.

"In recent years, the US has been rapidly withdrawing from trade agreements," Associate Professor Mahadevan said.

**"Tensions are increasing in trade relations between the US and China – and this has a flow-on effect in the Asia-Pacific."**

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The two super powers are caught in a vicious battle of trade barriers and import tariffs.

"The US has slapped tariffs on US\$250 billion worth of Chinese products and has threatened to impose another US\$267 billion," Associate Professor Mahadevan said.

"China, for its part, has set tariffs on US\$185 billion worth of US goods and is threatening measures that would affect US businesses operating in China."

Associate Professor Mahadevan is working with Anda Nugroho from the Indonesian Ministry of Finance and together they are using data and economic modelling to analyse the effects of regional trade agreements such as the Regional Comprehensive Economic Partnership (RCEP).



**Associate Professor Renuka Mahadevan**

"In the wake of the US-China trade tensions and other events such as BREXIT that impact international trade relations, policymakers are turning to regional trade relationships," Associate Professor Mahadevan said.

"There is the potential for China's Asian neighbours to benefit from some trade diversion due to growing trade tensions with the US.

"However, using the imposed tariff schedules, we found the global gains provided by the RCEP are not enough to overcome the negative impacts of the US-China trade dispute," Associate Professor Mahadevan said.

"There is an opportunity for further investigation of regional trade agreements and we can use empirical economic research to explore the feasibility and potential impact of these deals."

# Curbing the cost of bad behaviour

**Researchers have created a revenue raising mechanism that operates like a 'Robin Hood tax' to help address climate change.**

By creating a new way to initially allocate permits, a team of environmental economists led by Dr Ian MacKenzie have managed to make a 'good tax' that makes environmentally unfriendly actions more costly, while generating revenue for other sources like healthcare.

"Economics can be applied to help the environment," Dr MacKenzie said.

"It can be used to help create better models and methods that have a real world impact and stimulate discussions with policy makers.

**"Climate change is one of the biggest threats we face as a global society, and this model, while not a complete solution, makes organisations mindful of their environmental impact and encourages them to decrease it."**

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This work on the design and implementation of pollution regulation looks specifically at pollution auctions and how current systems fail to achieve desired outcomes.

These auctions allow firms to purchase a limited number of permits that enable them to complete certain regulated actions that are considered to be pollutive.

"When working efficiently, pollution auctions support a 'good tax' so you can distort people's behaviour away from doing bad things like pollution and generate revenue that can be used for positive change," Dr MacKenzie said.

However in his research, Dr MacKenzie was able to demonstrate that mechanisms used to control the price in US auctions were not working as expected.



Dr Ian MacKenzie

"What we have seen in the US pollution auctions is that the cost containment mechanism increases not decreases cost, paradoxically," he said.

"This was not ideal because when this tool is more efficient it generates more revenue – revenue that can be used for schools or hospitals etc.

"A lot of current models have flaws – they distort price and they don't generate revenue – our research is informing how we can design new improved permits."

To address this problem the researchers have designed a new revenue raising mechanism via an auction.

"We hope this solution will achieve more efficient and effective regulation to solve one of the world's most pressing issues," Dr MacKenzie said.

# From paddock to productivity

**Fruit and vegetables are helping bridge divides and boost prosperity in Pakistan through a cross-disciplinary, cross-cultural project spearheaded by Australian researchers.**

By examining better approaches to marketing these family staples and other agricultural practices, researchers have been able to boost productivity and stimulate the wider economy.

Dr Thilak Mallawaarachchi, a principal research fellow on the project which is also led by researchers at Monash University, said the project is helping the rural economy develop and prosper.

**“Pakistan has the potential to produce enough horticulture for local communities and international trade – but current practices aren’t sufficient to meet their ability,” Dr Mallawaarachchi said.**

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“The supply system is so outdated it cannot cater to international markets – in fact the horticulture systems and policies we are addressing date back to colonial times,” he said.

“The inefficiencies in the system impacts farmers’ ability to sell and lots of food goes to waste,” he said.

The project is already helping to reform processes and aims to provide multiple benefits to the people of Pakistan by addressing outdated marketing systems and policies.

“A lot of the fruit and vegetables produced in Pakistan are sent to market with little or no sorting and go to waste,” Dr Mallawaarachchi said.

“If marketing activities can be streamlined, this loss could be curbed and many jobs could be created, especially benefiting women and children,” he said.

“In the long run, this provides a path for diversifying the economy by freeing up women and children to pursue education and enables agricultural workers to upskill for other professions.



**Dr Thilak Mallawaarachchi**

“The impact of this work is far-reaching, it will benefit millions,” he said.

The research team worked hand-in-hand with local experts to ensure objectives were carried out effectively to match the local context.

“We incorporated local stakeholders and universities to allow the support necessary to ensure their representation in important policy committees and the policies reflected the needs of the local population. The task now is to help them implement effectively,” Dr Mallawaarachchi said.

“For markets to work well governments needs to support them with good policy.”

# Valuing land to deliver value to the community

**Land is one of the most valuable assets in Australia and the way it is valued impacts the taxes everyday citizens pay, and the locations valuable public resources like schools and hospitals are placed.**

Attaching a value to land that is fair and equitable has presented a key challenge to local and state governments and getting this exercise wrong creates inequities for everyday Australians.

