

CAREERS WITH STEM™

ECONOMICS

DOUBLE ISSUE
FLIP FOR
MATHS & DATA
CAREERS

DATA STARS

Solving big issues with data p6

Choose your own adventure p4

Economics is all about people p5



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Problem Solving

Identify strategies to solve problems



Critical Thinking

Evaluate information to help decision making



Analysis

Investigate data to offer insights



Discover skills for the future



Collaboration

Share ideas and perspectives



Communication

Engage audiences and influence decisions



Global Awareness

Take a global perspective



Adaptability

Build skills for a range of jobs and industries



Explore economics.



To discover more about the benefits of studying economics, visit rba.gov.au/education



RESERVE BANK OF AUSTRALIA

DR BRAD JONES
ASSISTANT GOVERNOR
(FINANCIAL SYSTEM),
RESERVE BANK OF AUSTRALIA

GOOD IN A CRISIS

Economics is connected to all the big issues of our time

In my six years at the Reserve Bank of Australia (RBA), I've had the good fortune to work on some fascinating domestic and international issues. And with a global pandemic thrown into the mix, it's been a challenging and rewarding time to be working in Australian public policy.

My economics career path has been unusually long and winding! As an undergraduate in Western Australia, my interest in economics and finance was sparked by the Asian Financial Crisis of 1997. My career has since spanned three periods of financial and economic upheaval: the implosion of the technology bubble in the early 2000s, the Global Financial Crisis and the global pandemic.

After my honours year, I moved to Sydney to do a PhD and one of my dissertation topics was on the RBA. As things turned out, I spent my early career overseas – mainly in London and Hong Kong in the financial markets, in Washington, D.C. at the International Monetary Fund, and also as a fellow at the University of Cambridge Judge Business School. But I'm grateful to be back home working on issues that are highly relevant to the welfare of Australians.

In my experience, people get hooked on economics for two main reasons.

First, it provides you with a broad prism through which you can better understand the world around you. It's a great way to indulge

your intellectual curiosity. I struggle to think of significant issues – both historical and current – that haven't been connected to economics. Without a solid grasp of economics, you can't understand the rise and fall of empires, why some countries have prospered while others have stagnated, or consider the implications for society of income inequality, climate change, geopolitical conflict and pandemics. Second, studying economics can equip you with the skills to improve the welfare of people around you, through public policy. Policy making can affect people's lives – for better or worse – in profound ways. Wielding that sort of power requires a 'toolkit' to tackle complex problems under great uncertainty. When advising policymakers, you need to understand the intended and possibly unintended consequences of actions! And this is more important than ever in a crisis – when it's all hands on deck, those economics skills really come to the fore.

Dr Brad Jones
Assistant Governor (Financial System),
Reserve Bank of Australia

SENIOR ADVISOR,
INTERNATIONAL
MONETARY FUND



DEUTSCHE BANK
GLOBAL MARKETS



PHD IN FINANCE,
MACQUARIE UNIVERSITY



BACHELOR OF BUSINESS
(HONOURS IN ECONOMICS),
EDITH COWAN UNIVERSITY AND
UNIVERSITY OF WESTERN AUSTRALIA

ASSISTANT GOVERNOR
(FINANCIAL SYSTEM),
RESERVE BANK AUSTRALIA



HEAD OF ECONOMIC
ANALYSIS DEPARTMENT,
RESERVE BANK OF AUSTRALIA



HEAD OF INTERNATIONAL
DEPARTMENT, RESERVE
BANK OF AUSTRALIA

STUDYING ECONOMICS CAN EQUIP YOU WITH THE SKILLS TO IMPROVE THE WELFARE OF PEOPLE AROUND YOU"

The POWER of DATA

Would you like to help solve some of the biggest challenges of our time?
Then a career in economics could be your calling!

Every day, economists tap into quantitative and qualitative data to help governments, businesses and non-profit organisations solve big problems. Studying economics gives you the skills to find the right data, analyse it using mathematical and statistical techniques, and communicate what it all means to decision makers. Here are just a few examples of the challenges you could help solve with economics.

