EQuilibrium

Economics Student Society of Australia

2020 | Good Economics for Hard Times


essa

With thanks to our contributors

Editors

Thao-Mi Bui
Sao Yang Hew
Edward Meehan
Jessica Tang
Jonas Larsen
Joel Fernando
Amber Lee
Nigel Pereira

Graphic designers

Thanh Le
Kristie Lu
Grace Fu

Writers

Jessica Tang
Sao Yang Hew
Edward Meehan
Gabriel Chenkov-Shaw
ZeXin Yuan
Ronald Poon
Klinsmann Lee
Hooi San Ng
Ani Prakesh
Charlie Francis
Lawernce Huynh
Jonas Larsen
Pinidu Chandrasekra
Jeremy Mann
Travis Huynh
Nigel Pereira
Kristen Mai

Our Sponsors

Platinum

Victoria State Government | Treasury and Finance

Founding

Monash University Business and Economics

The University of Melbourne | Faculty of Business & Economics

Gold Sponsors

strategy&

Australian Government Productivity Commission

alphabeta strategy x economics

AITHER

frontier economics

Silver Sponsors

Deloitte. Access Economics

EY

Affiliates

GRATTAN Institute

Partners

The Economic Society of Australia

University of Melbourne Committee

Ben Toohey
President

Nelson Zhao
Vice-President

Rebecca Dong
Secretary

Kei Hirasedo
Treasurer

Eleni Babusku
Events Director

Sabrina Chen
Events Officer

Jonas Larsen
Publications Director

Amber Lee
Publications Officer

Nigel Pereria
Publications Editor

Joel Fernando
Publications Editor

Ruth Choo
National Affairs Officer

David Lawlor
Marketing Officer

Felix Gong
Marketing Officer

Bao Huyen Vo
Graphic Designer

Lachlan Iape
Sponsorship Director

Connie Zhang
Sponsorship Officer

Faith Woon
Subcommittee

Hachins D'Souza
Subcommittee

India Cooper
Subcommittee

Ben Windmann
Subcommittee

Josh Clyne
Subcommittee

Monash Clayton Committee

Michelle Shi
President

Rosie Wei
Vice-President

Sasha Lioudvigova
Secretary

Jane Wells
Treasurer

Lauren Schiller
Events Director

Emma Spencer
Events Officer

Genevieve Perrignon
Events Officer

Orlando Buttie
Events Officer

Thao-Mi Bui
Publications Director

Jordan Zhang
Publications Officer

Lemia Bickalo
Chief Publications Editor

Mina Nguyen
Marketing Director

Thanh Le
Marketing Officer

Kristie Lu
Marketing Officer

Gabriel Basman
Marketing Officer

Remington Fonseca
Sponsorship Director

Rak Aggarwal
Sponsorship Officer

Maika Tran
Education Director

Robert Gao
Education Officer

Yun Zou
Information Technology Director

Fiona Tran
Information Technology Officer

James Melville
National Affairs Officer

Yvonne Au
Multimedia Officer

Les Kosem
Subcommittee

Tori Attwood
Subcommittee

Chitra Malik
Subcommittee

Camille Ablaza
Subcommittee

Jack Myers
Subcommittee

Grace Fu
Subcommitee

Monash Caulfeid Committee

Matthew Zillmann
President

Suvacha Tomar
Vice-President

Alex Goh
Secretary

Samuel Denham-White
Treasurer

Robert Zhong
Operations Manager

Waikin Wan
Events Director

Santhoshan Rajendran
Events Officer

Lizzy Hum
Events Officer

Benjamin Thompson
Publications Director

Lachlan Hotchin
Publications Officer

Ashma Khan
Marketing Director

Naomi He
Marketing Officer

Donna Bat-erdene
Marketing Officer

Andrew Chen
Sponsorship Director

Rachel Seng
Sponsorship Officer

Pat Healy
National Affairs Officer

Kevin Yu
Information Technology Director

President's Address

ESSA University of Melbourne, Ben Toohey

ESSA 2020 was a year of resilience and innovation.

O-Week marked the beginning of the year successfully, with a bare-bones committee welcoming numerous first years to the world of economics and establishing a strong membership base for the year ahead. The first event on the calendar was to be our annual *Trivia Night*, which was unfortunately cancelled for well-known reasons. While this was a setback, it proved not to be a deterrent.

The transition to remote learning by the University also brought with it a new digital environment for us to navigate as a committee, and one I can confidently say was a success. We elected to deliver *Careers in Economics* in an online format, and its great attendance paved the way for a full adoption of an online events calendar. Our flagship events *PPCC* and *Q&A*, complemented by *Career Mentoring* and our *Honours' Information Session* followed too in an online format, with strong attendance, national participation and insightful discussions all-round. These successes are testament to the hard work of our events and marketing teams.

The dynamic environment also provided opportunity elsewhere. With a changing graduate job market and a greater focus upon economics career pathways among both the students and public, our sponsorships team have been able to engage successfully with new firms, growing and widening our sponsor base for 2021. Opportunities, too, also arose for our publications team, who were able to successfully leverage the plethora of pertinent economic issues and provide our member base with continually thought-provoking content.

I would especially like to thank our sponsors for their support throughout the year. Their willingness to adapt with us to the digital environment allowed us to continue to provide valuable educational and networking opportunities to our members. My thanks, too, go to the wonderful committee team that supported me throughout the year – their hard-work and dedication were invaluable in allowing us to provide increasingly relevant outcomes to other students.

With much excitement for the year that lies ahead for the new committee, I wish all the best to those that are incoming to their new roles, and will watch-on avidly from the sidelines as this great club continues to progress.

President's Address

ESSA Monash Clayton, Michelle Shi

2020 has certainly been a strange year for all of us here at ESSA.

This edition of Equilibrium was created amidst all the chaos (at home of course), and is a perfect opportunity to reflect on a challenging but very rewarding year. A huge congratulations goes to the Publication teams, and in particular Thao-Mi Bui, Sao Yang Hew, Jessica Tang, Edward Meehan, and Thanh Le for their incredible work on EQ.

Despite not having O-Week this year, ESSA has established a strong online presence with a host of old and new events. The Public Policy Case Competition with UniMelb was a huge success online, covering the very topical cross-roads of Covid-19 recovery and the environment. We also collaborated with a number of commerce clubs to run social nights, to bring students together in a year where we've all felt so far apart. Excitingly, we launched this year's edition of Short Supply with our first ever panel style launch event to discuss Covid-19 and its social impact. This year's Women in Economics Event provided a rare opportunity to (virtually) network with inspiring female economists. ESSA has taken the opportunity of being wholly online to launch our very own podcast series called 'Conversations with ESSA', while our online articles have continued to thrive. And finally, Revise with ESSA has continued online as a key student resource during exams.

A number of thank yous are owed to everyone who has supported ESSA this year. Thank you to the Monash Business School and the Department of Economics who have been fantastic partners in promoting economics to the student body. I'd also like to thank the Economics Society of Australia and the Women in Economics Network for their ongoing support and encouragement. A big thank you also goes to all of our professional sponsors for their willingness to collaborate and support of ESSA. And finally, a huge thank you goes to Clubs & Societies for their help in a smooth transition online.

Lastly I would like to thank our 2020 committee for their incredible work this year. This has been a difficult year for everyone, and I am constantly awed by the commitment and dedication you put towards ESSA; we would be nothing without the efforts of every single executive, director and committee member. I am so excited to witness ESSA continue to flourish, and wish you all the best for 2021.

Thank-you for reading this year's edition of Equilibrium. Since the very beginning, this publication has been a cross-campus effort. But we are proud to say that this year's Equilibrium was a more collaborative effort than ever before. Despite being physically apart, across time zones and countries, our writers, committee and all contributors worked extremely hard to bring together a beautiful publication. We're also glad to have students from the University of Adelaide and Deakin University share their love of economics and contribute to the publication.

The ongoing pandemic has made clear our reliance on institutional integrity, sound policy and good economics for hard times. This year's edition pays tribute to two pioneers within the economics discipline: the 2019 Nobel laureates, Abhijit Banerjee and Esther Duflo. Their experimental approach to tackling poverty demonstrates the transformative impact of economic insights. We were inspired by the wide scope of their thinking and fresh perspective on thorny, global issues present in their book, 'Good Economics for Hard Times'. We've taken some licence with their title and we hope we'll be forgiven for trying to plagiarise their attitude towards economics.

On the next several pages, we present different, mostly optimistic, partly controversial, perspectives on how economics can improve the world. You'll find articles discussing the future of education in Australia at a time when the debate on deregulation is arguably fiercer than ever; the possibility of a carbon tax in the EU despite heightened division on the issue; a world beyond financial maximisation; the economics of innovation; and more.

Thank-you to all our writers, sponsors and editors for your hard work during these hard times.

We hope you enjoy the read.

Jonas Larsen and Thao-Mi Bui

EQuilibrium 2020

CONTENTS

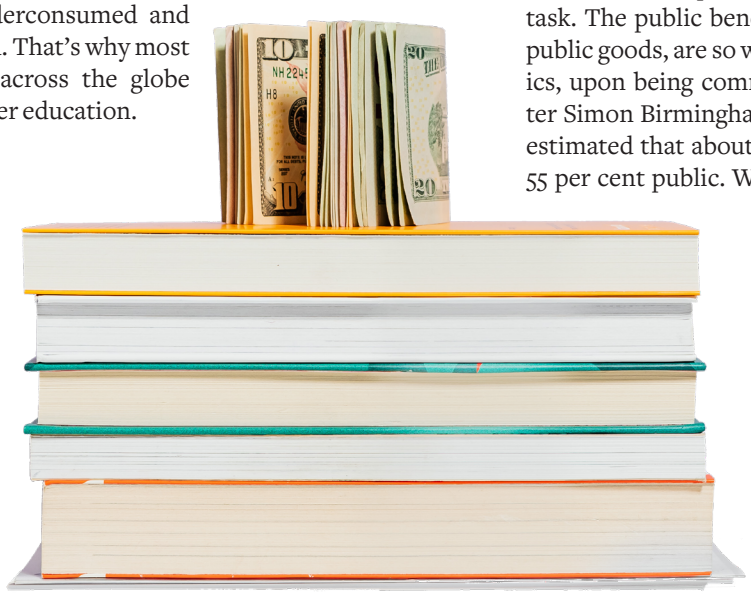
Jessica Tang

The higher education bill: who pays and how much?

In this article, Jessica Tang takes a look at how economics can be applied to debates about higher education funding.

A short course on market failure

Let's revisit some introductory economic concepts. First up – market failure. A market failure is defined as a situation where the allocation of goods and services by the free market is suboptimal. There are two sources of market failure that are relevant to our discussion – public goods and externalities. Let's discuss these in turn. A public good is a good that in non-excludable and non-rivalrous. This means that no individual can be excluded from consuming the good. It also means that consumption of the good by one individual does not prevent another individual from consuming the same good. Higher education is a public good because its benefits are enjoyed by all of society, not just those who attend university. When consumption or production of a good imposes costs and benefits on an unrelated third party, those costs and benefits are said to be externalities. Students attend university to train to become the nurses, doctors and engineers of the future. Universities also produce extensive amounts of research that are of great value to society. So, higher education is a public good that has positive externalities. Why is this important? Because it suggests that without government intervention, higher education would be underconsumed and undersupplied. That's why most governments across the globe subsidise higher education.



So, how do we split the bill?

In Australia, the higher education bill is split two-way. Students who enrol in higher education courses usually accumulate university fees through a government loan that is to be repaid once the individual starts earning a threshold income. Students who participate in this scheme are referred to as Commonwealth Supported Place (CSP) students. The remainder of the bill is paid by the public through the taxation system. The government pulls the strings on how the bill is to be split by adjusting the student contribution amount for CSP courses. In 2017, the government successfully passed a bill that would increase the maximum student contribution amount for CSP courses. Additionally, the government also lowered the threshold income for HECS-HELP loan repayments. The changes were part of a rebalancing strategy that would ensure that students 'pay their fair share.' This leads us to the big question – how high should the burden be for students?

Neoclassical economic theory suggests that in order to set a fair bill for students and taxpayers alike, we need to draw a line between public and private benefits. This is no easy task. The public benefits of higher education, as with most public goods, are so wide-reaching. Deloitte Access Economics, upon being commissioned by former Education Minister Simon Birmingham, was able to rise to that challenge. It estimated that about 45 per cent of benefits are private and 55 per cent public. While the government is not being guided by this strict rule, the total bill is pretty much split 50-50. This would suggest that all is good. Not quite. The public-private funding divide varies dramatically across disciplines. At the time of the findings, students studying agriculture paid just 28 per cent of the bill. At the other end of the spectrum, students studying law and commerce paid 84 per cent. Because of this, it's important that we consider whether

variations in public vs. private benefits are consistent with variations in student contribution shares. It's likely that the government has been somewhat influenced by public and private benefits when fixing course fees. Indeed, courses in fields that have greater ratios of public-private benefits, such as science and engineering, tend to attract lower split bills for students.

While the neoclassical explanation is interesting, it paints a limited picture of how higher education is actually being funded in Australia. Apportioning higher education costs by making distinctions between public and private benefits is just one option. If you've studied economics, you'll probably find this strategy very intuitive. Nevertheless, it's worth reiterating that it's near impossible to correctly estimate public and private benefits of higher education, so there are issues with applicability. As we will see, the government has been swayed by other priorities. Another option is to link student contribution amounts to potential future income. Much like the tax and welfare system, students who are expected to earn more in their career are asked to pay more. While this option has little regard for hard economic theory, it principally seeks to address the issue of equity by ensuring that low income earners don't spend the rest of their working lives paying off their higher education fees. Up until recently, this has been the government's go-to handbook for fixing course fees. However, there have been problems with this approach. Linking course fees to earnings potential could send the wrong price signals to students. Students may enrol into courses on the basis of price, rather than employability. Indeed, this is one of the reasons why the government has decided to do a complete 180. We will discuss this later. In addition to this, students from low socioeconomic backgrounds may decide to forego more pricey courses in favour of cheaper ones. This would shut out disadvantaged students from pursuing careers that pay well.

Fee hikes for job growth

In 2020, the government decided to shake things up. In a very controversial announcement, the government revealed that it planned on adjusting course fees to align with job growth. Education Minister Dan Tehan explained that the government wanted to steer people away from humanities and into 'job-ready' STEM fields. This is the third option – that the government should use price signals to encourage students to pick up courses in fields that are deemed 'job relevant.' It's pretty much the exact opposite of what the government has been sticking to. The changes would see students enrolled in humanities courses foot a whopping 93 per cent of the bill. Perhaps even more alarmingly, proposed student contributions for humanities courses are set to overtake the costs incurred by universities in providing them. The government hopes that the fee hikes would offset the price drops in courses such as nursing and teaching. Students enrolled in these courses will pay just 18 per cent of the bill. There are similarities between aligning course fees to job growth and aligning course fees to public and private benefits. Both take a utilitarian view. However, the government's new strategy is focused on getting graduates into jobs. Whether those jobs are publicly beneficial or not is a different story.

There are two main reasons for this proposal. Firstly, the government wants to ensure that students are making smarter decisions for the sake of their own futures and the economy's. Secondly, the government wants to stop wasting its money on subsidising courses that do not guarantee jobs and growth. Regardless, the announcement has since received much backlash. While experts do agree that students should be made aware of career prospects in STEM fields, many argue that students should not be penalised for chasing their dreams. Indeed, economist Andrew Norton argues that students should be steered by marketing campaigns, not price signals. At the end of the day, students should be trusted to make their own decisions. We have previously discussed that the equity implications of the government's old strategy has been mixed. While the government's new strategy could very well improve job prospects and earnings potential for disadvantaged students by steering them towards STEM courses, it could also result in the underrepresentation of disadvantaged students in humanities disciplines. Furthermore, those who choose to ignore the government's price signals could end up with a lifetime worth of debt. As Andrew Norton notes, 'Under this [new] system, humanities students may spend their entire careers repaying debt, whereas for a nursing student it may take just a few years — there are very big discrepancies.'

Should we even pay anything?

So far, our discussion has revolved around how much students should pay for their higher education. But should we even have to pay at all? Conversely, should the government even have to pay at all? One extreme is to make students foot the entire bill. Private universities in the US come close to doing this, although it's worth mentioning that most students do receive some form of financial aid. Persisting sky-high fees in countries like the US and the UK are the result of deep-rooted institutional and political factors. It's not difficult to see why this option is so unpopular. In 2014, former Education Minister Christopher Pyne sought to allow universities to set their own fees. Suffice to say, it was not well received. The other extreme is to let the government subsidise the entire cost of higher education. In countries like Ireland, Norway and Sweden, students go to university for free. Higher education is usually thought of as a quasi-public good because it has both public and private benefits. However, as aforementioned, it's quite tricky to measure public benefits because they can be so wide-reaching. Governments that fully subsidise higher education do so under the assumption that higher education is mostly a public good. Despite this, most governments are unwilling to fully subsidise higher education because doing so would substantially raise public debt.

The key takeaway here is that funding for higher education isn't as simple as drawing a line between public and private benefits – that's already a challenge in itself. As our economy deals with industry transition, a looming recession and rising inequality, not to mention a growing budgetary deficit, it's clear that there are many priorities for the government to juggle.

Charlie Francis

Sorry everyone, there's still no free lunch – MMT and 'The Deficit Myth'

After hearing about the craze surrounding Stephanie Kelton's latest book, *The Deficit Myth*, I thought I had to buy myself a copy. Kelton alleges that we have all been lied to by our politicians about paying down government debt, which is an attractive proposition. Is the political establishment actually taking more money from us than they need to? In short, the book says yes, but in reality, the Modern Monetary Theory movement is mostly a rehashing of work done by the late John Maynard Keynes. Let me explain a bit more about what I mean.

The big headline is that the government cannot run out of money, and is 'not like a household'; Josh Frydenberg and Treasury are known as (fiat) currency issuers, rather than individual currency users like you and me. So, what's new there? Not much really—most of the craze about Kelton's book is from the general public, rather than traditional economists. I will first say emphatically that I am all for talking about how we could improve our current policy mix. However, what is not so obvious to the reader is that some of these proposals stray far beyond our normal policy frameworks, and involve vastly expanding the government's role in the economy, especially at a time when trust in institutions is scant. As Economist Adam Triggs puts it, "Most of modern monetary theory is not new. And what is new isn't plausible" .

For example, proponents suggest that central banks should finance the spending of governments and no longer act independently (a point which was directly rebuked by RBA Governor Phillip Lowe, when he said "monetary financing of the budget is not on the agenda in Australia") , and remove the traditional constraints on spending so that it is guided by inflation. This last point is not a current Keynesian tenet, rather it is a newer MMT pipe dream which sits alongside other radical and unsustainable proposals. Not only do these beliefs seldom stack up economically, but more importantly, they do not stack up in a political sense, where the mandate is needed to make such reforms.

Source: Scott McIntyre/Bloomberg

The 'Job Guarantee' (JG) for one thing is certainly not an apolitical stance, despite Kelton's assertions. Fundamentally, it is a way to force the government's hand into the labour market in order to eliminate capacity constraints. Sure, its intentions are genuine and good, but it is not in our best interests to pursue at this stage. Triggs points out again that "the long-term unemployed need more than just a job", and that government has many more options in fiscal policy to exhaust before it goes off the beaten path .

JobKeeper is doing an effective job at sustaining businesses through a period of dramatically low demand, but redistributing our taxes to help the private sector hire workers is not

what market-capitalist economies like Australia do on a permanent basis. These wage subsidy initiatives including the recently-announced JobMaker Hiring Credit in the latest budget, when combined with insolvency law changes, will also leave us with a horde of zombie businesses, according to ARITA chief John Winter .

When looking at measures to combat potential inflation, MMT again seems to fall short. Pushing up and down the levers of taxation seems like a technocrat's dream, but again, it is unrealistic. So too is the 'just stop government spending' argument, even as one of the major flaws in measuring price stability is that it is a lagging indicator unreliable for active usage. All the resulting uncertainty around the government's toolkit will surely drive investment away, and create a more cautious environment for consumers at a time where we want to instil confidence for our recovery .

We must not throw in the towel on current conventions just because we encounter setbacks; a JG is not the only possible solution to the disruption of labour markets, the modernisation of work, and the flaws in NAIRU.