To make this process fairer for citizens and to decrease the burden for governments, Professor Alicia Rambaldi is building new economic models to tackle this challenge.

“Historically it has been very challenging to value land accurately,” Professor Rambaldi said.

“Land revaluations present a significant risk to state government revenues, yet a reliable modelling framework to predict land values has been notably absent.

“One of the duties of universities is to produce research and tools which can address major challenges to help the broader community – it is our hope that the suite of tools we are creating will do this,” she said.

The new models seek to use various data sources to ensure accurate models are formulated for each area that help explain and identify potential issues.

**“By partnering with government on this project we hope to develop a comprehensive robust and user-friendly set of modelling tools,” she said.**

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Current economic models for land valuations don't help us understand why particular areas of a city sometimes have variations in land prices – for example if there are delays in development which influence pricing.



**Professor Alicia Rambaldi**

“From a planning perspective, this is inefficient. Models need to better capture other data sources which explain movements of people and fluctuations in prices,” Professor Rambaldi said.

“We need to understand what creates price fluctuations and accurately value property to help the government determine where new assets such as hospitals and railways should be best placed.

“We also need better valuations because they help the government develop optimum taxation – so that taxes aren't unfairly high or low in a certain area.

“Essentially, with these models, we hope to create a fairer system,” Professor Rambaldi said.

# Backing up better policy

**When Professor John Quiggin first began addressing climate change it was a little known and scarcely discussed topic in academic economics, let alone popular media.**

Through dedication and substantive research work, which has focused on educating the public and engaging policymakers, Professor Quiggin has been an active participant in the movement that helped raise the agenda of this topic on the Queensland and world stage.

“Economics encompasses how the world operates – we can use it as a force to help drive positive impact and address major challenges,” Professor Quiggin said.

**“Climate change is an issue which affects every person on this planet, their children and generations to come – it is our duty as academics and citizens to address this challenge as best we can.”**

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Engaging with the public and politicians has allowed him to support positive policy moves and has delivered real impact to the community.

“My work has primarily focused on policy measures – specifically those relating to the energy industry,” Professor Quiggin said.

“I’ve tried to write for a general audience rather than just addressing other academics.

“I want to talk to the policymakers who are creating law and the general public to help them understand an issue and to present them with the evidence that helps them make an informed choice and argument.”

Recently he has been using his research to elevate discussion around less carbon-based energy dependence.

“We can live much as we always have but with greatly reduced costs on the environment,” Professor Quiggin said.

“Australia does not have to depend on the carbon economy,” he said.



**Professor John Quiggin**

“We can decarbonise the energy industry.

“But it is important to look at practical ways we can do this – gradual steps that can be taken to make this transition as soon as possible.”

Professor Quiggin said there were three key steps that needed to be taken in the decarbonisation process.

“The approach we need has been described as a triathlon,” he said.

“The first leg is to replace carbon-based electricity generation with renewables. The second is to replace internal combustion vehicles with electricity. The third is to replace carbon-based technologies in industry and change land use to become a net sink of carbon dioxide rather than a source.”

# An economist each day, keeps the doctor away

**In Australia, healthcare is a part of most people's lives from the moment they are born.**

While access to good healthcare is vital — decreasing the amount of time citizens spend in hospital or the doctor's office and ensuring optimal treatment is received, will benefit their health, their wallet and the economy as a whole.

With a focus on improving health across the lifespan, from babies to older people, Professor Brenda Gannon and her team are using economic methods to aid the wellbeing of millions of Australians.

By examining which treatment methods, programs and health behaviours like physical activity, are most effective, these researchers can help influence the creation of better health interventions, behaviours and policy.

Professor Gannon, has championed new approaches and methodologies to healthcare with a focus on ageing and longevity in Europe and recently established her area of research in Australia.

**“The methods and models we develop are aimed at improving health and quality of life,” Professor Gannon said.**

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“This research has already been effective in creating new healthcare interventions abroad. We're now using it to help find solutions to improve the health and quality of life for the more than 24 million people living in Australia.”

Partnering with local and federal government and other industry and health care providers, and community organisations helps Professor Gannon's team identify and address key social healthcare-related issues.

“Working in partnership with the government and external partners is very important,” Professor Gannon said.



**Professor Brenda Gannon**

“It helps us find the right questions to address and enables us to deliver the greatest impact for patients and families with health needs.”

Recent projects involve collaborations with Queensland Children's Hospital to help improve paediatric healthcare and assess the out-of-pocket costs for families with sick children.

Other projects include women's health initiatives supported by the National Health and Medical Research Council (NHMRC), as well as research to examine the use of exercise to prevent the onset and progression of dementia and other diseases of the ageing body.

A partnership with the Mater Health Services group enables Professor Gannon to work on maternal health and socioeconomic inequalities. Using data from health care providers, for example the Princess Alexandra Hospital, enables the team to also look at emergency demand in an era of digital health.

“Our work helps inform better policy creation, it helps reallocate health expenditure, to enable more efficient hospital spending and to determine out-of-pocket expenses for patients and their families.”

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Produced September 2019.