CHALLENGE + DATA + ECONOMICS = ACTION

#1

THE BIG CHALLENGES

CLIMATE CHANGE

- Rising temperatures
- Extreme weather events
- People being displaced

POVERTY AND INEQUALITY

- Income disparity
- Lack of access to education and healthcare
- Unequal distribution of resources

HEALTH CRISES

- Pandemics
- Healthcare worker shortages
- Disease outbreaks

POLITICAL INSTABILITY

- Conflicts and wars
- Refugee crises
- Human rights issues



#2

DATA SETS ECONOMISTS USE

MACROECONOMIC INDICATORS

- Gross Domestic Product (GDP)
- Unemployment rates
- Inflation rates

ENVIRONMENTAL INDICATORS

- Carbon emissions
- Renewable energy adoption
- Biodiversity indices
- Satellite images

SOCIAL INDICATORS

- Poverty rates
- Education levels
- Healthcare access
- Happiness index

HEALTH INDICATORS

- Disease prevalence
- Healthcare infrastructure
- Life expectancy



#3

ACTIONS

POLICY INTERVENTIONS

- Fiscal policies (government spending and taxation)
- Monetary policies (setting interest rates)
- Trade policies

INNOVATION AND TECHNOLOGY

- Research and development
- Sustainable technologies
- Green energy solutions

INTERNATIONAL COOPERATION

- Trade agreements
- Climate accords
- Humanitarian aid

SOCIAL AND ECONOMIC DEVELOPMENT

- Education and skills development
- Poverty alleviation programs
- Healthcare infrastructure improvement



ECONOMISTS ON A MISSION

EMMA CHOW'S ROLE IS ALL ABOUT ENCOURAGING MORE PARTICIPATION AND DIVERSITY IN ECONOMICS

Emma thought she wanted to study psychology at university... but changed her mind. "I ended up choosing economics after realising that, at its core, economics is a study of human behaviour!" she says. "It also excited me that I could work on real-world issues and shape policies that impact people's lives."

In her role as a public education economist at the Reserve Bank of Australia (RBA), Emma gets to work with data on students and schools to help her team understand who chooses to study economics in Australia and why.

"My team was established to help increase the size and diversity of the economics student population," Emma says. And given all the ways economic decisions impact Australians, it's an important goal!

"People with economics backgrounds often go on to work in roles where their decisions affect many people, so it's important to have a wide range

of perspectives, ideas and solutions at the decision-making table," Emma says.

"I want to encourage people from all backgrounds – whether that's gender, cultural background or socio-economic status – to explore economics."

As well as working with data, Emma's day-to-day might involve giving presentations to high school students and creating resources that explain economic concepts in simple terms.

Emma feels studying economics has helped her to be a better analytical thinker, considering different ways to tackle a problem.

She loves helping students increase their understanding of economics, and encouraging more students to take an interest in economic issues. "It's fun trying to explain technical economic concepts in an engaging and informative way, and to help students see how relevant they are to all our lives."

EMMA'S TOP CAREER TIP

Keep up with what's happening around the world and ask questions! Think about the bigger picture: how does what you are learning in the textbook apply to the real world?

LAUREN TROMPP

EMMA CHOW
ECONOMIST, RESERVE BANK
OF AUSTRALIA

BACHELOR OF ECONOMICS
(HONOURS)/
BACHELOR OF COMMERCE, UNSW

INTERN, DELOITTE
ACCESS ECONOMICS

GRADUATE ECONOMIST,
RESERVE BANK OF AUSTRALIA

PUBLIC EDUCATION ECONOMIST,
RESERVE BANK OF AUSTRALIA

ECONOMICS: USING DATA TO SOLVE THE BIG ISSUES

Meet **four economists** working with data to help us all

Economists combine data – which could include official statistics, surveys, big data and even interviews – with their analytical smarts to gain insights into important issues and propose solutions. But the best part is, once you have a grounding in economics, you can choose which area you want to make a difference in – just like these four superstars. – *Charis Palmer*

#1 TAKING CARE OF BUSINESS

SIDDARTH ROCHE USES DATA TO ... TAKE THE 'TEMPERATURE' OF AUSTRALIAN BUSINESSES

Even when he was young, Siddarth had an interest in business. “I used to have my own store as a kid where I’d sell erasers to my family members!” Siddarth says. “I knew I wanted to do something related to numbers and business, but I wasn’t too sure what.” Today, as a senior analyst in the Reserve Bank of Australia’s Financial Stability Department, he works in a team that looks at how healthy (or not) Australian businesses are – be they small or large.