Photo: AAP

But of course, I could be completely wrong on all of this. MMT as a concept is not completely set in stone in any respect; it is just a collection of floating ideas and simplified textbook chapters. Many proponents have different ideas about what constitutes MMT and what does not. Paul Krugman likened debating an MMT economist in a New York Times column to a game of Calvinball, where the rules are made up as they go along . Ultimately, the universally-agreed central idea—that governments cannot run out of money—is simply unoriginal.

In my opinion, anyone who ignores the political and social implications of trying to introduce enormous government programs to boost demand, and merely states that we can afford them because MMT says so, is really clutching at straws. Our recent era of neoliberalism may be in danger of coming to a close, but that should not entail things like moving the money printers from Martin Place to Parliament House, and establishing another version of the public sector.

I am not a 'one-handed economist' either; if the discussion of these concepts in the media and the community prompts better knowledge of how our economy works, that could only be a good thing.

However, introducing MMT with the JG and other tenets would be a bitter pill to swallow for the electorate. If we can take anything from recent elections, namely the federal one in 2019, it is that people do not like big change when they believe it is unnecessary or potentially sinister. Sure, students of economics can always take a technocratic view of the world and argue that taxation or welfare should change, but it is the public who makes the final decision. We are in extraordinary times, but we should not lose sight of the democratic first principles that we enjoy in the West—at least for now.

Sao Hew Yang

Connected: a soft introduction to the analysis of networks and complexity

Introduction

When writing articles for ESSA, I usually look into the scope of the articles that we can possibly write and relate it to my areas of "expertise", statistics and econometrics. Complexity economics, which was one the possible topics for Equilibrium, particularly caught my attention this time around. With the current undergraduate economics curriculum in Monash and I would presume within other universities as well, complexity economics seemed like a really foreign topic, and for good reason.

Complexity economics focuses on explaining the continuous and dynamic interaction between economic agents (think people, countries, banks, etc.), referred to as complex networks, and how and why these interactions are formed over time. The specific reason as to why it is relatively inaccessible (to undergraduates), is the fact that the computational and mathematical analysis components of complexity economics can be very taxing, and new models to model causal interactions for complex networks have only begun to spring up relatively recently.

Within this article I will briefly describe ideas specific to the modelling of social and economic networks and how they relate to complexity economics. More specifically, I want to provide some mathematical explanations so that students can know what to look out for if they want to learn more about complexity economics and the study of economic networks. I will also allude to several resources that are open-source, some Monash-specific units on this topic and groups within Melbourne where students can learn more about social and economic network analysis, with its contributions toward complexity economics.

Simplified complexity - social network data

The underlying fabric of complex networks usually comes from modelling relational data, which are data that denote relationships between certain individuals or economic agents. Examples of this on a small scale would be friendships or romantic relationships within high school, or transactional data between financial institutions (e.g. which financial institutions are connected with each other, and the volume of the transactions between these entities).

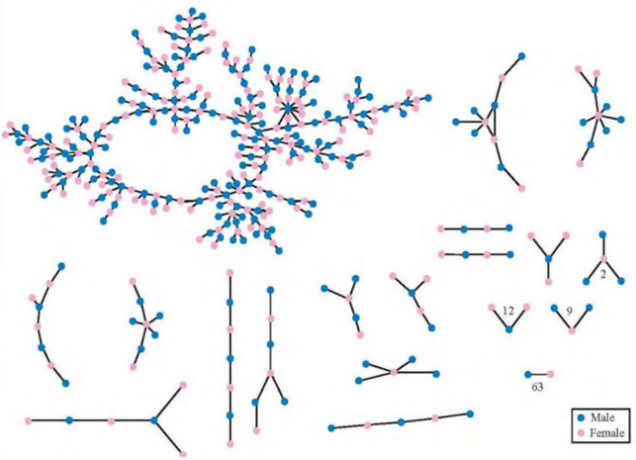


Figure 1 (source: Bearman, Moody and Stovel)

One interesting and admittedly hilarious example of a simple social network is provided above, which was published in a paper by Bearman, Moody and Stovel that indicates the existence of romantic (past and present) relationships between students in high school (excluding the tragic, single students). Obviously, the question ~~aside from the reason why such a large group of clustered romantic partners exist within this set of data~~, would be, how are these networks formed over time, and how will they continue to evolve (or devolve) in the future? Can these be modelled using random, probabilistic models? Or are there factors that affect how these relationships arise? How intense are these relationships? And what are the effects of these relations, if any?

Within different areas (or schools of thought) in economics, modelling relational data was not given much attention until the 1990s. Students might be more familiar with conventional statistical techniques we use within economics and econometrics, such as regression models for cross-sectional and time-series data (think OLS, IV, ARDLs, structural VARs and so on), or more complex generalised linear (and mixed) models. These are models that are compliant, and suitable for the quantitative analyses that we take in more traditional fields and industries. One overarching trait of conventional econometric models is that they assume, to some extent, the independence between individuals or economic agents within the data at hand - students are only related to each other within a class, countries are somewhat unrelated to each other, and so on.

More complex statistical models play around with dependencies between individuals of the same class or order, or techniques that are not influenced much by this dependence (e.g. robust models) to get around any assumptions of independence that might hinder the quality of statistical inference, particularly for economic models. However, with many of these models, we are only accounting **against** independence (and its associated effects), not **for** dependence. Even if we can make some reasonable inference within economics with the dependent data that we have, we won't be able to explain where this dependence arises. If this were the case, the need for models that explicitly deal with this sort of data, and hence the data in complexity economics, becomes more pertinent than ever. Some current achievements within the statistics and economics community will be alluded to in the next section.

Current methodological paradigms

Within complexity economics, we usually build upon statistical models of relational data in terms of graphs, although not the usual kind of graphs you may be expecting. Graphs, which arise from network mathematics and graph theory, are structures that have vertices and links which can be arranged in a particular order. Since its canonical use by Euler in 1736, graph theory has been studied extensively and applied to many different areas including computer science, biology, and of course, economics.

Within economics specifically, graph theory and network mathematics have been used to model relations between economic agents or individuals, peoples, schools, banks, countries and the like. What economists would have to decipher, would be the implications of the complex structures that we can communicate through graphs, and why they are important. Specifically, we seek to answer the following questions:

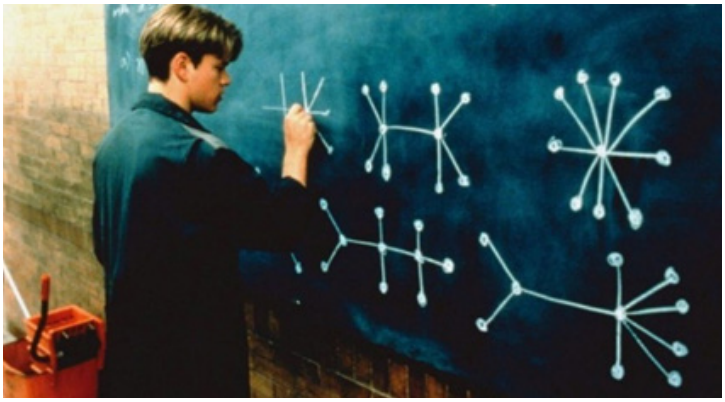


Figure 2: Remember this scene from *Good Will Hunting*? Yes! Those are graphs!

1. How do networks form?

To answer this question, statisticians and economists would identify and critically evaluate trade-offs between randomness and strategic network formation given certain datasets, to hopefully come up with underlying models that can describe the network structure of the dataset at given points, or over time. Models like these would include random graph models, utility-based models or a mixture of both, to capture connections that arise based on favourable strategic partnerships, and/or partnerships that occur *just because*. Some of these models can be expanded upon using multivariate techniques, i.e. techniques that use different characteristics of an individual to model network formation, such as the exponential random graph model (ERGM) for richer and deeper analysis.

There are obviously many more concepts and breakthroughs not mentioned above, which will be alluded to in the resource drop below.

2. Implications of network structures

One might be wondering, what could be the point of discussing connectedness within certain populations, and what information would be important within policy in the future. The easiest way to look into its usefulness would obviously be through examples. For instance, social and economic network data has been used quite comprehensively within developing countries to understand social positions, and relations between individuals and villages. This can be used to understand chains of information, and how news would likely spread from one individual or household to another. This sort of information has been used to implement microfinance or education initiatives within a lot of these areas, to great success as well.

On a larger, more macroeconomic scale, researchers can utilise financial networks (e.g. loaning and transactional data between banks or intermediaries) to identify inherent risks of financial damage that would spread from one financial institution to another through relations, and how to best mitigate those risks.

Evaluation of network data within economics is obviously a growing field, and researchers continue to find new problems to solve within this exciting sphere of economics and mathematics.

3. Where can I learn more?

Of course, this article per se will probably not allow you to obtain enough knowledge to become a complexity economist (what am I, God?). I figured that the best way to provide you with information would be a resource drop in this section, so here it goes. For the study of social and economic networks specifically, one cannot go wrong with Matthew O. Jackson's *Social and Economic Networks*, or its non-academic casual counterpart *The Human Network: How Your Social Position Determines Your Power, Beliefs and Behaviours*. Jackson's online course on social and economic networks, derived from his textbook is also available on *Coursera* with open access.

If one wants to delve deeper into the study of social and complexity economics, political scientist Francois Briatte's Github repository, *Awesome Network Analysis* is a comprehensive list of proprietary and open-source textbooks, papers and classics within the network analysis field, offering a broader set of resources on theoretical and practical/software knowledge as well. Students in Melbourne could perhaps stay updated (or even communicate with) *MelNet*, which is a consortium for research in social network analysis based in the Swinburne University of Technology, where researchers run projects and hold talks occasionally.

A recent paper I would recommend is *Unveiling causal interactions in complex systems* by Stavroglou, Stanley, Zuev and Monash's very own Athanasios Pantelous, in which interdependencies and ideas of research on causal interactions are thoroughly discussed, since evaluating causal relationships between different agents and variables is obviously quite central to complexity economics. Finally, for mathematical foundations (not for the faint-hearted!) I'd recommend the well-run unit MTH3170 - Network Mathematics which teaches graph theory.

Lawrence Huynh

Out with the old, in with the new: creative destruction and the economics of innovation

As the world faces unparalleled change, innovation emerges as the most valued asset that humanity possesses. But how does innovation exist in the economic landscape? Furthermore, how does innovation spur economic growth, and what role can it play in structurally and socially reforming a knowledge-based economy?

COVID-19 is changing normal for good, with the pandemic posing as our greatest challenge since the Great Depression.

Simultaneously, we continue to face a diverse range of social, environmental, and economic challenges, such as the emergence of rapid climate change, geopolitical friction, and fiscal decline. Yet, global efforts have been forced to devote all attention to enduring these trying times, removing much sense of urgency towards our other trials and tribulations. The elusive escape route has been front-of-mind for many of us. We need to address these issues before they exacerbate and welcome the new social and economic norm emerging from the crisis. The question is, should governments attempt the return to normality, or entirely reorientate policy, adapting to the sweeping shift in social routine and economic conventions? After all, it is becoming increasingly clear that the neoclassical idea of capital accumulation is losing relevance for economic growth. Indeed, the role of innovation is more pertinent than ever before, and as COVID-19 accelerates structural change beyond our expectations, reform underpinning innovation-based growth ought to be the future of economic policy.

Innovation and knowledge are driving progress

The economic system has moved from agrarian to industrial within mere centuries, highlighted by raw production factors and an unskilled workforce. But we currently reside in a knowledge economy, a product of the rapid epochal conversion into the Information Age, a period dominated by relatively skilled workers, modern technology, and the rapid exchange of knowledge.

Given the advent of the pandemic, knowledge is more important than ever. Knowledge helps us efficiently allocate resources. It produces jobs. It creates expedient products and services. It pushes the search for a COVID-19 vaccine. Truly, the more we 'know', the more capable we become. This is the breakthrough mindset that governments and policymakers must strengthen to overcome the global recession and keep pace with the changes our economy is experiencing. In the words of evolutionary economist Mariana Mazzucato, 'governments should not return to normalcy, but should play a dynamic, proactive role in shaping markets and sparking innovation.

Economic theory suggests there are two ways to increase economic output: increasing productive inputs or developing new ways to use the same or less amount of inputs to produce greater output. Interestingly, the latter alternative is directly exemplified by goods and services created through technology, which has evidently contributed interminable benefits to society. But although new and emerging firms are necessary in the competitive landscape, the entry of new firms eventually pushes out incumbents, effectively destroying their market power. Such "creative destruction" illustrates why innovation drives economic growth and structural change.

Schumpeter's gale: creative destruction

Creative destruction was popularised by the Austrian political economist Joseph Schumpeter in 1942. It conceptualises that the entry of entrepreneurs and innovative firms is the driving force behind sustainable, long-term economic growth. Incumbent firms appreciate monopolistic competition and market barriers for some time. To penetrate the competitive terrain, new firms are forced to offer something new or advanced to the table, and laggards are eventually pushed out. Consequently, new technologies and processes continuously revolutionise the economic structure from within, "incessantly destroying the old one, incessantly creating a new one". Let us look at some examples.

We have experienced creative destruction in waves, typically over decades or centuries. In 2001, over 96% of Australians households owned a landline phone. In 2019, this figure has halved to 48.6%. Similarly, within two decades, the proportion of Australians that own a mobile has essentially doubled to 95.9%. Furthermore, Netflix entered the market as a DVD sales and video rental business in 1997, but eventually penetrated the streaming market a decade on. When Netflix conducted its IPO in 2002, it had a mere 857,000 subscribers. As of this year, subscription count has skyrocketed 22,070% to over 190 million. Netflix is now a billion-dollar company that has dominated the media viewership market and put significant market pressure on competitors, including mainstream television. These private sector developments are just some of many facets in the economy that are driving net growth through innovation and productivity.

Innovation within future governance and policy

So, how are we preparing for innovation-based growth? Government intervention cannot simply fix market failures when they occur. Rather, governments must cocreate markets that inspire and nurture innovative groups to drive economic growth, rewarding value creation over value extraction. This is where entrepreneurs, emerging firms, and the avant-garde come in. Despite global challenges, people and companies are still able to devise ideas in response to the budding issues insufficiently addressed by governments and incumbents. For instance, start-ups and individuals are producing and selling masks, local taxi businesses are delivering groceries, and pharmaceutical researchers are discovering new therapy solutions and efficient research models, such as for repurposing existing drugs for other life-changing applications.

It is also expected that a quarter to a half of Australia's current labour force will be automated by 2030. For jobs that are not fully automated, it holds that 60% of people's time will be spent working with technology. As such, increasing digital dependency should be met by recovery policies that reskill exposed sectors and integrate STEM development where appropriate, such as in tertiary education, retail, and relevant SMEs. In fact, the high-growth nature of SMEs generates a greater abundance of high-quality jobs than older counterparts, such as large firms with a more traditional hiring system. By refining the composition of the labour force, unemployment is cushioned as it is hoped that education and training policies can assist and retrain displaced workers, fostering free trade and skilled migration.

Furthermore, governments should invest in, provide grants for, or implement tax incentives for R&D. Reducing the cost of R&D is crucial to increasing innovation and productivity and has huge long-term benefits. It incentivises university and private institutional research, furthers scientific progress, and fills patents by private firms for start-up ventures. Start-ups and R&D-heavy organisations require institutional support to focus on meeting emerging demand through new projects, and hence act as catalysts for empowering young people and future generations of businesses in the market.

Finally, COVID-19 is accelerating many other structural shifts and paradigms, such as renewable energy, electromobility and smart-city tech. What is more, business models have transitioned to remote work, which is most likely here to stay as a portion of the generic company culture post-pandemic. Consumer behaviour is also changing, observed through the upswing of ecommerce, telemedicine, fintech, remote supply chain management and shifting labour market dynamics. These emerging markets and trends are innovations in action, spurring net economic growth by creating jobs and inspiring social and structural reform. In the words of Keynes, "Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economist". Ultimately, innovation is a quintessential part of effective and sustainable economic policy. The world is changing, and society must adapt to these shifts to remain effective and impactful when recovery arrives.

Edward Meehan

Changing our approach to aged care

Despite the "magical fantasies" we may entertain to the contrary (1), most of us will live to experience some form of disability in our old age (2). The care our government provides to aged citizens is the care we can expect will be provided to our family members and eventually, ourselves. The 2019 interim report of the ongoing Royal Commission into Aged Care Quality and Safety speaks of this care in damning terms. Its revelations of unacceptable waiting lists and patient mistreatment tell a "shameful" and "shocking tale of neglect" (3) and evidence tendered to the royal commission suggests that meeting even basic care standards would require substantial funding increases (4). Aged care expenditure totalled $27 billion in 2018-19 (1). Under the stresses of an aging population and increasing service costs, this amount is anticipated to grow by 4.3% per year in real terms in the next decade (1). Such growth in spending highlights the need for a move towards best practice in the funding of aged care and this article will explore the merits of current proposals for the future direction of this funding.

The Status Quo

The current aged care funding framework was established by the Aged Care Act 1997 and is paid for by a combination of government spending and patient co-payments (1). Aged care encompasses all care given to elderly persons with increased care needs, including that given while they are still living in their own homes. The Commonwealth Home Support Programme supports elderly Australians in home care by subsidising services which help them retain their independence (5).

When aged persons become unable to live independently, they may move into a residential aged care home, also known as a nursing home. An accommodation fee must be negotiated before entering residential care, but the government may subsidise this if an income and assets means test determines that a resident faces difficult circumstances (6).
Despite these subsidies, people receiving aged care are subject to a basic daily fee which applies to everyone, and a means tested care fee (7). Annual and lifetime caps limit the amount that can be charged in means tested care fees, but no such caps apply to the basic daily fee. There are also extra service fees for features such as food and accommodation that is above industry standard (7).

There are several issues with these arrangements. The expense of care causes many elderly patients to resort to mortgaging or selling their homes to afford fees (8). Additionally, aged care funding is drawn from general taxation revenues rather than a specific levy, which renders it politically vulnerable. Governments of the day are able to alter funding levels at their discretion such that funding may (and currently has) become insufficient for patient needs (1). Another complaint directed towards the current system is that it unduly burdens the young working age population by using their tax dollars to pay for the care of older generations (1). These issues establish why there is a push in some quarters for a new model of aged care funding.

Social Insurance for Aged Care

One proposal, discussed in the consultation paper 'Financing Aged Care' prepared for the royal commission, is a compulsory social insurance scheme (1). In such a scheme, all Australians would pay money into a pooled fund that would pay for aged care. Social insurance schemes are already in place in Australia for healthcare and accident compensation and have been used to pay for aged care in countries such as Germany and Japan (1). The consultation paper identified several benefits of a social insurance model. The contribution amount or 'premiums' for the scheme could be calculated according to actuarial principles to guarantee that sufficient money was raised to pay for expected care needs (1). Furthermore, because funds would not come from general tax revenue, aged care may be less politically vulnerable to cutbacks (1). However, a social insurance aged care model would not be without its challenges. The Henry Tax Review recommended that revenue be raised from broad tax bases such as income and consumption as the creation of many smaller tax streams risks introducing administrative inefficiency (1). Out of deference to this recommendation, the 'Financing Aged Care' paper suggested an aged care insurance levy could be applied to the personal income tax, rather than established a new tax (1).

Government-backed loans for Aged Care

Another proposal which received recent media attention is that endorsed by former Australian Prime Minister and architect of Australia's HECS and superannuation schemes, Paul Keating. Keating's proposal is the provision of HECS-style, government-backed loans to Australians entering the aged care system (9). These loans would pay for their care without depleting their assets or those of their children. In the same vein as HECS (now HELP) loans repaid following graduation, aged care loans would be paid for out of the estate of residents following their death (9). Under this system, elderly Australians would not need to sell their homes while alive to pay for treatment and the financial burden on younger Australians would be lessened (9). Keating also emphasised a more pragmatic advantage of the scheme. As recent elections have shown, the imposition of a new tax or levy, as would be required under a social insurance model, is a politically dangerous move. A HECS style loan scheme would sidestep this issue and be easier to implement into law (9). The scheme may run into other issues, however. Much like HECS itself, governments would be obliged to lend money at nominal interest rates which may not be repaid. It is predicted that unpaid HECS/HELP loans will cost the budget $180 billion by 2025-26 (10), and it seems likely that an aged care loan scheme could attract similar costs. In addition, Keating himself flagged another potential obstacle to the scheme: the perverse incentive for patients to offload their assets before death leaving insufficient funds in their estate to repay their loan (9). So, while a loan-based model of aged care possesses many appealing features, it is not without its challenges.