“On a day-to-day basis, I might be looking at financial statements to assess whether businesses have enough income to service their debts, or I could be monitoring the number of business failures and the impact on the economy,” Siddarth says.

He’s also conducting analysis looking at potential challenges businesses may face in the future. “It’s important work. If these pressures lead to more businesses failing, it could have an adverse impact on the financial system (through losses to creditors such as banks) and the economy (for example, through workers being laid off).”

SIDDARTH'S TOP CAREER TIP

Stay curious and seek out internships or projects that apply what you learn to real economic problems.

BACHELOR OF BUSINESS / BACHELOR OF ECONOMICS (HONOURS), JAMES COOK UNIVERSITY

GRADUATE ANALYST, RESERVE BANK OF AUSTRALIA



ECONOMICS AND FINANCE INTERN, RESERVE BANK OF AUSTRALIA

SENIOR ANALYST, RESERVE BANK OF AUSTRALIA

LAUREN TROMPP / SHUTTERSTOCK

#2 KEEPING PEOPLE EMPLOYED

MADISON TERRELL USES DATA TO... HELP THE RESERVE BANK OF AUSTRALIA IMPROVE THE WAY IT FORECASTS WAGES

Madison started out wanting to be a lawyer, choosing a combined Bachelor of Laws and Bachelor of Economics degree. "Although I enjoyed studying law too, I leaned towards economics because the range of jobs I could do were so diverse and I knew I could make a positive impact in my career," Madison says.

And she was right! Her current role forecasting wage growth influences how the Reserve Bank Board makes decisions affecting all Australians. "Even though it's just one piece of the puzzle, the work I do directly contributes to improving economic outcomes for the Australian people! And how cool is that?"

Madison says many people underestimate the broad range of roles economists have. "You can help develop solutions for the big social issues humanity faces today, like climate change, immigration inequality, the gender pay gap and even increasing happiness. You might want to help in designing new cities, work as a diplomat, engage in international affairs or work towards a greener future – a degree in economics will allow you to work in all these sectors!"



MADISON'S TOP CAREER TIP

Grades aren't everything, and no matter the course you want to do there are always other ways to get in.

BACHELOR OF ECONOMICS /
BACHELOR OF LAWS,
THE UNIVERSITY OF ADELAIDE

ECONOMIC POLICY INTERN,
DEPARTMENT OF THE PRIME
MINISTER AND CABINET

TEACHING AND RESEARCH ASSISTANT,
SCHOOL OF ECONOMICS + PUBLIC
POLICY, THE UNIVERSITY OF ADELAIDE

ANALYST,
RESERVE BANK
OF AUSTRALIA

#3 LINKING MONEY WITH MENTAL HEALTH

DR DAVID JOHNSTON USES DATA TO... LOOK AT HOW OUR ECONOMIC SITUATION RELATES TO OUR MENTAL HEALTH

David started out in science after he graduated high school, but once he realised he could apply his maths and statistics skills to real-world problems, economics was the path for him.

Now a professor at Monash University, David researches how a person's economic situation can impact their mental health, and vice versa.

The data sets he works with include millions of people to look at how their lives are evolving over time. "There's so much data out there. And if you can have the skills to analyse it, which economics teaches you to do, then you've got lots of different career paths."



DAVID'S TOP CAREER TIP

Keep doing maths in years 11 and 12, and don't forget science is also a legitimate path into economics.