Conclusion

Within the pages of the interim report of the Royal Commission into Aged Care Quality and Safety, which catalogues a litany of failures in Australian aged care, is a strong call to action:

> *"This cruel and harmful system must be changed. We owe it to our parents, our grandparents... to strangers... to future generations. Older people deserve so much more"* (3).

Whether change occurs incrementally, with targeted improvements to the current model, or through larger scale reform, new ideas in economics have a major role to play in the human mission of providing older Australians with the quality of care they deserve.

Jonas Larsen

Exporting climate action

Trade lifts all boats, it's said. But while a rising tide gently shakes the yachts of the well-off, another tide obliterates fishing boats and, ultimately, the livelihoods of others. The disproportionate effect of climate change is the challenge of this century. But with the right tools we can turn challenge into opportunity. With carbon tariffs, the European Union (EU) can position itself as a leader of global climate action and create a more sustainable system of international trade.

Coupling the pursuit of growth with social concerns is not a new idea. Preferential-trade agreements (PTAs) represent a widely used tool to do just that; the 2019 EU-Mercosur agreement, for instance, bundles economic growth and environmental commitments. With its size and high-income consumers, the EU exerts substantial influence in international trade. The agreement, if ratified, would support the aspirations of the Mercosur bloc, consisting of Argentina, Brazil, Paraguay and Uruguay, to diversify their economies away from commodities to higher-value goods and services. Exerting its influence, the EU ensured the agreement also incorporated environmental concerns, including commitments to fighting deforestation and to the 2015 Paris Agreement. Such commitments are particularly relevant in the EU-Mercosur relationship; agricultural products constituted the largest share of Mercosur's €35.9 billion exports to the EU in 2019. As agriculture generates environmental externalities from methane gas and deforestation, environmental practices are critical in the region. By embedding environmental concerns in discussions of trade, PTAs can be viable alternatives to

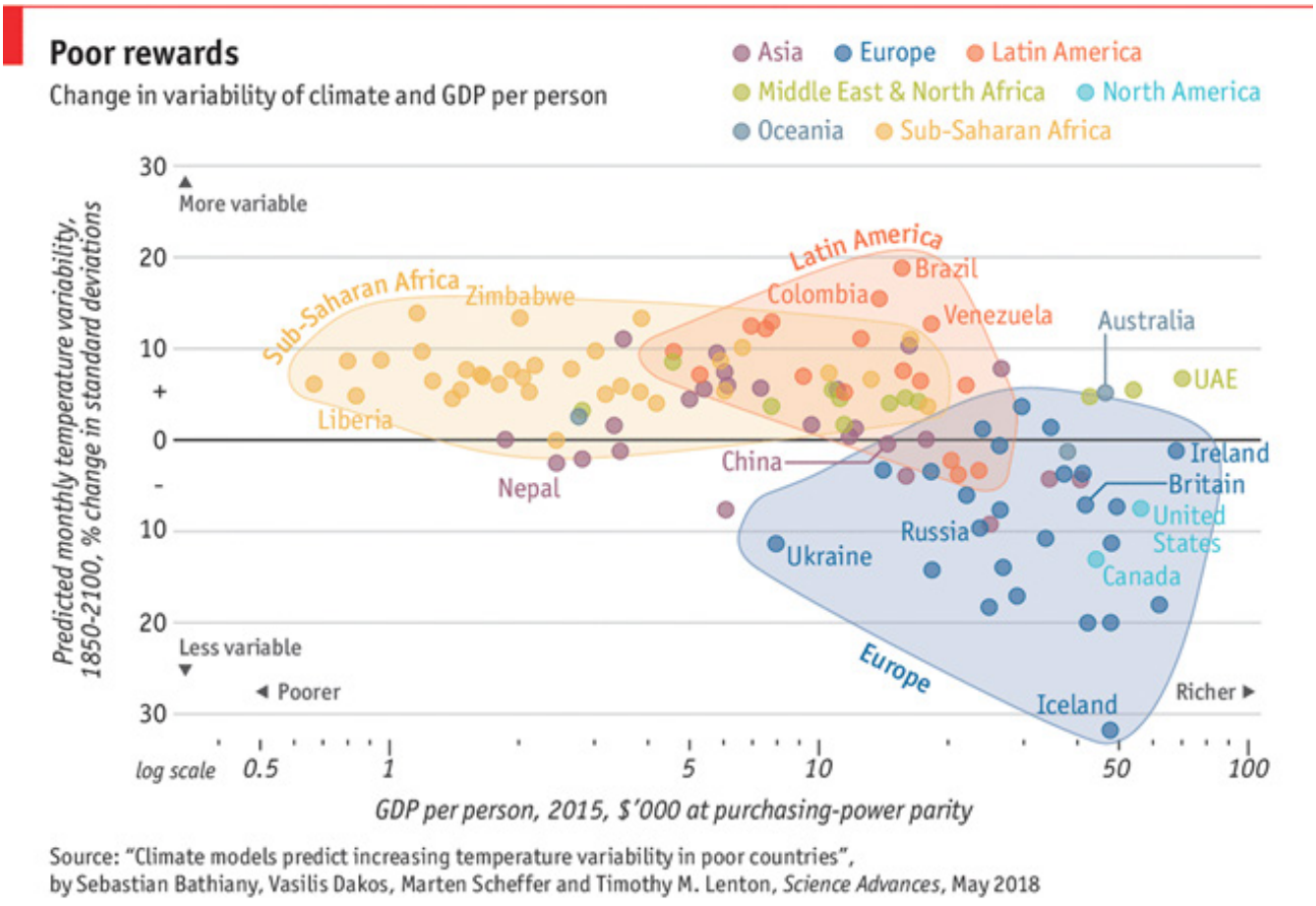
weakly enforceable international climate agreements largely outside the domain of trade.

But although environmental provisions in PTAs have become increasingly common, their effectiveness beyond fostering trade remains questionable. In the EU-Mercosur agreement, neither party is legally bound to climate action. Therefore negligence can only be punished on a case-by-case basis. But such punishment must be balanced against international harmony, as retaliatory tariffs may upset the delicate balance of global cooperation. Reduced cooperation would be detrimental to the transborder effort against climate change. PTAs may even be counterproductive to greater sustainability. While the EU-Mercosur deal addresses environmental concerns, the agreement substantially boosts trade of agricultural goods and their associated externalities. Embellishing the agreement with green concern may, at least partially, have served to deflect criticism. Thus, while PTAs constructively embed climate issues in conversations of trade, their effect remains limited.

An EU carbon tariff could prove more effective, both for the world and the bloc itself. If implemented, importers of high-carbon products must purchase import allowances for products not previously subject to carbon taxes. The concentration of carbon prices in Europe raise relative prices and reduce EU firms' competitiveness both within and beyond the union. The cost advantage of production with little to no climate regulation enables foreign firms to charge lower prices and capture larger market shares. This dilutes both EU revenue and its influence over sustainable production techniques. Further, the cost-advantage of production outside the EU incentivises relocation of EU firms to less stringent countries. This behaviour, resulting in "carbon leakage", risks leaving the EU worse off as income drops but with pollution persisting – just relocated. By diminishing the cost advantage of importers, a carbon tariff evens the playing field and incentivises innovation over relocation. The EU, consequently, maintains its influence on firms within its borders and lowers the incentive for carbon-intensive imports.

But in the arsenal of weapons against climate change, the carbon tariff is a double-edged sword. A legal hurdle to implementation, World Trade Organization (WTO) regulations prohibit discrimination against foreign producers. Although the tariff can, principally, be designed to comply with WTO rules, its controversy risks upsetting global cooperation. Should the tariff be portrayed as protectionist, other countries could introduce retaliatory tariffs. Not only would this reverse gains from trade and damage global welfare; it also jeopardises the global cooperation needed to combat climate change. The tariff would do more harm than good if hampering global dialogue.

Developing nations are particularly vulnerable to such widespread tariffs. As their development relies on access to global markets, any tariff, whether carbon tariff or otherwise, can adversely affect these economies. But this economic consideration must be balanced against the uncomfortable statistic that developing economies also bear the brunt of climate change. For instance, as illustrated on the infographic below, larger temperature swings exacerbate the frequency and impact of catastrophic weather in the less developed countries.



Source: "Climate models predict increasing temperature variability in poor countries", by Sebastian Bathiany, Vasilis Dakos, Marten Scheffer and Timothy M. Lenton, *Science Advances*, May 2018

Economist.com

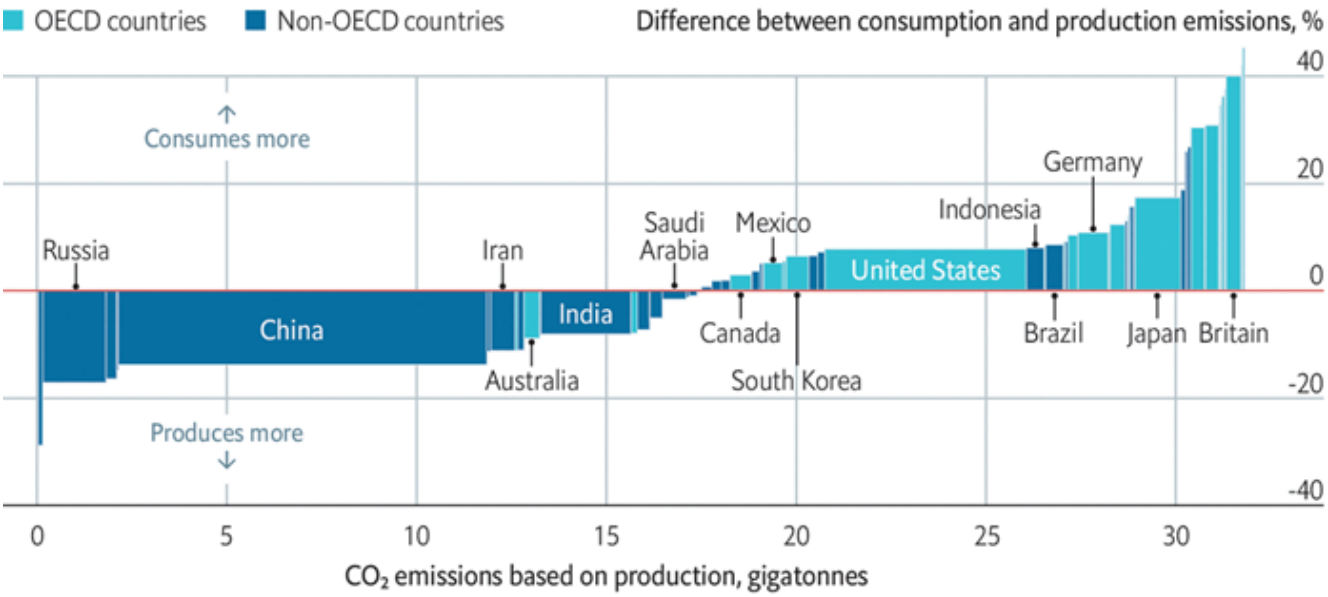
It is possible to alleviate the carbon tariff's burden on developing countries. One option is to exempt them from the tariff. But this makes their carbon-intensive products relatively more competitive and weakens the incentive to reorient their economy around low-carbon products and technology. Another option is to redistribute the tariff revenue to sustainable initiatives in developing countries. This would, however, be logistically and politically challenging. More impactful is the incentive for exporters to the EU, developing and developed, to implement carbon schemes for themselves to collect the tax revenue. Since the carbon tariff would not apply to goods subjected to carbon pricing in their country of origin, this could result in broad implementation of carbon pricing. Such schemes rank among the most effective tools for combatting climate change.

The carbon taxes can also narrow the pollution gap observed between production and consumption. This gap is evident in EU consumption: the bloc consumes 19% more emissions than it produces. China, on the other hand, tells a different story, with 15% of its total emissions originating from goods produced in China but consumed overseas. The EU-China imbalance is representative of a global emissions gap; as the infographic above demonstrates, pollution from OECD consumption generally exceeds its pollution in production. By physically divorcing consumption from pollution in production, trade enables countries to enjoy the benefits of consumption without suffering the direct impact of its associated pollution. With a carbon tariff complementing its carbon pricing scheme, the EU can narrow this gap by reducing the incentives that propel ships to EU harbours. Further, this tariff could expediate the sustainable transition of the Chinese economy and position it to reach its recently announced pledge of carbon neutrality by 2060. As the world's second-largest economy makes sustainability a key part of its development, this could provide a template for other emerging economies. A carbon tariff could thus contribute to a more sustainable, and ultimately more just, world.

The international trading system provides a framework to practice good economics for hard times. PTAs may bring environmental concerns to the negotiation table, but weak enforcement mechanisms diminish their effect. Carbon tariffs can be more influential. They are also more controversial. But to adapt to the inconvenient truth of the 21st century, controversy is inevitable. A carbon tariff may be the EU's noble attempt to make trade work not just for people, but for the planet.

Creative accounting

Global CO_2 emissions from fossil fuels and cement, selected countries, 2016



Sources: Global Carbon Project; World Bank; *The Economist*

The Economist

Kickstart your career

A career at the Department of Treasury and Finance (DTF) will see you contributing to the long-term economic outlook of the State, making a difference to all Victorians.

Find out about internship and mentoring opportunities, graduate programs and pathways at DTF.

dtf.vic.gov.au/careers

Department of Treasury and Finance

@TreasuryVic

VICTORIA State Government | Treasury and Finance

Gabriel Chenkov-Shaw

The New Age of merciless university regulation

Whilst we've all been doing our best to adapt to our online classrooms, the public policy regulating our studies hasn't exactly been supportive. The government have been very active in restructuring which disciplines have incentive to follow and which individuals are entitled to a HECS-HELP loan. The timing of these announcements is inconsiderate, and it is safe to say that opinion is divided on whether the policies are equitable. Controversially, this may be the government giving students a hint to pick a field where there is a higher likelihood of finding a job. This certainly is a statement from the Morrison government that 'we've had it too good for too long' as university life is set to be rattled even more than it already is.

Students have been dealt a difficult hand this year in having to suddenly shift to online learning. Many students prefer the original face to face interaction as it can be more engaging, which leaves some students less equipped than others. In the midst of all this, students have also had to emotionally combat emphatic headlines of proposed changes to higher education as we know it. Threats to our beloved HECS aren't taken lightly in addition to higher fees for less numeric disciplines. The first major announcement outlined an increase of fees for prospective students that wish to enrol in humanities, social sciences, or law. These price rises reach as far as 113% whilst STEM, teaching, agriculture, and nursing subjects receive a decrease in fees. Shockingly, the price increase for humanities have now equated what the student contributes financially to what it actually costs to teach the course. This seems counterintuitive to the what the concept of a 'Commonwealth Supported Place' should be as students pay the full cost of their degree. Furthermore, humanities graduates earn less on average than many of the unpunished fields which may find them struggling to pay back this debt.

The very notion of discouraging an individual from their desired career path by increasing the barriers to get there is absolutely controversial. A valid argument is that students should have the right to pursue their interests and now policy is being proposed to ultimately override their intrinsic motivation. The fields of humanities, law, and social sciences frequently breed highly articulate, lateral thinkers. These curriculums make up some of the brightest minds in the nation which Australia will surely need in the future. After all, what use is strong technical knowledge if it is communicated ineffectively?

On the other hand, the unapologetic economic argument is that Australia's structural demands of employment are changing. There is a greater quantity of STEM acquainted workers demanded in today's context than those that specialise in the fields experiencing a price hike. STEM jobs are growing rapidly at a rate that is almost double that of other jobs. Although it seems unfair, this seems like the government's way of persuading students to choose a field that our nation needs more specialists in. If Australia is to be truly competitive in the future, then it is highly likely that we will need to boost our STEM arsenal. These reforms will help to prevent students from being unable to pay off debts two-fold:

1. **The debt itself is now smaller; and**
2. **There is a greater chance of securing employment**

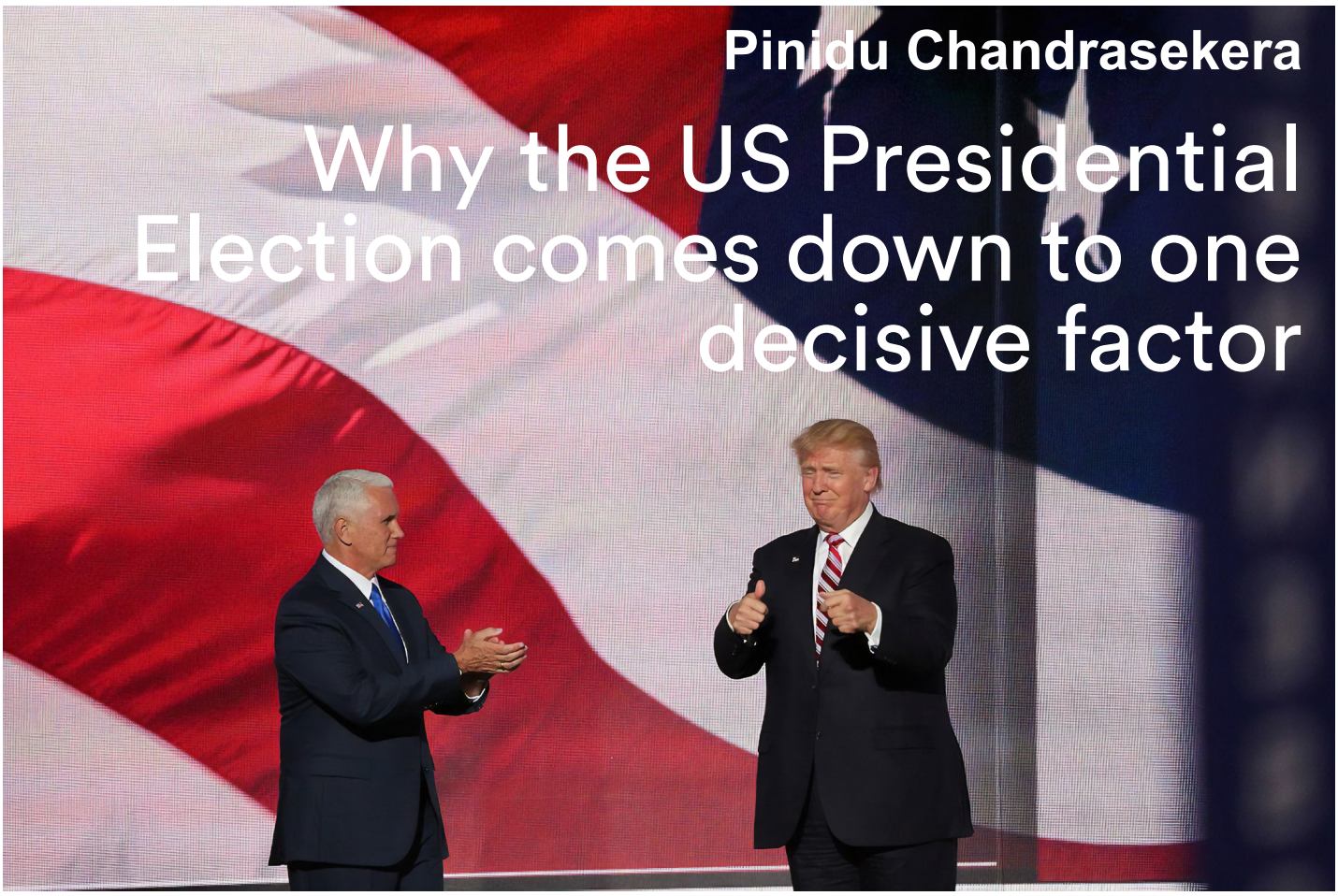
Perhaps the government's rationale is that the reward for choosing a STEM field needs to be funded somehow; this deficit being made up by students in the adversely affected fields. It is difficult to ascertain which argument is stronger as both sides of the coin present a strong case.

Continuing this ruthless theme is the government's agenda to punish those that accumulate excessive HECS debts yet have no gained qualification to show for it. These are the 'serial failures' that the Government intend to filter out. The exemplary case for this is a student who first enrolled in 1991 and has since started 44 courses at 26 different institutions, totalling a sum of $663,000 in HECS debt. Undertaking tertiary studies is a significant decision and the hope is for this seriousness to be more widely considered before enrolling. Understandably, this proposal has rattled students as many believe it "incentivises success through fear and punishment". Some of the major barriers to academic success include financial instability, disability, domestic issues, and mental health conditions. This new policy will need to identify students that have genuinely endured such disadvantaging circumstances and exempt them from such costly punishment. If it fails to do so, this policy will be a mere nuisance in the lives of already struggling students. Nevertheless, this cements the rigid theme to new regulations surrounding university in Australia.

It has been an unprecedented year for university students with macro forces writing a script that nobody could have predicted. Opinion will be divided on whether these new measures are a necessary approach for Australia's competitiveness or if it's simply unfair. Is the government taking things too far with its iron fist on higher education?

Pinidu Chandrasekera

Why the US Presidential Election comes down to one decisive factor



> *"It's the economy, stupid."*

The infamous phrase coined by Bill Clinton's campaign strategist James Carville has become a perennial wisdom of modern elections. Not only does it represent the central importance of the economy in deciding electoral outcomes, but also contextualises the triviality of other issues mostly confined to late-night cable news commentary and the political 'bubble' within a nation's parliament.

Perhaps the 2020 US Presidential Election may be the tipping point where Carville's phrase becomes obsolete. After all, what better way to take the minds of the citizenry off the economy than a once-in-century pandemic—a silent, potent beast, tearing through the social, economic and political fabric of society from Seoul to Seattle. But consider this: even in the midst of a health crisis, the economy has remained front and centre. Whether it's the spotlight placed on meandering domestic manufacturing as governments scrambled to sure up medical supplies, or the jaw-dropping scale of fiscal and monetary stimulus rolled out by treasury departments and central banks worldwide – the economy will always remain number one.

It's fair to say that with the perfect storm of identity politics, racial divisions and class warfare which has engulfed the American political climate, matters such as tax policy, job creation and trade may slip under the media spotlight. But come November 3, no matter how Americans vote, the most important determinant for a large majority of Americans will be the current and predicted state of the US economy.
To that end, let's take a closer look at how the two campaigns compare.

The incumbent: President Donald Trump's re-election campaign

Like much of his rhetoric, Donald Trump's re-election platform is wrapped up in an 'America First' agenda. Going back to earlier this year, the foundations of the Trump campaign were starting to take shape in the midst of a crowded Democratic primary. Buoyed by record highs on Wall Street and generally strong macroeconomic indicators, the incumbent had built up momentum before the unprecedented impact of COVID-19. Eight months down the track, the tone of the Republican campaign has now shifted to spruiking a return to America's pre-COVID economy, which is familiar territory for Trump given that appeals to nostalgia were at the heart of his 2016 victory.

On a policy level, Trump's biggest sell is on tax, seeking to present himself as a pro-business candidate armed with the appeal of lower taxes and smaller government. In a way, this

economic platform typifies the economic policy offerings of a GOP candidate, but of course Trump is anything but an establishment Republican. Indeed, in mid-September as congressional Democrats and Republicans conducted a series of on-and-off negotiations over another stimulus package, POTUS actively encouraged the GOP to abandon prior notions of fiscal conservatism and discipline, ruffling a few feathers on the red-side of Capitol Hill. But then, only a couple of weeks later Trump sent markets into dive by declaring that no further stimulus would be provided until after the Presidential election. Not that consistency has been a particularly notable feature of this administration.

Of course, no analysis of the Trump economic agenda would be complete without acknowledging the most significant reform to the tax system in three decades—delivered just before Christmas 2017. The Tax Cuts and Jobs Act filled the stockings of American businesses, reducing the corporate tax rate from 35 per cent to 21 per cent alongside further incentives to encourage capital investment. For householders, the bill was less groundbreaking but delivered lower income tax rates in seven brackets, doubled the child tax credit, and repealed the tax penalty for not having health insurance.

The true impact of the tax reform is a point of controversy amongst economists and along the partisan divide. While the Trump campaign's assertions in relation to a steadily decreasing unemployment rate and consistent economic growth are not false, there is suggestion that the impact may have even been countercyclical as unemployment had been sitting at a relatively low 4.1 per cent when the reform was passed. Given the scale of the reform it would be fair to assume that growth figures haven't quite matched expectations, with quarterly growth slowing over the course of 2018 and annual growth figures peaking in June of that same year. However, the job creation narrative has some merit, with the unemployment falling to 3.5 by October 2019—the lowest level in five decades.

One of the more defining features of the Trump administration (and a key tenet of his 'America First' agenda) is trade protectionism. However, Trump's rhetoric has far outpaced the more mediocre alterations made to US trade policy during his first term in office. For instance, the last four years has seen the North American Free Trade Agreement (NAFTA) renegotiated as the US-Mexico-Canada-Agreement (USMCA), and the first phase of a supposedly new trading relationship with China. Australia veered perilously close to suffering from Trump's protectionist wrath following the announcement of steel and aluminium tariffs in 2018, but managed to obtain an exemption alongside Argentina and Brazil.

Whether Trump's tariffs and hard-line protectionism saved American jobs is another point of conjecture, as the ripple effects on import-dependant industries is difficult to determine with accuracy. While analysis from the Brookings Institution suggests a beneficial impact for American workers in the industries directly protected (such as steel and aluminium), secondary industries reliant on cheaper imports may have witnessed a rise in production costs—reducing the capacity to support large workforces.

A Trump victory in November may also foreshadow an even greater shift to inward trade policy, exacerbated by the COVID-19 pandemic and unfulfilled promises from his 2016 campaign (including a United States withdrawal from the World Trade Organisation). This outline of Trump's economic platform may read like a report card, but that in itself is indicative of incumbency and of a President seeking re-election whose agenda remains a continuation of that outlined four years prior. That much was confirmed by the tone struck by Vice President Mike Pence during the VP debate in Utah. Normally the Presidential debate would have been the reference point when contrasting the candidates' respective policy offerings, but as echoed throughout the media in the aftermath of the spectacle, those ninety minutes a week earlier may as well have been in French.

Ultimately, the menu at Kitchen Trumponomics places simplicity as its core: jobs, tax cuts, and trade protectionism, all washed down with a seasonal offering of COVID-relief stimulus.

The challenger: Joe Biden's economic policy agenda

In comparison to the Trump campaign, former Vice President Joe Biden and running mate Senator Kamala Harris bring a platform less centred around economic policy and thus providing a clear choice for American voters come election day. In comparison to an economics-heavy Republican campaign, the Democrats are trying to shift the focus onto healthcare, the environment and social inequalities.

The Democrats' economic platform is centred around a promise to repeal Trump's 2017 taxation reform. The exact nature of how far-reaching this repeal would be has become a point of contention between the two campaigns, particularly during the VP debate between the Vice President and Senator Harris. Harris indicated that a Biden administration repeal of the tax cuts would only impact those earning more than US$400,000 per year. This is disputed by the Republican campaign, claiming that the package helped an average American family of four save an average of US$2,000 per year. This figure is backed by Department of the Treasury analysis which categorised the aforementioned average family of four as earning US$73,000 per annum. For Senator Harris' promise to be fulfilled however, a Biden administration would have to hope for a favourable congress and senate composition allowing them to make precise incisions into the Trump tax plan.

The proposed changes to the 2017 tax reforms presents the dichotomy between the two campaigns, as Biden opts to focus on equity, income redistribution and big government infrastructure spending. Further changes to the Tax Cuts and Jobs Act would include a restoration of the 39.6% top individual tax rate, an increase in the corporate tax rate from 21% to 28%, and the reduction of tax incentives for capital gains and payroll tax.

The biggest economic uncertainty is whether a potential Biden administration's economic agenda truly improves the material living standards of Americans, or whether its less business-friendly elements slow economic and employment growth as the nation heads into the post-pandemic recovery. On one hand an increased corporate tax rate would already be raising concerns surrounding the international competitiveness of US companies and their domestic operations. Fair to say that if Wall Street alone were deciding, Trump would waltz to a second term.

Combined with the repeals to existing legislation, the Biden/Harris ticket promises an increase in the minimum wage to US$15 an hour alongside a suite of reforms in education. The spending proposals include the provision of tuition-free public college for children of families with income under US$125,000, federally funded universal pre-kindergarten, and a partial waiver on student debt loans.

Two of the signature policies of the Democrat campaign come through overhauls to healthcare and energy infrastructure. A return to an Obama-era Affordable Care Act places a limit on the percentage of net income any citizen would pay on health insurance at 8.5% and introduces a public health insurance option. Environmental policy changes go even further, with a proposed US$2 trillion splashed across clean energy infrastructure reminiscent of the Green New Deal.

Such a drastic tax-and-spend approach is perhaps an artefact of a Democrat Primaries race initially dominated by the left-wing agendas of Bernie Sanders and Elizabeth Warren. Biden, running as a moderate, surged back to claim the nomination, however the pressure of the more radical platforms presented by others within his party has forced the former Vice President to craft his campaign delicately to unite both radical and moderate wings of the party.

When it comes to trade policy, many expect that a Biden administration would maintain a level of caution whilst dealing with an assertive China. However, it is safe to assume that a change in government would signal a change in the American attitude towards the role of intergovernmental institutions crucial to the global political fabric. While a second Trump term may see America withdraw from the WTO, a Biden victory might see a pivot towards repairing ties with the organisations and other global actors including the World Bank and the International Monetary Fund (IMF).

Final word

Alongside the economic questions surrounding the effectiveness of the Democrat platform are even greater political ones. For all the analysis of the presidential tickets, the composition of the House and Senate will be hugely influential in determining the ability of the future administration to implement its reforms.

Americans have a clear choice this November. We know that no matter the circumstances, the economy is an indisputable determinant of election outcomes. The only question that remains is whether the voting public want a pro-business, small government, market-based recovery, or whether COVID has altered their appetite in favour of larger government, wealth redistribution and public investment.

AITHER

Make better decisions

Aither is a leading advisory firm providing services in economics, policy, strategy and performance. We specialise in water policy and management, water utilities and infrastructure and natural hazards in the public and private sectors across Australia and internationally.

Our vision is to inspire and enable positive change in the management of water and natural resources. At Aither, we are passionate about what we do and motivated by working collaboratively to address complex and challenging problems. Our economics team uses the latest methods in economics and data science to provide clear and actionable evidence for clients that meets their needs and improves community well-being.

Find out more at **www.aither.com.au**

Certified B Corporation

We are a certified **B Corporation**. B Corporations are committed to maximising shared value, not just shareholder value. As consultants, our core business is empowering government and business to re-examine and improve the way they operate. Seeking and maintaining our B Corp certification is part of our internal commitment to do the same.

Our values

All Aither employees share a set of three common values. These values ensure we continue to produce high quality work, facilitate collaboration and align us with our vision.

Excellence

Achieving excellence through diligent application of our expertise, communicated clearly and concisely.

Integrity

Building meaningful relationships and work by acting fairly, honestly and with respect.

Commitment

Realising our vision by being committed to learning, improving and staying the course.

/aither

@aithernews

ZeXin Yuan

Cheer up; your life is not that bad – the headwind and tailwind asymmetry

We are all facing stiffer headwinds than usual at this time. At a macro level, Australia's GDP has fallen 7.0% in the June quarter 2020 with a record fall in household consumption of 12.1%. At a micro level, a survey distributed in April 2020 showed that Australians have suffered negative changes in physical activity, sleep, alcohol and smoking since the onset of the pandemic. Associated with this changes is higher depression, anxiety and stress. Unsurprisingly, Lifeline has seen a 25% increase in calls and with stage 4 restrictions introduced in Victoria, a 30% increase for Victorians.

It is easy to feel distressed when facing stiff headwinds. This article will not try to convince you not to feel bad at all. When facing headwinds, it is natural for us to feel pressured and anxious. However, let the article inform you of the asymmetry between headwinds and tailwinds – some good economics for hard times. Insights from psychology and behavioural economics may help you understand your life is not as terrible as it seems.

What is the headwind and tailwind (asymmetry)?

The asymmetry argues that headwinds are 'more available' to us than tailwinds due to the availability heuristic. Heuristic is a fancy term used in psychology and behavioural economics for 'rule of thumb'. We frequently employ heuristics to help us make decisions and judgements because we do not have enough cognitive capacity to use cost-benefit analysis in every decision.

The availability heuristic is the rule of thumb we employ when assessing the probability of an event occurring. However, it is prone to errors. Consider the following question: Is Dhruv a common name? You would likely say no if you are not from India. But in India, it is a common name, and because India has a huge population, it is also a common name across the globe.

As the example illustrates, using the availability heuristic can lead to false judgments of probabilities. In the context of headwinds and tailwinds, relying on the availability heuristic can make us falsely perceive that we are facing more headwinds than tailwinds because headwinds are more readily available. We simply cannot ignore headwinds because we have to face the barriers to overcome them, whereas tailwinds 'do not command the same level of attention'.

Is there a headwind and tailwind asymmetry because of the availability heuristic? (Findings from research by Thomas Gilovich & Shai Davidai)

After the release of a seasonal schedule for 2014, fans on Reddit commented on their teams' schedules. Several sports enthusiasts were hired to sort commentaries into categories of 'bemoaning bad news' or 'celebrating good news' on a scale of -2 (strongly focused on the tough road ahead) to 2 (the team is at an advantage). The results were consistent with the existence of the asymmetry, with 41% of the fans' comments focusing on the negatives and only 21% focusing on the positives of their teams' schedules.

However, the results were also partly consistent with the theory of self-serving bias. Self-serving bias suggests that 'under

certain conditions, esteem needs may be best served by making counter defensive attributions.' For fans to claim their team will experience a headwind, it will allow the fans to excuse their team's future failure if their team does not win, and will make their team's victory more significant if their team does win. Self-serving bias can co-exist with the availability heuristic; both tend to make fans more willing to express that there are more headwinds than tailwinds in their comments. Therefore, if one wants to prove the effect is indeed caused by the availability heuristic rather than self-serving bias; one should exclude the effect of self-serving bias to the extent possible.

Competing contestants in a trivia contest were presented with two lists of categories titled 'your category' and 'your opponent's category'. Each of the lists contained five easy categories and five hard categories, with 20 in total. After the contestants have familiarised themselves with these categories, they were shown 30 categories (with ten from 'your category'; ten from 'your opponent's category'; and ten from neither). They were asked to identify whether those categories belonged to 'your category'; 'your opponent's category' or The results showed that the contestants identified almost equally easy and hard categories from their own list. However, they identified far more easy categories from their opponents' lists. This is consistent with the asymmetry, as easy categories from the opponents' lists will be headwinds for the contestants. Importantly, such results cannot be explained by self-serving bias since failing to remember what the opponents will be asked neither gives the contestants an excuse for their failure nor does it make their victories more significant.

The takeaway

We notice headwinds more than tailwinds due to the availability heuristic. When we falsely believe our road has been particularly difficult, it is easy to become resentful of those we falsely perceive to have led an easier life. We can also quickly become distressed if we focus too much on headwinds and fail to appreciate our tailwinds.

To rebalance the asymmetry, we need to focus on our tailwinds which have helped us along the way. Ask yourself: what are some good things that have helped me to where I am today? After considering your tailwinds, your life is not that bad right?

neither.

Jeremy Mann

COVID-19 and the revival of the Australian manufacturing industry

Does the recovery of the Australian economy depend on a manufacturing boom?

If there was ever a time where the Australian economy required a resurrection of its stagnant manufacturing industry, it would be now. The COVID-19 pandemic has come as a drastic shock to the global supply chain, forcing production to adapt and shift towards new technologies. Governments, businesses and consumers are coming to terms with a grim economic outlook involving widespread unemployment, stagnant wage growth and a significant decline in output. As such, a revival of the manufacturing industry will be the cornerstone towards a recovery of the Australian economy.

The historical rise and fall of the Australian manufacturing industry

Long gone are the days of newly minted cars rolling out of factory doors and prime Merino sheep wool being exported across the world. At the height of the 1960s, manufacturing accounted for 25 per cent of total gross domestic product (GDP), which is in stark contrast to today's diminished output figures. With this fundamental sector held secure by decades of trade protectionism, the Whitlam Government oversaw a subtle growth in imports, with tariffs being cut by 25 per cent in 1973-74 leading to a rapid increase in the volume of overseas manufactured goods arriving in Australia.

Detrimentally, then-Prime Minister Bob Hawke chose to adopt a rampant agenda of trade liberalisation, breaking away from the previously established norms. This shift was considered by the government at the time to improve Australia's international competitiveness against the growing markets of the Asia-Pacific. Renowned for iconic brands such as Holden and Ford, the Australian automobile industry accounted for just 54 per cent of the total market share with almost 265 000 locally-produced units sold in 1996. In 2017, the decision was made to close Holden's production of new cars in Victoria and South Australia, leading to an estimated loss of between 30,000 to 50,000 jobs and marking an official end to the automobile manufacturing industry in Australia.

The current state of manufacturing in Australia

Presently, Australia's industry capabilities are largely driven by technological development within advanced manufacturing. This production is concentrated in key areas such as the aerospace sector, railway engineering and scientific research. In this way, Australia has provided pivotal links towards establishing new technologies utilised by global companies. The advantages of these discoveries made by vital research and development (R&D) coincides with a tax incentive from the government for manufacturing firms that incorporates innovative production methods.

A government-supported innovation has been demonstrated through initiatives within the defence industry such as

the Naval Shipbuilding Plan, securing up to A$183 billion in funding and generating a stable and highly-skilled workforce. This monumental program aims to create 15,000 new manufacturing jobs in the Australian economy in a period where unemployment is at higher than normal levels.

Technological development: looking towards the Asia-Pacific region

Over the next decade, Australia has the potential to capitalise on crucial trade partnerships within certain key Asia-Pacific export markets. This opportunity is especially prevalent in the fields of technological development and digital manufacturing. Amongst the ASEAN nations, the COVID-19 situation has forced online education and business services to adapt to new technologies and operating models amongst a challenging competitive landscape.

For example, Thailand's Industrial Promotion Department has launched partnerships with universities and businesses to develop software aimed at improving productive efficiency and output within the manufacturing sector. In Singapore, the ICT sector has been one of the main drivers towards enhancing productivity and shifting business processes towards a more digitised and accessible environment. Producers in Australia have a mass of opportunities to harness resources within these markets, meeting the needs of consumers and utilising an increase in overseas demand.

Additionally, the current political tensions between Australia and China have had a significant impact on domestic manufacturers. Local producers of exportable goods should consider exploring alternative markets where there is a strong demand for quality Australian-made products. Recently, Australian furniture manufacturing start-up and entrepreneurial success story, Koala, moved its production of mattresses offshore to China, due to the greater incentive for firms to utilise cheaper foreign inputs.

Of course, this reality presents the challenge of maintaining a sustainable manufacturing sector in Australia throughout the long-term despite an overall lack of competitiveness and efficiency. However, once the global economic situation appears more stable and optimistic, the Australian economy can recuperate from the COVID-19 downturn through diversified trade relationships emphasising the manufacturing sector.

Is trade protectionism necessary?

Due to the decline in the prominence of the Australian manufacturing industry, discussions have taken place over the strategic aims involving trade policy into the future. Member of the federal government's National COVID-19 Co-ordination Commission, Andrew Liveris has stood up for Trump's tariffs on China as a viable solution to Australia's current economic woes affecting households and firms.

Amongst supporters for the reinstatement of protectionist measures, there is genuine consideration of effective policy strategies highlighting the ongoing trade war between the United States and China. Australia currently finds itself drawn into conflicting perspectives on global integration versus economic sovereignty. A balance must be achieved between optimal market conditions for consumers and a fair and equitable playing field for our domestic manufacturing producers.

Future policy outlooks and the COVID-19 economic recovery

If the recent federal budget is anything to go off, revitalising the manufacturing industry in Australia will be crucial to ensuring that the economy can reach its optimal levels again. The fundamental policy framework announced by the Morrison Government involves the A$1.5 billion Modern Manufacturing Strategy, aiming to construct stronger supply chains and make Australian manufacturers more competitive. The comprehensive package intends to strengthen national resilience in the event of another pandemic. In addition to this, it focuses intently on funding research and development initiatives that benefit industries as a whole.

The Australia Institute's Centre for Future Work indicates that Australia's manufacturing sector ranks poorly amongst the OECD economies in terms of self-sufficiency. Given this situation, there is a clear sign that Australia needs to produce more of the goods that it utilises regularly. Not only does this economic upgrade intend to bolster the nation's sovereign capabilities, but also aims to boost jobs and income that will lead Australia out of recession.

The COVID-19 pandemic has given domestic producers the golden opportunity to reassess their current production processes. Local manufacturers have strived to harness the necessary skills and technologies required to meet a concentration of domestic demand amidst a reduction in the volume of international trade. As such, now is the time for government policy to reflect the need for a revitalisation of Australia's manufacturing sector.