PHD IN ECONOMICS,
UNIVERSITY OF MELBOURNE

PROFESSOR OF ECONOMICS, CENTRE FOR
HEALTH ECONOMICS, MONASH UNIVERSITY

#4 PUTTING A PRICE ON NATURE

DR NGOC LAN LE USES DATA TO... HELP THE ENVIRONMENT

As an environmental economist, Lan has crunched data to help quantify the value of everything from water to forests and clean air. Today, she works for the Asian Development Bank, which lends money to the governments of developing countries to help with sustainable development projects including climate change adaptation, and environmental conservation and rehabilitation.

"For environmental conservation projects, if you only look at the revenue parts, they usually do not cover the cost. However, for such projects, the benefits to the community and to the environment are huge and need to be considered. My job is to make sure that all the benefits of the projects are accounted for."



LAN'S TOP CAREER TIP

There are a lot of resources online to learn economic principles, methods, techniques and data analysis.

MASTER OF DEVELOPMENT ECONOMICS AND INTERNATIONAL
COOPERATION, UNIVERSITY OF ROME TOR VERGATA

PHD IN ENVIRONMENTAL ECONOMICS,
UNIVERSITY OF WESTERN AUSTRALIA

CONSULTANT, INTERNATIONAL
WATER MANAGEMENT INSTITUTE

CLIMATE CHANGE ECONOMIST, INTERNATIONAL
CENTER FOR TROPICAL AGRICULTURE (CIAT)

ENVIRONMENTAL ECONOMIST,
ASIAN DEVELOPMENT BANK



CALLAM PICKERING
SENIOR ECONOMIST

DATA + AI = THE FUTURE OF ECONOMICS

Callam Pickering uses data to get a handle on the number and types of people looking for a job

Callam works at global jobs website Indeed.com, but his career has been full of variety. He's also been the economic editor on a 24-hour business news website, and a senior analyst at the Reserve Bank of Australia. — Alexander Liddington-Cox

HOW DO YOU USE DATA IN YOUR JOB?

Data is central to every economist's job. Working at Indeed, I use a range of internal data on the behaviour of jobseekers and employers to try to gain a better understanding of the Australian labour market and provide key insights to clients and the media. But I also regularly use data published by the Australian Bureau of Statistics and global data from organisations such as the IMF [International Monetary Fund] and OECD [Organisation for Economic Co-operation and Development].

HOW IMPORTANT HAVE YOU FOUND MATHS IN YOUR CAREER SO FAR?

Maths and data analysis are often closely aligned. Often the maths can be simple, such as growth

rates, fractions, simple statistics, but it can provide powerful insights into what is happening in an economy and what it means. More advanced statistical techniques – like regressions comparing dependent and independent variables – can also help us gain deeper insights into the relationships between different data sets.

TO WHAT EXTENT DOES AI COMPETE WITH OR ENHANCE WHAT YOU DO?

Already the tools can be highly useful. Just recently I was creating code through R [a programming language] and using ChatGPT to troubleshoot, as I'd run into problems. Previously, I'd have had to do a web search.

My general view is that AI will augment and enhance the ability of people like me to conduct meaningful analysis and provide insights into economic developments.

WHAT ADVICE WOULD YOU GIVE YOURSELF IF YOU WERE GRADUATING TODAY?

The best career advice I've ever heard was to learn how to solve problems. Everyone can spot problems. But the precious few who can solve them become irreplaceable.

So take steps to create a broad skill set that can be utilised across a range of tasks. Learning and skill development doesn't stop at graduation.

DATA IS CENTRAL TO EVERY ECONOMIST'S JOB"

BACHELOR OF COMMERCE / BACHELOR OF ECONOMICS, MONASH UNIVERSITY

ECONOMIST, RESERVE BANK OF AUSTRALIA

MASTER OF JOURNALISM / MASTER OF INTERNATIONAL RELATIONS, MONASH UNIVERSITY

ECONOMIC EDITOR, BUSINESS SPECTATOR

FOUNDER, CP ECONOMICS

APAC SENIOR ECONOMIST, INDEED.COM