Ronald Poon

A world beyond financial maximisation

Have you ever measured the worth of your day through money? Debated whether you would be better off taking on that 4-hour shift at work, or staying at home and binge watching the rest of "*Emily in Paris*"?

Well, if you have, you're not alone! It's hard not to calculate the financial gain you'll make because it's so easily quantifiable. The joy and happiness you get from seeing your favourite movie or seeing an old friend (especially in 2020), is far less so. We live in a world that worships the '*quantitative*', at the expense of more '*qualitative*' and nuanced values. We compare countries' GDP, look at the stock price of Amazon and Google, and compare salaries within our own lives. We've been trained to think that acting in our "*own self-interest*", means acting in our best "*financial interest*".

But it doesn't have to be this way! In fact, Adam Smith never linked his famous idea to "*financial maximisation*". It was actually Milton Friedman who posited that businesses have no responsibility to society, other than making a profit. So the idea of 'financial maximisation' is still relatively new (*50 years to be exact*). Which means there is still plenty of hope that we can turn things around!

1. Shortcomings of the Purely Quantitative:

It would be foolish to conclude that quantitative measures like GDP have no use. But as we all know from our introductory macroeconomics class, there are numerous shortcomings of relying solely on it as a measure of social welfare. For example, GDP doesn't account for long-term effects on health or the environment. It also doesn't factor in changes to the quality of goods, nor does it consider its distribution.

If our only goal was to increase GDP, then the ideal role model would spend a tonne of money on unnecessary lawsuits, plastic surgery and caviar. Underpinning all this, is a small, but subtle difference between the words *'value'* and *'values'*. Spending money on expensive lawyers for a small, yet frivolous claim, may bring with it a lot of financial *value*, but it may not be in alignment with our deepest core *values* as a society.

It's clear that money alone can't fulfil our deepest needs as it's just an approximate measure of value, a unit of account we use to buy things we want like Korean Fried Chicken or new sweatpants. Letting financial metrics define our daily decisions and economic recovery is a dangerous and slippery slope. We need a new system that encompasses all our different values. We need Bentoism.

2. Bentoism:

I'm sure you're all familiar with the famous Japanese Bento Box. A little bit of meat, some rice, some salad, maybe even salmon and avocado sushi if you're lucky! The point is that there's a little bit of everything. All your major food groups in the convenience of a cute and compartmentalised wooden box. According to Kickstarter's co-founder, Yancey Strickler, it turns out that it's not only perfect for organising your lunch, but also your life! In his 2019 book, "*This Could Be Our Future*", Strickler outlines the concept of "Bentoism".

He approaches the task of *'rational-decision making'* from a birds-eye view, taking into account our full range of values. As seen by the "bento" above, our life can be broken down into four boxes: Now Me, Now Us, Future Me and Future Us. Bentoism goes beyond financial maximisation and takes a truly multi-dimensional approach to acting in our own 'self-interest'.

For example, you might've recently been offered a high-paying job at a company you don't necessarily agree with. "Now Me" would tell you to take it for financial security. "Now Us" (which includes your friends and family) would probably also encourage you to take it (especially given the current economic situation we're in). "Future Me" on the other hand, would probably rally against it. It wants you to live closer to your life's true purpose. "Future Us" would make you hyper-aware of the long-term impacts your work could have on future generations.

What the idea shows is that the rational individual/business doesn't always seek to maximise profit. It could be in your best interest to run a fundraiser or volunteer time teaching at a school! These things don't have to be irrational or purely altruistic. It's possible that behaving 'selfishly', could mean throwing together a nice meal for friends, or writing a free article like this, simply because you think society would be better off if it became a little more generous!

3. New Tools for Difficult Times?

At this point, you're probably thinking these 'normative ideas' are great, but they're not really that useful unless you can put some stone-hard numbers and facts on them. For those more mathematically inclined, you're probably thinking how do I derive one of these "*Bento*" boxes? It's just not possible! As much as I would like to walk you through the proof and show that the answer is always some variation of:
(a—c)/2, I can't. These things are naturally subjective, and we need to embrace the beauty of it.

We need to learn how to incorporate nuanced ideas of health, happiness and fulfilment into the reductive and quantifiable. Examples of this already happening around the world include Bhutan's Gross National Happiness Index and the OECD's Better Life Index. A little closer to home is New Zealand's introduction of their first "Wellbeing Budget". With so much data and information at our fingertips, it seems almost archaic to purely focus on a single number such as GDP.

Innovation doesn't always have to come in the form of radical ideas. It could be as simple as revisiting old ones — ones that seem buried deep within our psyche. Perhaps it's not all about introducing new tools and theories. Perhaps the answer to 'creating value', comes back to re-aligning with our 'deepest values'. Maybe only then, will we finally figure out what it means to be truly rational.

Travis Huynh

How can monetary policy still be effective in a low interest rate environment?

The COVID-19 pandemic and resultant lockdown have led countries into recession. Central banks have an essential role to play during these times and must enforce policies that minimise the negative economic impact.

The Reserve Bank of Australia (RBA) strives to achieve three objectives, set out in the *Reserve Bank Act 1959*. Two of these objectives are to contribute to the achievement of full employment, as well as the economic prosperity and welfare of Australians. Between February and March, the worsening economic conditions forced the RBA to take swift action to realign the Australian economy with their goals.

In a typical downturn, the primary tool used by central banks is lowering the short-term interest rate. But for countries (including Australia) whose rates are already close to 0%, the scope for cutting interest rates is limited due to the liquidity trap. The liquidity trap is a situation where consumers are more inclined to save rather than spend despite low interest rates. At this point, further interest rate cuts do more harm than good to the economy. To encourage economic growth at a point so close to the liquidity trap, central banks have had to use other tools as a means of stimulating the economy. Such unconventional monetary policy includes the use of tools other than a change in interest rates as the primary mechanism for achieving monetary policy goals. A well-known expansionary policy used in the past (other than changing interest rates) is quantitative easing.

What has the RBA has done so far?

After an emergency board meeting the previous day, the RBA unveiled a comprehensive package on 19 March 2020 to bolster the Australian economy. Each component of the package focused on increasing the supply of credit. An outline of the package and their theoretical economic impact is as follows:

1. Lowered the cash rate to 0.25%, discouraging saving and providing an incentive to spend.
2. Established a 3-year term funding facility (TFF) to banks and credit unions. The TFF is a loan structure, which eligible credit providers can draw upon. By design, the TFF encourages banks to lend to small businesses.
3. Set a target on the 3-year Australian government bond yield of 0.25%. This target helps to reduce the interest rates on securities that rely on the 3-year government bond yield as a benchmark. It also signals to Australians that the RBA expects to keep interest rates low for the next few years.
4. Kept an interest rate of 0.1% on balances held with the RBA by other banks. The RBA adopted this policy to reduce the costs to the banking system.

Let us assume for a moment that the RBA determines that the March package is insufficient and decides to pursue further expansionary policies. What are the available options that the RBA can pursue?

With the cash rate at 0.25%, one simple option is to cut interest rates, but still keeping them in positive territory. The RBA could consider 0.1%, the interest rate currently employed by the Bank of England. But what if no rate cut is adequate to stimulate the economy? Let us consider some unconventional monetary policies.

Quantitative Easing

Quantitative easing (QE) is where a central bank purchases longer-term assets (usually government bonds) using newly created reserves. A colloquial term given to QE is "money printing", although this is only one part of the whole process. By decreasing the supply of government bonds available in the market, prices for those bonds will increase, and yields will fall. At the same time, the money supply will increase. Increased access to funds by banks and a low interest rate environment should create an incentive for banks to lend out more money.

QE has previously been implemented by the central banks of Japan, the US, Switzerland and England, with mixed opinions regarding the success of the program in each of these nations. Another important consideration for policymakers considering undertaking QE is how successful the policy will be. There has, arguably, yet to be a successful winding back of QE in any country.

Foreign Exchange Intervention

In theory, a lower Australian dollar (AUD) helps the Australian economy in its recovery, because exports become "cheaper" for overseas buyers. Imports also become more "expensive" for Australians. These two effects together encourage spending on Australian goods and services. If the RBA wanted to lower the value of the AUD, they could do so by increasing the supply of the AUD in the foreign exchange market. The process of manipulating exchange rates in this way is known as intervening in the foreign exchange market. From basic economic principles, an increased supply causes a decrease in the value of the AUD.
However, travel bans have significantly affected the tourism and education sectors in Australia. This means that the predicted increase in demand for currency may be insignificant. In other words, the full effects of foreign exchange intervention will not be realised as long as the travel bans remain in place.

Negative Interest Rates

Another policy option is to adopt negative interest rates. First adopted by the central bank of Denmark in 2012, negative interest rates are supposed to punish savers and reward borrowers. Think of it as the opposite of a typical bank; you are given extra money to borrow, and you pay a fee to deposit your money. Intuitively, if saving money results in losses, people would be expected to spend more.

In practice, however, there may be unintended consequences. Suppose savers are guaranteed losses on their deposits. In that case, they may instead choose to store their savings at home, lowering the total deposits in banks. Banks, in turn, may be reluctant to pass on negative rates to depositors. Additionally, since banks have to pay interest to borrowers, they may become unwilling to lend money. At this point, negative rates will have caused a contraction in the value of loans taken and therefore decrease total spending in the economy.

Bottom Line: Incentives are Paramount

Other options include lowering the reserve requirements by banks and increasing the inflation target. These options have their own way of stimulating the economy but also come with their own complexities.

Regardless of the policies adopted by the RBA, the biggest considerations must be regarding the strength of the incentives generated by each policy. Lowering the cash rate will only be meaningful if it causes a material increase in business lending and consumer spending. The success of any policy introduced by the RBA is entirely dependent on how strong the incentives are for consumers and businesses to act in line with the RBA's goals.

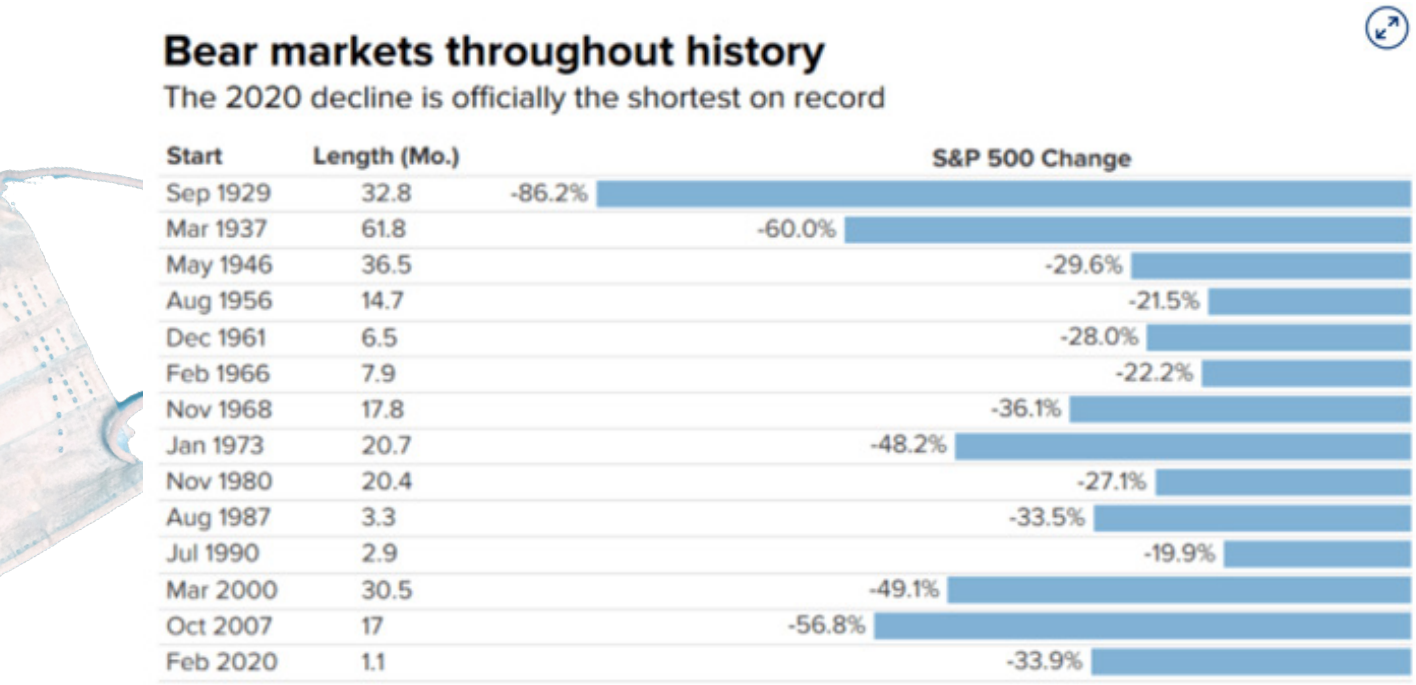
Insight into the rebound of 2020's stock market

With the global coronavirus pandemic causing devastating economic disruptions, the recent selloff in the stock market comes as little surprise. However, what may have come as as to surprise to many would be the speed with which the stock market has recovered, despite many underlying problems which continue to persist. This article, therefore, takes a look at some of the factors that have driven the recovery of the U.S stock market.

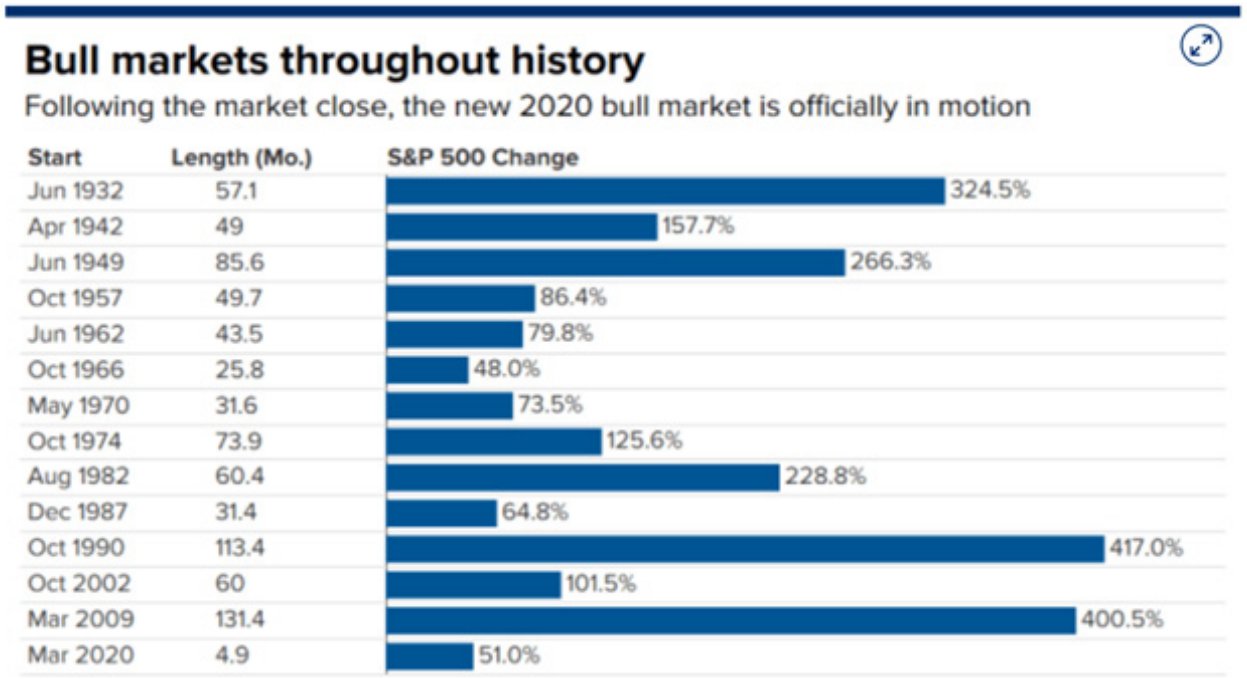
Timeline:

[Figure 1] US Stock Market (Dow Jones, S&P500 and NASDAQ) return for the period between 1st January 2020 and 23 September 2020. Source: Wall Street Journal.

The pandemic selloff in the stock market began around late February as investors grew concerns over the economic problems from rising coronavirus cases within the U.S. These impacts included the sharp increase in unemployment and collapse of the hospitality industry as restrictions were implemented. The selloff was further exacerbated by the failure of OPEC+ to agree on an oil cut that lead to the collapse of oil price. By late March, U.S. stock indexes had dropped more than 30%, setting a record for the fastest bear market in history [Figure 2]. Yet, despite continuing rising coronavirus cases, the stock market had recovered most of its losses by August, also setting a record for the fastest bull market in history [Figure 3].



[Figure 2] Comparison of the length of each Bear market in U.S history. Source: CNBC.

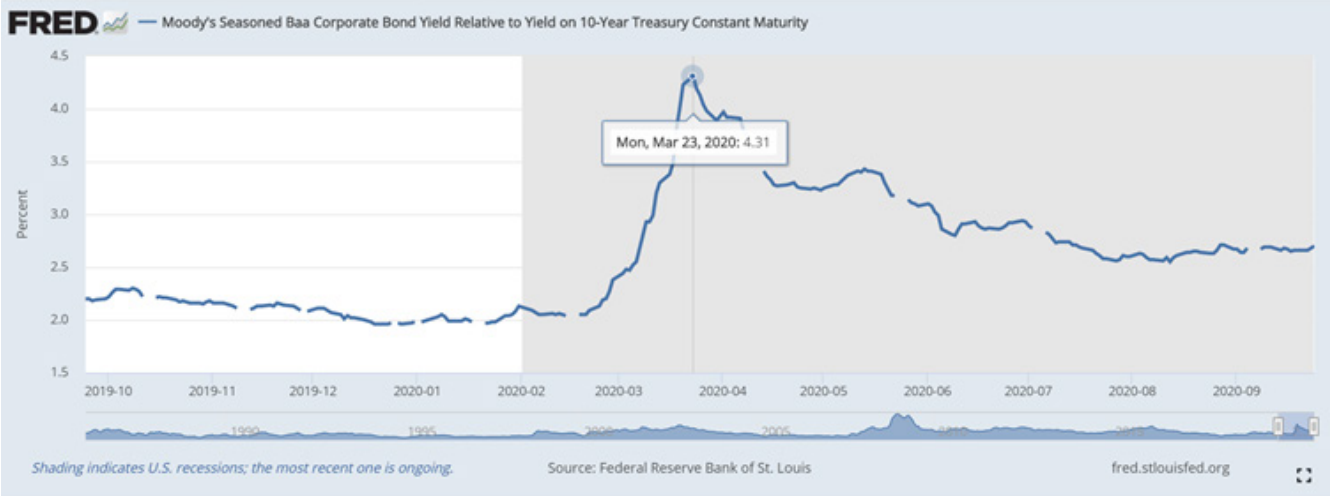


[Figure 3] Comparison of the length of each Bull market in U.S. history. Source: CNBC.

Factors that have contributed to the recovery of the stock market.

Federal Reserve of America

Since March 3rd, the Fed has lowered the federal fund rate by 1.5% to a historically low range of 0% and 0.25%. By March 23, when the U.S. indexes reached their lowest point in the bear market, the Fed expanded its initial securities purchases of Treasury securities ($500 billion) and Mortgage-backed securities ($200 billion) to 'the amounts needed to supported smooth market functioning' (unlimited) and to include the unprecedented purchase of corporate debts. Furthermore, the Fed has extended its operation to lend to businesses, brought money market funds and municipals bonds, relaxed regulatory capital requirements and supported households and consumers through the Term Asset-Backed Securities Loan Facility. All these measures have helped to ensure credit continues to flow through the credit market and signalled the Fed's willingness to support the overall market. From Figure 4, the relative yield of Baa Corporate to 10-year Treasury bond jumped as market instability drove investors to sell riskier bonds (spread increased). Subsequently, the market function has improved and such spread has decreased implying a lower borrowing cost for companies. By ensuring the liquidity and confidence of the credit market, this helps to reduce the chance a financial shock which could result in a series of corporate defaults. As Jerome Powell, Chairman of the US Fed, said in an April conference: 'Many companies that would've had to come to the Fed have now been able to finance themselves privately'.



[Figure 4] Difference between Moody's Seasoned Baa Corporate Bond Yield and 10 year Treasury yield. Source: Federal Reserve Bank of ST. Louis.

Furthermore, the historical low risk-free rate has also made risky investments such as stocks an attractive alternative investment. All else being equal, the drop-in risk-free rate would have increased equity valuation.

Market Optimism

The stock market is said to be a leading indicator of the economy. It is not a direct representation of the current economy but a forward-looking representation of what the market expects the economy will be. Although pandemic selloff occurred in late February, the unemployment rate only peaked at 14.7% by April. Additionally, the stock market has already reached above the pre-crisis level in August despite the unemployment rate (8.4%) still being higher than pre-crisis (3.5%). One explanation would be the positive market sentiment over the optimism of a potential vaccine.

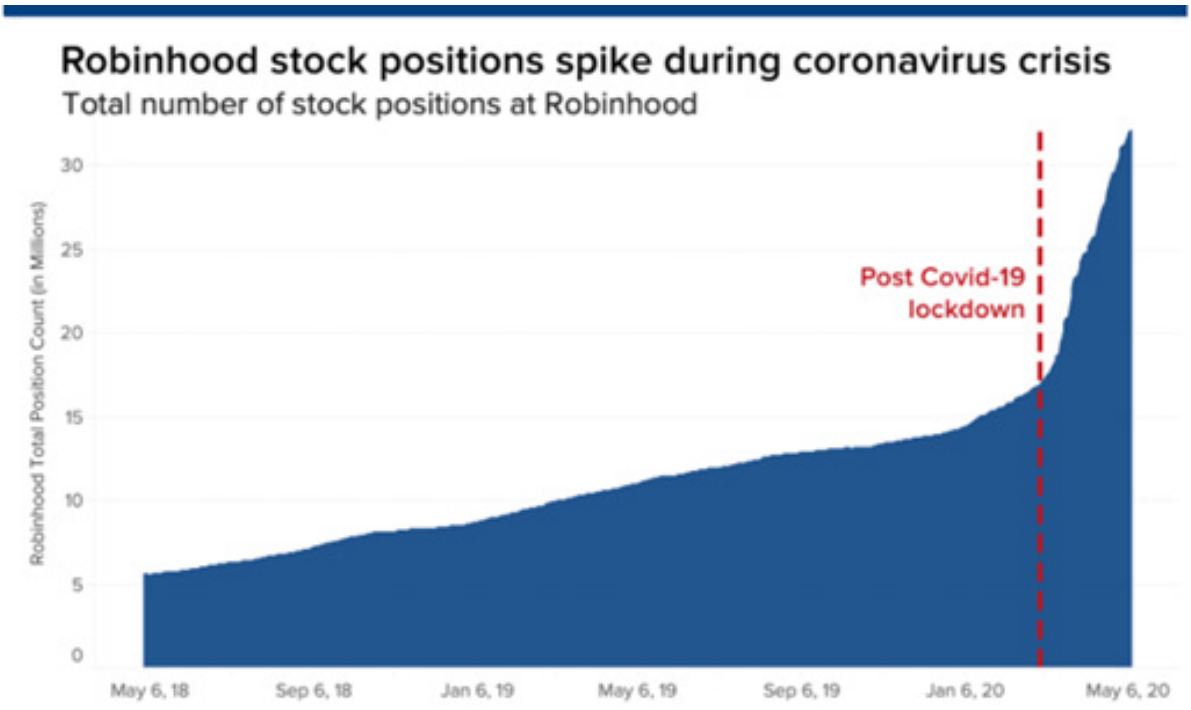
Furthermore, the uniqueness of this crisis is that it shifts consumer spending to certain sectors including technology and healthcare. These sectors benefited significantly as people spend more time on 'home-based' entertainment and become more cautious about personal health. Coincidentally, both technology and health care comprise over 40% of the S&P 500 weighting, helping to fuel the recovery of the stock market. NASDAQ, a technology-heavy weighted index, has already returned more than 20% year to date comparing with other indexes [Figure 1].

Retail investors and…Robinhood Traders?

Another phenomenon during this stock market volatility is the influx of retail investors trading stocks. During stock market volatility, the total numbers of stock positions at Robinhood have spiked [Figure 5] and online U.S brokerage firms such as Etrade and TD Ameritrade recorded over 150% year over year increase in first-quarter accounts opening. Retail investors now account for roughly 20% of stock market activities comparing with only 10% in 2019. However, did retail trade drive this bull market? It depends on market liquidity. During the bear market as liquidity decreased (particularly small market capitalisation stocks), the influx of retails trade did indeed create significant forces on equity prices in a low liquidity environment. However, as the capital market improved, this force would have diminished.

Interestingly, a research by Barclays actually found a negative correlation between the number of Robinhood customers holding a particular stock and the stock's return. Using Fords as an example, the number of Robinhood customers holding the stock increased by 52% as Ford's stock price fell by 56% from February to March during the market selloff. From April to June, Ford's stock rebounded 88% while the number of users holding the stock further increased by 67%. However, from 8th June to 26th June, the stock has fallen 19% despite the stock holding of Robinhood customers in the company increasing by another 4%.14

All this shows that retail investors did play a force in this market return. However, this force did not solely affect equity valuation and market level.



[Figure 5] Robinhood Total Position between May 6 2018 – May 6 2020. Source: CNBC

Going Forward

There is always going to be some disconnect between Wall Street and Main Street. The stock market reflects the market perception of the economy going forward. However, this is based on market sentiment and this can change. Beneath each piece of paper (stock) in which people invest, speculate or gamble, is a company, a business. In the long run, stock price reflects how well the fundamentals of a company are doing.

By Line

The US stock market has been very volatile in 2020, breaking the record for the shortest bear market and the fastest bull market in history. Klinsmann Lee takes a look at some of the factors that have driven the optimistic momentum to the rebound of 2020's stock market.

Klinsmann Lee is a fourth-year commerce student with passions for intrinsic valuation and fundamental analysis. Recommended books: Beating the Street – Peter Lynch, Investment Valuation (textbook) – Aswath Damodaran.

Nigel Pereira

Economic rationality

Classical economics revolves around the assumption of rationality. A concept that is never fully detailed nor defined in textbooks. Often considered a simple concept, rationality is assumed to be common knowledge for students of economics. Ironically, as we seek to clarify what rationality is, we have more questions than we do answers. Yet all the while, identifying rational behaviour is a task that causes many people no issue. So how can a concept so easily identifiable be at the same time so incomprehensible? In this discussion I aim to utilize economic sociology to explore rationality and how its spectrum of definitions plays a role for economic policymaking during very hard times.

Neoclassical economics is the orthodox school of economic theory which assumes rational agents. Yet, when catastrophe arises, people's decisions appear to be anything but rational. Instead of rational behaviour, we see choices which reflect social norms and dissociated perceptions. For example, during the initial outbreak of Covid-19, we experienced essential goods such as pasta and toilet paper being hoarded. Yet, the aspiration of consumers was not one of maximising utility but rather a decision based on fear. The uncertainty of the situation led consumers to make decisions based on the 'worst case scenario.' This is a scenario that is inflated by the base rate neglect fallacy, as people incorrectly weigh the probabilities of individual factors. "If Covid-19 were to last the next year... If Covid-19 were to last for the next two years..." demonstrate conditional beliefs that distort the reality for consumers, allowing them to justify their mistaken beliefs by overemphasising the probability of an uncertain outcome. This misalignment is commonly known as the over precision bias, a reasoning error that gives excessive certainty to the accuracy of one's belief. Through the invasive nature of Covid-19, both in media and on a medical level, people were inundated with information that reinforced the belief that Covid-19 was the next major crisis. Therefore, the decisions consumers made were understandable in their context, but were they economically rational?

Economic sociology adopts frameworks for explaining how social norms affect rationality. The disruptiveness and uncertainty caused by crisis are drivers for irrational behaviour such as excess demand. Yet economic sociology can provide an explanation to why we adopt nonsensical attitudes. We want, because if we have, we cannot be disadvantaged. For example, imagine you had all the food products you needed for the rest of the year. This suggests two things: you will never be in a position where you do not have the goods, and you are in a controlled environment. While the latter is very appealing, we must understand that the acquisition of all the goods was not due to the latter but the former. The salient self-interest in the former may raise the question, 'Are humans good or evil?' But this question should be sidelined as behavioural patterns are correlated with rationality and economic intu-

ition, not the nature of humans. Basic microeconomic analysis suggests that after excess demand is created, the invisible hand will shift the market back to the intersection of supply and demand. Even after supermarkets restocked shelves, internal store policy decisions had to be implemented to control the 'irrationality' of consumers.

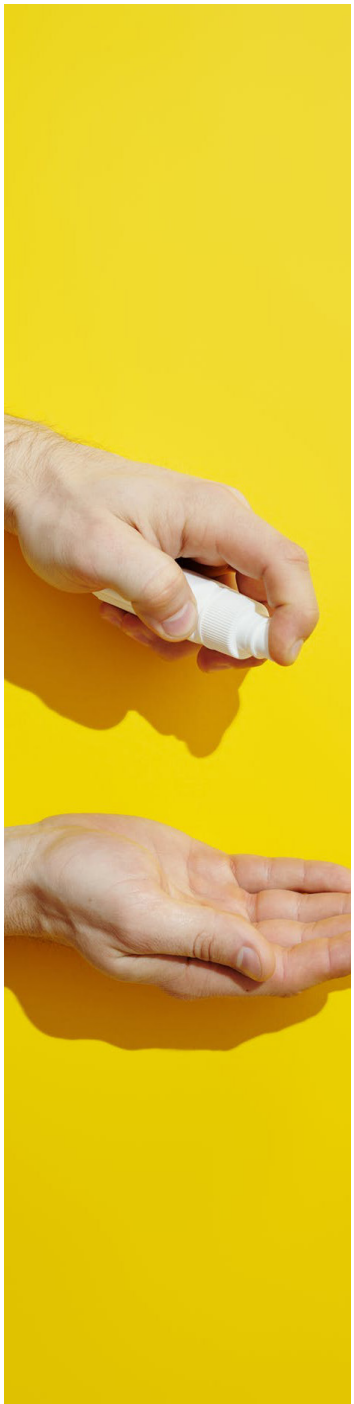
What is rationality? One general definition of rationality is a state of justification that is based on reason or agreeability. Wittgenstein, a linguistic philosopher, postulates that people play word-games; as such, there is no objective definition of rationality but only a collection of subjective meanings. Because of how we interpret our subjective definition of words, each person will have a unique perspective on what action should be taken. Hence, we must make a distinction between rationality and rational behaviour. For example, as everyone has a different understanding of a horse, everyone will paint a slightly different horse, hence ushering a belief between concepts and reality. The distinction between rationality and rational behaviour is quintessential for good economics. Policy makers must be aware of what they wish to control with their decisions, whether it be combatting what a pandemic conceptually represents (fear and uncertainty) or the immediate effects it brings to society (diminished economic functions). Thus, economists need to address a broad range of interpretations and articulate policies with comprehensive and thorough research.

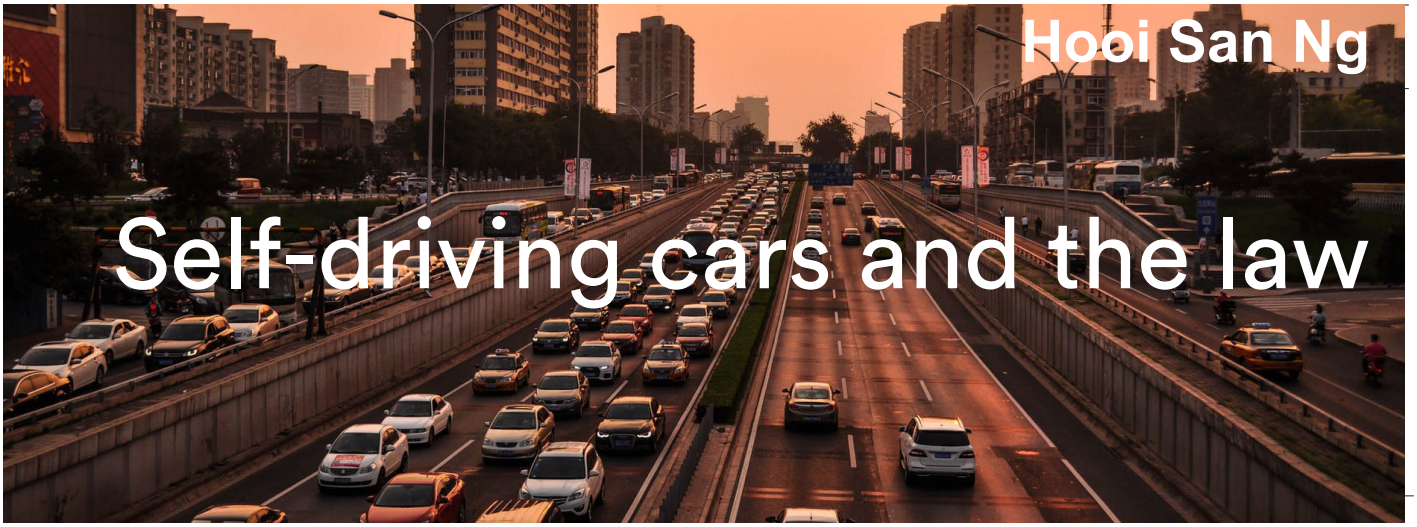
For neoclassical economics, on the other hand, rational behaviour is a choice consistent with your preferences. And one that usually provides the agent with the highest amount of personal utility. To understand where this rational behaviour is derived from, we can look to Weber's four types of rationality:

- Instrument rationality is related to the behavioural expectations of other human beings or objects in the environment.
- Belief-orientated rationality is when one appeals to reasons intrinsic to the agent.
- Affectual rationality is determined by the agent's specific orientation, meaning focussed.
- Traditional rationality is determined by ingrained habituation of actions.

Weber posits that these four rationalities are often used in conjunction with one another. Hence, we can understand normative economics as one that uses a combination of affectual rationality and belief-orientated rationality, due to its focus on the individual's utility curve and risk preferences. Behavioural economics, however, deconstructs traditional rationality and creates models that are more aligned with instrument rationality, as this school specialises in how behaviour influences decision making.

To champion good economics, we must understand key assumptions of what a rational agent is and the role of rationality. Good economic decision making during difficult times should account for cognitive biases in policy makers and impractical assumptions in policies. During a crisis, we look to recall the fond memories of times long gone. But we must also remember the role of rationality in making economic policies that guide progress to recreate a better yesterday. Through philosophical reflection on who we are, we can understand the cause and effect our decisions at various times in our lives. Our best evaluation tool is our own mind. Through a self-evaluation and re-evaluation, we can better ourselves and the society we live in.





Hooi San Ng

Self-driving cars and the law

When injuries are caused by self-driving cars, who is to blame? Hooi San Ng explores.

With the rapid technological advancements of artificial intelligence, self-driving cars – once confined to the realm of science fiction – are slowly turning into a reality. However, as this nascent technology still remains immature and underdeveloped, there unfortunately have been several fatalities, including most notably the death of Elaine Herzberg.

In 2018, a self-driving Uber in Tempe, Arizona struck and killed pedestrian Elaine Herzberg as she was jaywalking across the street. The Uber test vehicle detected Herzberg 6 seconds prior to the crash, but failed to process the information in a way that averted the collision, striking her at 38 miles per hour. Although there was a human safety backup driver behind the wheel to keep an eye on the road, the safety driver was carelessly watching an episode of "The Voice" on her phone at the time and did not reassume control of the vehicle in the event of an emergency.

With the advent of self-driving cars, Herzberg's death has elicited tremendous attention and raised questions as to the uncertainty of the assessment of legal liability for accidents involving autonomous vehicles: When injuries are caused by self-driving cars, who is ultimately to blame – humans or technology?

Pinning the blame on humans

The Herzberg fatality presents a litany of questions. To begin with, are the humans at fault here?

Arguably, Herzberg was contributorily negligent for not using a crosswalk. Dashcam footage revealed that Herzberg emerged out of the darkness as she jaywalked across the street whilst wheeling a bicycle.

It is similarly debatable that the safety driver was negligent for being distracted by her phone. Had she paid attention to the road, she could have reassumed control over the vehicle to avoid the collision. After all, as self-driving technology is still in its infancy, autonomous vehicles rely on vigilant safety drivers as backups, though it would seem rather difficult to determine whether the safety driver would have been able to avoid the collision upon Herzberg's sudden emergence from the darkness. A vigilant safety driver might not have prevented the collision after all.

Be that as it may, it would seem rather contradictory to pin the blame on jaywalking pedestrians or safety drivers if the ultimate goal of the self-driving industry is to fully delegate the responsibility of driving to a machine. In a driverless future, it would only seem logical if a legal framework excluding humans exists, as human errors will no longer be a relevant cause of accident.

Pinning the blame on technology

Should Uber have done more rigorous testings before releasing the self-driving test vehicle into the real world? An investigation by the National Transportation Safety Board concluded that the system design was not programmed to recognise jaywalking pedestrians. It is therefore hotly debated that Uber should be strictly liable for its programming errors and system failures. Pinning the blame on technology would act as an incentive for Uber to ensure the safety of vehicles before releasing products to market too early for competitive advantage. However, there are counterarguments that the costs of Herzberg's accident – and possibly future accidents – may cause a major setback and discourage innovation in the field of self-driving vehicles, especially if the costs and damage to reputation are severe.

Regardless, the potential legal battle for the first recorded pedestrian fatality associated with self-driving cars quickly ended when Uber reached a settlement with Herzberg's family 11 days after the crash. There is therefore no legal precedent to date that tells us who is culpable in such an accident. Nevertheless, Herzberg's fatality has highlighted that a better legal framework surrounding autonomous vehicles is necessary as road accidents slowly move away from driver negligence to product malfunction.

No-fault compensation schemes

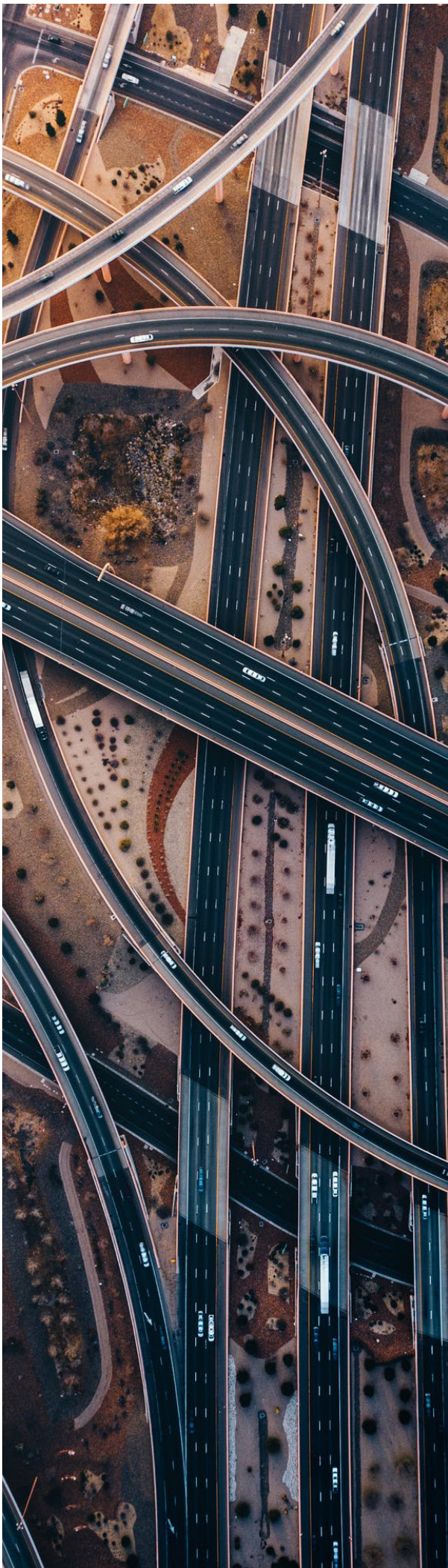
Perhaps, traditional negligence and product liability are insufficient to keep up with the introduction of autonomous vehicles. The attribution of fault on just one party may be difficult in scenarios like these, especially if the reality may be that fault lies with many parties. Thus, instead of dealing with the complexities surrounding the assessment of liabilities in the tort liability system, there have been suggestions for the implementation of no-fault compensation schemes.

Unlike tort liability schemes, no-fault compensation schemes can provide an alternative method to compensate victims without the need to establish fault. Similarly to an insurance fund, no-fault compensation schemes should be financed by car manufacturers, ride-sharing companies and riders, from which funds would be drawn from in order to compensate victims. This way, legal fees usually spent in the traditional tort liability system to determine who is at fault can instead be better utilised for paying actual damages incurred in accidents. Car manufacturers are also incentivised to refine and improve on the safety standards of the technology. Critics argue that the adoption of no-fault compensation schemes would only lead to higher future premiums. However, as self-driving technology improves and road accidents are reduced in the future, premiums should accordingly be lowered.

Victims however are compensated with fixed sums circumscribed in the legislation and have restrictions on the right to sue. It is only when a certain threshold is met, that losses not compensated by the no-fault compensation scheme can be further claimed in the traditional tort system. The thresholds could either be verbal thresholds that limit lawsuits to cases in which serious and permanent injury occurred, or monetary thresholds that limit lawsuits to cases in which damages exceed a specified dollar amount.

Apart from providing fair compensation to victims, concerns that liability exposure will slow innovation in the field of self-driving vehicles can also be partially alleviated. Uncertainties regarding the liability of self-driving car injuries can be eradicated, if the type of losses for which compensation can be obtained and the amounts payable are precisely circumscribed in legislation, making the issue of compensation much more manageable.

The implementation of self-driving cars promises an improvement of road safety by taking the most accident-prone factor out of the loop, the human driver. Even so, road accidents still might not be completely eliminated. Before drivers become a thing of the past, it thus must be recognised that a better legal framework surrounding autonomous vehicles is just as important as the technology. The adoption of a no-fault compensation scheme appears to offer the most benefits – especially after considering the burden and costs of determining liability through traditional negligence and product liability – to accommodate the technology of autonomous vehicles.



Kristen Mai

It's Time for Economists to Get Out of the Shadow of Political Influence and Neoliberalism

During times of crisis, the economy goes into a state of instability and policy makers are expected to find a solution. Mistakes are made, lessons are learned, but a one size fit all solution has never been appropriate. This is when guidance and assistance by economists are requested. In these occasions, economists often find themselves reflecting on the responsibilities and goals that they are trying to achieve from their chosen field of profession. This discussion is focused on the role of an economist in the policy making process, as well as criticism against ideological and political influence on the field, which has prevented it from fulfilling its role of promoting social welfare.

As economic policy is shaped and restricted by the democratic institutions within which it operates, it is undeniable that bi-partisan politics is the force that has driven economic policy. So, it does not come as a surprise that the populist approach has been taken up as a political weapon. An application of this approach lies in the 2019 federal election policy proposal where the Australian Liberal party pledged for tax reductions to low- to middle-income earners. Right-wing, neoliberalism-influenced thinking has certainly led them to believe that the invisible hand would 'push' more people to look for jobs and increase demand for spending. This could be true to some extent as neoliberalism aims to protect individual liberty which necessitates a free and competitive market.

However, the tax cut would actually benefit those with above average incomes, with 'more than 50% going to the top 10% of taxpayers and 90% going to the top 20%'. Consequently, we could understand this policy as an efficiency-equality trade off, where higher economic performance is attained at the expense of inequality. Nonetheless, the policy is neither equitable nor efficient. It would have been more effective if the cuts were aimed at those who have the highest propensity to spend (i.e low-income earners) and spendings were allocated towards areas where most jobs would be created.

As the government embraces policies like tax cuts, deregulation and labour market flexibility, individuals are motivated into thinking working is good, leisuring is bad and material things would make us happy. Like a herd of sheep, we blindly follow the shepherd to 'economic efficiency' to maximize consumer wants and producer profits. We do this at the detriment of income equality, where the 42 richest people are allowed to amass the equivalent wealth of the world's poorest 50%. The invisible hand might have been the force behind economic prosperity, but laissez-faire economics and a prolonged period of deregulation have certainly sparked predatory lending behaviour in the banking sector which put the global economy into a recession in 2008.

As political ideology and economic policy are closely related, economists are required to consider political implications of their advice. However, this should not be the case because a good economic policy is one that would promote social welfare with effective use of scarce resources and be free from political influence. Policy analysis should aim to identify the conditions under which politics and economics could potentially be at conflict and the backlashes that come with it.

However, it seems like politicians are wilfully ignoring these issues. As can be seen from the tax cut example given above, apart from its bias towards the top 20%- and 10%-income earners, it also systematically discriminates against women as the majority constituents of these groups are men. The gender pay gap is exacerbated as the government removed JobKeeper from the female-dominated industry of childcare and increased spending in the male-dominated construction industry through the HomeBuilder scheme.

A more encompassing approach to formulate an economic advice should be through the evidence-based framework developed by Banerjee, Duflo and Kremer where they carried out randomised control trials to study how different policies play out in action and promote the most effective ones. Though this approach was applied in the context of development economics, it is not any less applicable to address other social issues given its objective nature. Economic policy research should never be held hostage by any political or ulterior motive, even if explicitly mandated. Because at some point, the mounting spillover costs of a biased and politically influenced economic policy would be like a 'death of thousand cuts' to our democracy.

In response to crises (whether it is wartime, market failure or a global pandemic), there is no doubt that economists have a crucial role in policy making. Take the example of the COVID-19 pandemic: lives vs livelihoods, which one should policy makers prioritise? Do we open up the economy sooner to help trade flows or do we keep it closed to prevent the risk of contagion as suggested by epidemiologists? The way that we think about an economist's recommendation is that they are opportunity cost of one another. However, this is not necessarily true as economic policy can be used to aid the fight against the pandemic. This can be seen from an unemployment benefits policy that requires workers to stay at home rather than going to work to be able to claim it. Given an economic incentive, people would be more willing to take on government advice to help slow the spread.

One thing that this pandemic has taught us is that mainstream economics does not fully explain behavioural changes in economic agents. Take the example of the U.S: even if the U.S border actually opened up for trade (as president Trump claimed he would do by Easter), there would be no one to trade with as people are afraid of virus contagion. This might seem odd to neoclassical economists that disruptions in economic activity are not solely attributable to government restrictions, as they assume that economic agents are substantially rational such that the risk of virus contagion ought not to be overestimated. However, these behavioural changes are perfectly rational under behavioural economics as it confirms the implications under Prospect theory, where people become highly risk averse as the chance of extreme events (contracting the virus) is overweighted due to their 'availability'.

Policy makers take economists seriously because good government administration is usually associated with good economic policy. If the global standards for a healthy economy are inflation stability, sustainable economic growth and full employment, then the government is inclined, if not obligated, to consider economic implications with any policy they make. Economic advice must be sought prior to any policy implementation because the government, as an entrusted democratic institution, needs to be accountable for its decisions. To do so is to gain a holistic perspective on any particular issue they are trying to tackle.

I would like to think that economists are teachers to policy makers, where our work is to reshape their cognitive infrastructure to an economic thinking style and where concepts like 'incentives, growth, efficiency and externalities' should be considered. It is important that economic reasoning be applied to the policy making process, where a costs and benefits analysis would reveal the economic transmission of the policy. Only then could policy makers have an appropriate appreciation of direct and indirect consequences of the policy on economic agents. Informed by empirical study, economic reasoning is constantly evolving with social development. Incorporating an economic style of thinking in the policy making process is to forge a path towards a sustainable and equitable future.

As important as it is to consider economic advice, policy makers must not modify and take advantage of empirical economic findings to suit their needs. This is demonstrated in the Lucas critique and its application in late '60s, where the Philips curve and the promising yet unexplained negative correlation between unemployment and inflation were extorted to manufacture economic growth and employment. Its dire result was evidenced in the 1970 stagflation.

Good economics for hard times would not be different from other times if we had a solid economic foundation, but how can we achieve this? In these darkest hours, holding onto the long-entrenched orthodoxy of neoliberalism is certainly not the answer. The rosy view of the economy under this ideology has certainly made us think less critically as the proliferation of economic models of efficiency incrementally take away the chance to design a more equitable and sustainable future. The answer lies in a progressive tax system, targeted government spending and free education where problems like rising inequality and environmental degradation would be appropriately addressed. If we had come prepared, our economy would be resilient against any shocks that come its way. The time to act is now, if we still want to have some scarce resources, rather than none, to reach economic efficiency.

Ani Prakash

Economists for pragmatic energy policy

Climate change is arguably one of the most polarising debates of our time, and it ought to be as it concerns our ecological and economic survival. However, the issue is caught in an everlasting pendulum of political ideologies that fail to provide a pragmatic economic blueprint for a fossil-fuel-free world. Nuclear power is undeniably the bogeyman of energy policy, with Chernobyl & Fukushima being the nasty face of the nuclear industry. However, this negative characterisation is far from the truth: nuclear power is not only one of the safest forms of power, but also shelters the economy from the fallout of a fossil fuel transition.

While this article explores the economic case for nuclear, the case for nuclear power as an efficient tool to minimise carbon emission is demonstrated through the website 'https://www.electricitymap.org/map'. The map provides real-time carbon emissions, where countries that have a green colour code have the cleanest energy. It is not surprising that many countries which have low CO_2 emissions use nuclear as a baseload, such as Canada, France and Sweden.

To add fuel to the fire, the COVID-19 pandemic and resulting recession have created an economic state where it would be irrational to slow coal operations. This is because coal briquettes make up $52.2 billion or 23.1% of Australian exports, making coal one of the largest sources of income. A reduction in coal exports during the immediate/medium future will be disastrous for our post-recession recovery. Prudence, indeed, will dictate that following the Global Financial Crisis increased mining exports to China shielded us from mass economic chaos. Therefore, if coal exports are to be reduced there needs to be an immediate replacement to fill the black hole left in our economy. What is clear is that livelihoods will be destroyed regardless of when we act, meaning that we need a 'just transition' to protect as many jobs as possible to minimise the damage. This is a view equally shared by the CFMEU, the union representing coal workers.

The Morrison Government has recognised this eventuality and liberalised Australia's gas market, an initiative gaining support by Labor's core base, the Australian Workers Union. However, the strategy has come under fire from the 'Green Left'. Claiming that a gas lead recovery is equally harmful to the environment. While factual, their arguments neglect to inform that '[gas] is far deadlier than nuclear power, causing about 40 times more deaths per unit electric energy produced'.

Nuclear is the light on the hill to these concerns. When appropriately managed, the economic and ecological benefits of using nuclear far outweigh any alternative baseload power source.

Australia has the world's largest share of uranium resources but is the third-biggest exporter of uranium with the sector generating $575 million in export earnings between 2017-18

(Minerals Council of Australia, 2019). However, if we embraced a pro-nuclear stance, we can create up to $9 billion per annum in uranium exports with over 20,000 direct and indirect jobs by 2040 (Policy paper on Australia's uranium launched, 2015). Revenue under proper government oversight, we can use to expand renewable technology such as higher capacity solar batteries and hydro-electric dams.

As a Victorian is it disappointing to learn that approximately 80% of Australia's uranium deposits are in South Australia. However, as evidenced by the mining industry, an increase of jobs in one state will create prosperity for the rest of our Commonwealth. Prosperity that comes in the form of jobs in sectors currently associated with nuclear research such as medical research, agricultural science, materials science, and training. These are jobs the Victorian and Federal Government should prioritise to regional areas such as the Latrobe Valley to kickstart the local economy after the gradual closure of coal-fired powerplants.

Over the past few years, dinner table conversations across the country increasingly involve the month's power bills. It is not absurd to assume that all Australians should have access to cheap electricity; however, that is not the case. In Australia, on average, it costs 25-40 cents per kilowatt-hour (kWh) of electricity. Meanwhile, in the Canadian province of Ontario, which uses nuclear power as a baseload, the average cost of electricity is $0.125 per kWh. As eloquently put by Maverick MP Bob Katter 'You measure a nation by the way it treats its poorest people and its most downtrodden people'. By transitioning to a nuclear baseload, the cost of electricity will benefit both groups of citizens (particularly the lower-lower/middle class) as well as industries that may be incentivised to expand into Australia.

One important note shared by pro-nuclear proponents is that we believe that nuclear should be used in conjunction with renewables. While there are developments in solar battery storage, there will always be days where solar and wind will fail to meet the high demand of electricity, and instead of relying on gas as a baseload, the much cleaner nuclear alternative is used.

Ultimately as Australians, we are at a crossroads, we can either choose to continue the ideology dogfight, or we can be pragmatists and at least discuss opening up nuclear as an alternative baseload and attempt to save our economy and environment before there is nothing left to save.

Australian Government
Productivity Commission

Productivity Commission releases two reports on young people's incomes

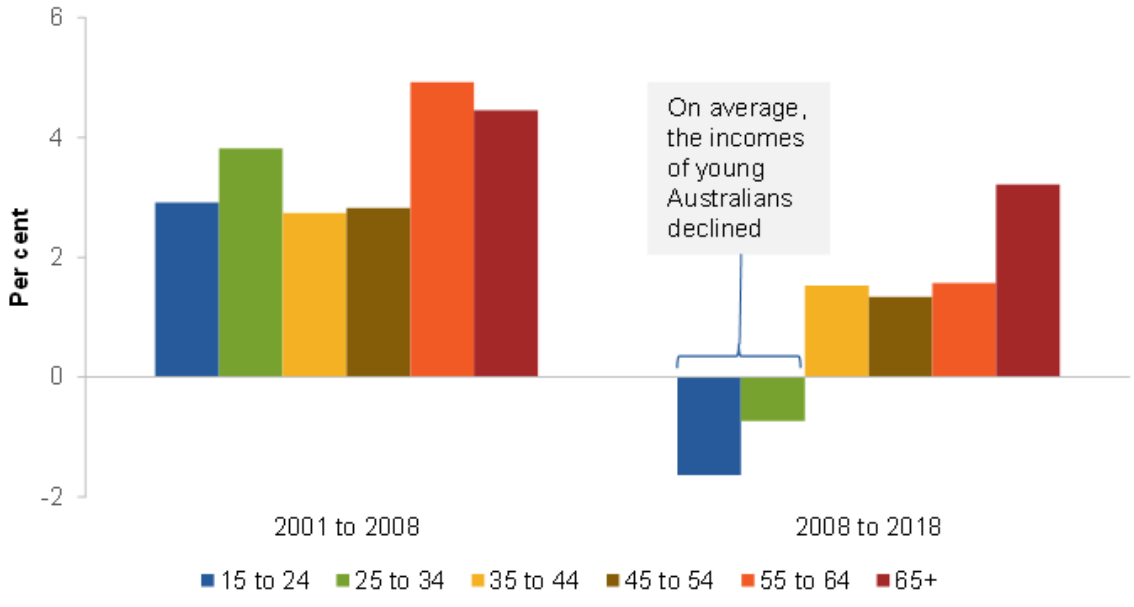
The Productivity Commission has recently published research directly relevant to members of ESSA. The study *Why did young people's incomes decline?* arose from concerns about the 'lost decade' of 2008-2018, during which average incomes for young people (aged 15-34) declined in real terms.

The study found that

1. Declining labour income growth was the main reason for the decline in young people's incomes
2. After 2008, wage rates for young people stalled and hours fell
3. Graduates were more likely to be in 'lower-scored' occupations in 2018 than in 2001
4. Transfers from government declined due to declines in eligibility
5. The number of young people living at home increased, especially in more affluent households; this represented a significant increase in intra-family transfers and living-cost savings for young people

These trends pre-date the COVID-19 crisis, which has particularly affected employment outcomes for young people.

Figure 1 Young people's incomes have declined
Annual growth in average disposable incomes by age[a]



[a] In real terms; adjusted by the CPI.
Data source: Commission estimates based on HILDA data.

Labour Income

Labour income is the main source of income for young people, so it is key to understanding the lost decade of income growth. Labour income can be decomposed into the effects of *wages per hour* and the *number of hours worked*. Between 2008 and 2018, older people's wage rates continued to grow, but young people's wage rates did not. Over the same period, average hours worked by young people fell.

A shift from full-time to part-time work for people aged 15-24 contributed to the decline in hours worked. This age group has seen a slow decline in full-time employment since the early 1990s, which was initially associated with studying for longer. However, after 2008, the decline was only experienced by those not currently studying — meaning that increased participation in education was not the reason for the decline in hours.

The most likely explanation for the decline in wage rates and in full-time work is an imbalance between labour demand and labour supply. The economic slowdown post-GFC reduced labour demand, while long-term changes in the economy — later retirement for over-55s and strong increases in the number of university graduates — increased labour supply at different skill levels. (Immigrants increased both labour supply and labour demand, so the overall effect of immigration was neutral.)

A much higher share of under-35s are job seekers, searching for their first job or changing jobs — and the imbalance between labour demand and labour supply likely affected job seekers much more than workers who were already employed. Seeing greater competition for starting positions, firms offered lower starting wages, but did not generally reduce wages for existing workers (though wage rises were smaller). This lack of wage flexibility within existing firms and for existing workers meant that new jobs were created in smaller firms, and in sectors with more casual and part-time work.

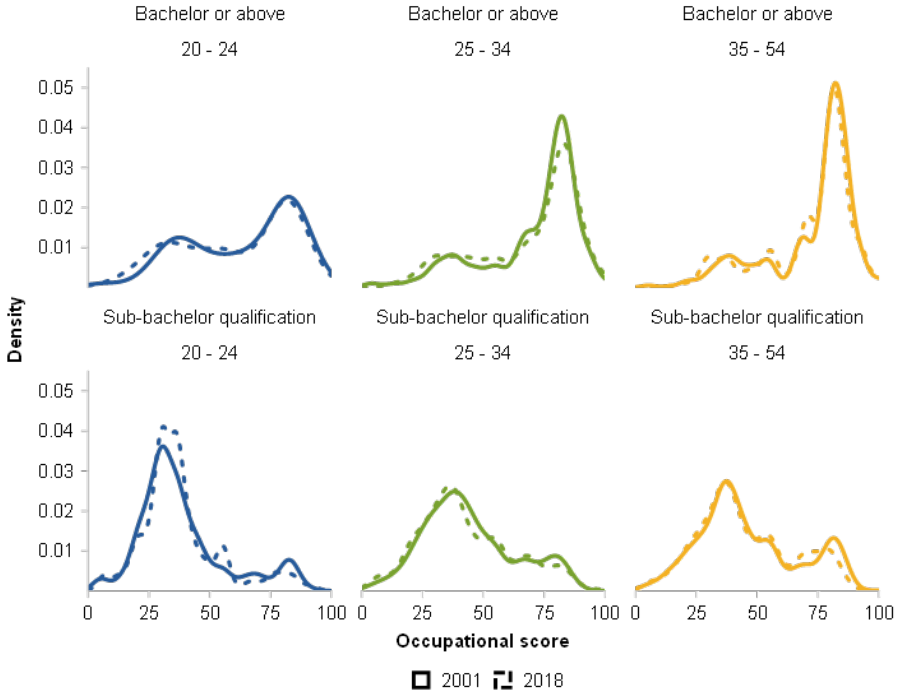
The Jobs Ladder

Young people still found work after 2008. However, the work they found was in lower-scored occupations: those with lower educational requirements and earning potential. While everyone's preferences are different (and earning potential is not the only important characteristic of a job), such a decline for a whole group of workers is likely to be at least somewhat involuntary.

The movement down the jobs ladder of young people with bachelor's degrees is likely to have pushed those with vocational degrees further down in turn. Wage rates and hours vary more quickly with market forces at lower levels of the job market, and so the market was able to absorb the larger supply of workers moving into lower-scored occupations and sometimes part-time work. Accordingly, unemployment did not rise dramatically after the GFC. However, *underemployment* rose along with part-time work, and some young workers were ultimately pushed out of employment completely (such that the share of all under-25s who were long-term unemployed more than doubled by 2018).

Figure 2 Graduates under 35 were more likely to be in lower scored occupations in 2018 than in 2001[a]

Frequency distribution of occupational scores by highest education level



[a]Observations concentrated toward the left of the distributions indicate a concentration of lower-scored occupations in a population. The propensity of the dashed lines to be further left than the solid lines is consistent with that tendency for 2018 relative to 2001.

Data source: Commission estimates based on HILDA data.

Concerningly, this movement down the jobs ladder (while not large) is persistent. Since 2001, young people have typically moved up the jobs ladder in the years after graduation — but later cohorts of graduates have moved up more slowly, if at all. This means that they are likely to experience 'scarring': slower wage growth and slower career progression.

The Commission's staff working paper *Climbing the Jobs Ladder Slower: Young people in a weak labour market* provides more detail on the Markov chain analysis that underlies these results.

Only a small and declining share of young people relied on business income as their main source of income. Although some authors have observed an increase in the importance of gig economy jobs, the data to 2018 indicate that most of this might have been a substitution for other jobs in the unincorporated sector, such as Uber drivers replacing taxis. .

Changes to government transfer income after 2008 did not compensate for the decline in young people's labour income. In fact, transfer income declined for people aged 15-19 (replaced in part by payments to their parents), though it remained relatively steady in real terms for people aged 20-34.

By contrast, transfers from parents grew substantially after 2008. Parents transferred more funds to children who had moved out of home — and more young people remained at home. Those who remained effectively received sizeable transfers in the form of free or concessional rent, food, and other amenities; indeed, using HILDA data, we estimated average yearly savings at almost $20,000.

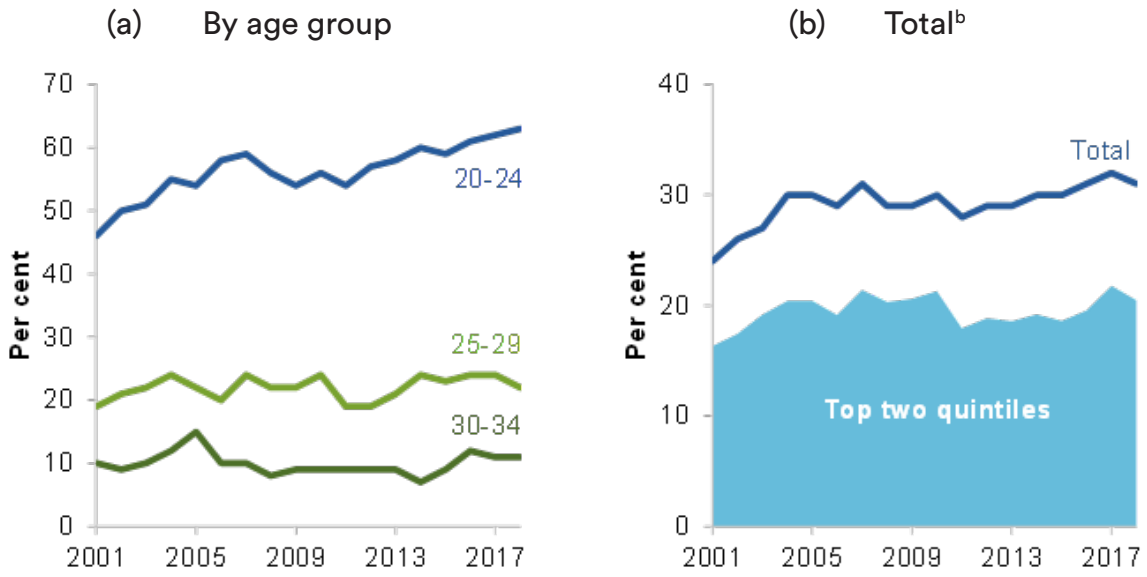
Not all families were able to make these transfers. Low-income families transferred less and were significantly less likely to have their children continue to live at home.

Future Prospects

These findings suggest that young people were ill-positioned to deal with the COVID-19 crisis. The crisis has likely reinforced the difference between the experiences of job-holders and job-seekers. Many of the sectors normally able to absorb new workers, such as retail, hospitality and tourism, have been hit hardest. Young people's adverse experiences in the labour market now are likely to have 'scarring' effects on their future labour market outcomes.

Figure 3 People aged 20 24 and people in high income families are most likely to make savings

Percentage of people aged 20 34 who lived with their parents, 2001–2018[a]



[a]Over 90 per cent of people aged 15 19 live with their parents; this group is excluded from both charts. [b] The blue area shows the share of people aged 20 34 who live with their parents whose household income was in the top two quintiles. The white area between the blue area and the total line shows the share for the bottom three income quintiles.

Data source: Commission estimates based on HILDA data.

Valuing the invaluable

What is the value of a road, pipeline, or a national park? The answer will depend on who you ask. Car owners may say the value of a road is quicker journeys. Hikers may value a national park for its beauty or wildlife. Economists consider these questions using non-market values.

What are non-market values?

Non-market values provide an economic value for goods and services without a standard monetary value or price. This includes social, environmental, recreational, community, and non-use values. Economists often evaluate investments using both market and non-market values. This allows decision makers to consider the environmental and social effects of investments, as well as the financial and market effects.

Failure to consider social and environmental values can lead to sub-optimal policy and investment decisions. For example, funding may not be provided for environmental projects because the benefits cannot be confidently demonstrated, or non-environmental outcomes may be prioritised because they are simpler to value.

How can non-market values be estimated?

One approach to estimating non-market values is the hedonic pricing method. This method breaks down a good into its constituent characteristics and estimates the contribution of each characteristic to the good's overall value. Hedonic pricing is commonly used to estimate real estate values. For example, the higher price of properties close to a beach might suggest that people place a value on living close to the beach. The even higher value of beachfront properties might show the value placed on the sea view.

Aither was engaged by Infrastructure Victoria to estimate the value of parks throughout the state. This was the biggest study of its type undertaken, drawing on hundreds of thousands of property sales. We applied the hedonic pricing method to value parks, estimating the relationship between property values and proximity to parks while controlling for other drivers of property values. Our research estimated values for different types of parks by location. These values can be used in cost-benefit analysis to ensure that environmental benefits and costs are adequately considered. The research was published here.

Identifying the underlying costs of an activity is another approach used to estimate non-market values. We all have hobbies and interests that we value but do not directly pay for. Hiking through the mountains, fishing at a lake or simply enjoying a beautiful view, can be highly valued but do not have a market price. However, even if the activity is 'free', we often spend money to participate in the activity. For example, travelling to a national park costs you time and a train ticket. Economists can use these implicit costs to estimate how much people value these activities. This approach is called the travel cost method.

Aither recently completed a project for the Snowy-Monaro Regional Council to estimate the benefits of recreational

fishing. We applied the travel cost method through a survey of recreational fishers in the region. We found that the benefits of recreational fishing in the area are between $2.5 and $4.8 million per year.

Economists across the globe are researching non-market valuation techniques. This research is time consuming and expensive. Fortunately, many non-market valuation techniques are shared publicly in the Environmental Valuation Reference Inventory, which has over 5,000 studies.

How do we use non-market values?

Non-market values are used to inform investment decision-making and to demonstrate the value of government programs. A program might have a modest financial return but significant social or environmental value. Non-market values can be used to advocate for funding these programs.

In 2018 Aither evaluated a government investment to support the arts and creative industries in regional Victoria. Regional areas are an important part of Australia's social and cultural identity and a major contributor to the national economy. Nearly a third of the population resides in regional areas. However, rural and regional residents face unique challenges that require strategic investments to address.

Capturing non-market values was crucial to demonstrate the benefits delivered for regional Victorians through this program. Our approach included:

- research to identify suitable values to measure social benefits
- collecting data such as local and tourist visitor numbers
- meeting with project managers to gain a deeper understanding of project outcomes.

Using this approach, we quantified a range of important non-market benefits of the program. These included mental health and wellbeing benefits, community and social cohesion benefits, and the benefits of using free community spaces. Our analysis demonstrated that real social and community value was generated from the program.

Summary

We don't pay for everything that we value, so including non-market values in decision making is important. From an economic perspective, these values are real and relevant but are difficult to estimate. Fortunately, economics offers robust approaches for valuing environmental, cultural, recreational, and social impacts. Many of these studies are available in public databases. Whether you enjoy hiking, fishing, or simply value biodiversity, the use of non-market values ensures your perspective is accounted for in decision-making.

Resources mentioned can be found below. All references for this article can be viewed on the following page.

- Snowy-Monaro report
  https://www.snowymonaro.nsw.gov.au/documentcenter/view/9068
- Environmental Valuation Reference Inventory
  https://www.evri.ca/en/splashify-splash

References

Productivity Commission releases two reports on young people's incomes

[1] Productivity Commission. (July 2020). Why did young people's incomes decline?. https://www.pc.gov.au/research/completed/youth-income-decline
[2] The occupational scoring used was developed by McMillan, J., Beavis, A. and Jones, F.L. It is explained in their 2009 paper 'The Ausei06: A New Socioeconomic Index for Australia', Journal of Sociology, vol. 45, no. 2, pp. 123-149.
[3] de Fontenay, C., Lampe, B., Nugent, J., & Jomini, P. (July 2020). Climbing the jobs ladder slower: Young people in a weak labour market. Productivity Commission. https://www.pc.gov.au/research/supporting/jobs-ladder

Valuing the invaluable

[1] Evangelio, R., Hone, S., Lee, M., & Prentice, D. (2019). "What Makes a Locality Attractive? Estimates of the Amenity Value of Parks for Victoria". Economic Papers, vol. 38, no. 3, pp. 182-92. https://onlinelibrary.wiley.com/doi/full/10.1111/1759-3441.12259
[2] Aither. (June 2019). Recreational fishing in the Snowy Monaro region. https://www.snowymonaro.nsw.gov.au/documentcenter/view/9068
[3] Environmental Valuation Reference Inventory. https://www.evri.ca/en

The higher education bill: who pays and how much?

[1] Australian Government. (2020). Commonwealth Supported Places. Retrieved from https://www.studyassist.gov.au/help-loans/commonwealth-supported-places-csps.
[2] Andrew Norton. (2017). 'Uni students and grads must pay their fair share.' Sydney Morning Herald, May 10. Retrieved from https://www.smh.com.au/opinion/uni-students-and-grads-must-pay-their-fair-share-20170510-gw1ely.html.
[3] Andrew Norton. (2019). 'Now is the time for pragmatic thinking.' The Australian, May 29. Retrieved from https://www.theaustralian.com.au/higher-education/now-is-the-time-for-pragmatic-thinking/news-story/1bea0dabd3056177fda0467a2d259949.
[4] Deloitte Access Economics. (2016). Estimating the public and private benefits of higher education. Retrieved from https://docs.education.gov.au/system/files/doc/other/daedet_benefits_of_higher_education_final_report.pdf.
[5] Jordan Hayne. (2020). 'Which university fees could increase, which ones could fall, and what could go awry.' ABC News, 23 June. Retrieved from https://www.abc.net.au/news/2020-06-23/what-university-fees-increasing-how-funding-works/12381362.
[6] Nassim Khadem. (2020). 'Government's university fee changes mean humanities students will pay the entire cost of their degrees.' ABC News, 20 June. Retrieved from https://www.abc.net.au/news/2020-06-20/study-arts-and-humanities-government-fees-tertiary-education/12374124.
[7] Adam Davidson. (2015). 'Is College Tuition Really Too High?' New York Times, September 8. Retrieved from https://www.nytimes.com/2015/09/13/magazine/is-college-tuition-too-high.html.
[8] Steve Chubb. (2019). 'Reasons the Cost of Education Is High in US and UK Compared to Other Nations.' The College Puzzle, October 18. Retrieved from https://collegepuzzle.stanford.edu/reasons-the-cost-of-education-is-high-in-us-and-uk-compared-to-other-nations/.
[9] James Glenday. (2014). 'Education Minister Christopher Pyne announces support for fee competition among universities.' ABC News, May 8. Retrieved from https://www.abc.net.au/news/2014-05-08/universities-to-compete-on-price/5438734?nw=0.
[10] Allana Akhtar. (2019). '7 countries where higher education is free.' Business Insider Australia, September 20. Retrieved from https://www.businessinsider.com.au/countries-with-free-higher-education-no-tuition-college-2019-9.
[11] Stewart Riddle. (2014). 'Education is a public good, not a private commodity.' The Conversation, October 1. Retrieved from https://theconversation.com/education-is-a-public-good-not-a-private-commodity-31408.
[12] Parliament of Australia. (2003). Higher Education Funding Policy. Retrieved from https://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/Publications_Archive/archive/hefunding.

Sorry everyone, there's still no free lunch – MMT and 'The Deficit Myth'

[1] Triggs, A. (2020, August 31). Modern Monetary Theory: a solution in search of a problem. Inside Story. https://insidestory.org.au/modern-monetary-theory-a-solution-in-search-of-a-problem/
[2] Reserve Bank of Australia (2020). Opening Statement to the House of Representatives Standing Committee on Economics. https://www.rba.gov.au/speeches/2020/sp-gov-2020-08-14.html
[3] Triggs, A. (2020, August 31). Modern Monetary Theory: a solution in search of a problem. Inside Story. https://insidestory.org.au/modern-monetary-theory-a-solution-in-search-of-a-problem/
[4] Battersby, L. (2020). Fears growing over zombie companies. SMH. smh.com.au/business/markets/fears-over-the-growing-stockpile-of-zombie-companies-20200916-p55w6i.html
[5] ANZ-Roy Morgan Consumer Confidence increases for fifth straight week. (2020, October 6). Roy Morgan. https://www.roymorgan.com/findings/8530-anz-roy-morgan-consumer-confidence-october-6-202010050549
[6] Krugman, P. (2019, February 25). Running on MMT (Wonkish). New York Times. https://www.nytimes.com/2019/02/25/opinion/running-on-mmt-wonkish.html

Connected: a soft introduction to the analysis of networks and complexity

[1]Bearman, P. S., Moody, J., & Stovel, K. (2004). Chains of Affection: The Structure of Adolescent Romantic and Sexual Networks (1st ed., Vol. 110). Chicago, Illinois: American Journal of Statistics.
[2] Bearman, P. S., Moody, J., & Stovel, K. (2004). Chains of Affection: The Structure of Adolescent Romantic and Sexual Networks (1st ed., Vol. 110). Chicago, Illinois: American Journal of Statistics.
[3] Yadav, C. S. (2018). A Note On Applications of Cycles & Trees. Retrieved October 19, 2020, from https://www.academia.edu/36983041/A_Note_On_Applications_of_Cycles_and_Trees
[4] Umdarchives. (2013, July 24). Maryland Movie Connections–Good Will Hunting & Dr. George Dantzig. Retrieved October 19, 2020, from https://umdarchives.wordpress.com/2013/05/28/maryland-movie-connections-good-will-hunting-dr-george-dantzig/
[5] Jackson, M. O. (2008). Social and Economic Networks 1 - Stanford University. Retrieved October 19, 2020, from https://web.stanford.edu/~jacksonm/netbook.pdf
[6] "The human network, how your social position determines your power, beliefs and behaviour" For sale on, https://www.amazon.com/Human-Network-Position-Determines-Behaviors/dp/1101972963/ref=tmm_pap_swatch_0?_encoding=UTF8&qid=1540174871&sr=1-5
[7] "Social and Economic Networks, Models and Analysis", Accessible on https://www.coursera.org/learn/social-economic-networks
[8] "Awesome Network Analysis", Accessible on https://f.briatte.org/r/awesome-network-analysis-list
[9] "MelNet: A Melbourne-Based Consortium of Experts in Social Network Analysis (SNA)", Accessibel on http://www.melnet.org.au/
[10] Stavroglou, S. K., Pantelous, A. A., Stanley, E. H., & Zuev, K. M. (n.d.). Unveiling causal interactions in complex systems. Proceedings of the National Academy of Sciences of the United States of America. doi: https://doi.org/10.1073/pnas.1918269117
[11] "MTH3170 – Network Mathematics", Accessible on https://handbook.monash.edu/current/units/MTH3170

Out with the old, in with the new: creative destruction and the economics of innovation

[1] Mazzucato, M. (2020). The COVID-19 crisis is a chance to do capitalism differently. TED. https://www.ted.com/talks/mariana_mazzucato_the_covid_19_crisis_is_a_chance_to_do_capitalism_differently
[2] Rosenberg, N. (2004). Innovation and economic growth. Innovation and Economic Growth. OECD.

[3] Schumpeter, J. A. (2013). Capitalism, socialism and democracy. Routledge.
[4] Lane, I. (3 September 2019). The decline of the landline telephone: How mobile phones and the internet killed an icon. The New Daily. https://thenewdaily.com.au/life/tech/2019/09/03/landline-phones-australia/
[5] Statista. (2020). Number of Netflix paying streaming subscribers worldwide from 3rd quarter 2011 to 2nd quarter 2020. https://www.statista.com/statistics/250934/quarterly-number-of-netflix-streaming-subscribers-worldwide/
[6] Mazzucato, M. (2013). Financing innovation: creative destruction vs. destructive creation. Industrial and Corporate Change, vol. 22, no. 4, pp. 851-67.
[7] Cuyper, L.D., Kucukkeles, B. & Reuben, R. (2020). Discovering the real impact of COVID-19 on entrepreneurship. World Economic Forum. https://www.weforum.org/agenda/2020/06/how-covid-19-will-change-entrepreneurial-business/
[8] Krogh, G.V., Kucukkeles, B. & Ben-Menahem, S. (2020). Lessons in Rapid Innovation From the COVID-19 Pandemic. MIT Sloan. https://sloanreview.mit.edu/article/lessons-in-rapid-innovation-from-the-covid-19-pandemic/
[9] Armour, C., Danks, L., Johnson. J., Kennedy, S., Taylor, C. & Watts, E. (2020). The next normal for Australian industries and workforces. McKinsey. https://www.mckinsey.com/industries/public-and-social-sector/our-insights/the-next-normal-for-australian-industries-and-workforces
[10] Savchuk, K. (2019). The Five Best Policies to Promote Innovation — And One Policy to Avoid. Graduate School of Stanford Business. https://www.gsb.stanford.edu/insights/five-best-policies-promote-innovation-one-policy-avoid
[11] Newman, P. (3 August 2020). Creative destruction: the COVID-19 economic crisis is accelerating the demise of fossil fuels. The Conversation. https://theconversation.com/creative-destruction-the-covid-19-economic-crisis-is-accelerating-the-demise-of-fossil-fuels-143739
[12] Rubinstein, H. (4 August 2020). Post-COVID innovation needs to be radical, not marginal. Marketing Week. https://www.marketingweek.com/post-covid-innovation-needs-to-be-radical-not-marginal/

Changing our approach to aged care

[1] Royal Commission into Aged Care Quality and Safety. FINANCING AGED CARE Consultation Paper Number 2 [Internet]. Commonwealth of Australia; 2020. Available from: https://agedcare.royalcommission.gov.au/sites/default/files/2020-06/consultation_paper_2_-_financing_aged_care_0.pdf
[2] Older Australia at a glance, Health & disability status - Australian Institute of Health and Welfare [Internet]. Australian Institute of Health and Welfare. 2020 [cited 4 October 2020]. Available from: https://www.aihw.gov.au/reports/older-people/older-australia-at-a-glance/contents/health-functioning/health-disability-status
[3] Briggs L, Tracey R. Royal Commission into Aged Care Quality and Safety Interim Report: Neglect. Commonwealth of Australia; 2019.
[4] McIlroy T. Aged care needs $3.2b annual funding injection to meet best practice [Internet]. Australian Financial Review. 2020 [cited 4 October 2020]. Available from: https://www.afr.com/politics/federal/aged-care-needs-3-2b-annual-funding-injection-to-meet-best-practice-20200826-p55pet
[5] About the Commonwealth Home Support Programme (CHSP) [Internet]. www.health.gov.au. 2020 [cited 1 October 2020]. Available from: https://www.health.gov.au/initiatives-and-programs/commonwealth-home-support-programme-chsp/about-the-commonwealth-home-support-programme-chsp
[6] Accommodation supplement for aged care [Internet]. www.health.gov.au. 2020 [cited 4 October 2020]. Available from: https://www.health.gov.au/health-topics/aged-care/providing-aged-care-services/funding-for-aged-care-service-providers/accommodation-supplement-for-aged-care
[7] Fees for people entering residential aged care from 1 July 2014 [Internet]. www.health.gov.au. 2020 [cited 4 October 2020]. Available from: https://www.health.gov.au/initiatives-and-programs/residential-aged-care/charging-for-residential-aged-care-services/fees-for-people-entering-residential-aged-care-from-1-july-2014#meanstested-care-fee
[8] Brown B. COVID-19 puts squeeze on older Australians' finances [Internet]. Australian Financial Review. 2020 [cited 4 October 2020]. Available from: https://www.afr.com/wealth/personal-finance/covid-19-puts-squeeze-on-older-australians-finances-20200406-p54hgn
[9] Alexander H. HECS for aged care: seniors groups cautiously welcome Keating's plan [Internet]. The Sydney Morning Herald. 2020 [cited 4 October 2020]. Available from: https://www.smh.com.au/national/nsw/hecs-for-aged-care-paul-keating-s-solution-to-funding-shortfall-20200914-p55vbv.html
[10] Knott M. Federal budget 2016: $180 billion HECS bombshell paves way for major education shakeup [Internet]. The Age. 2020 [cited 4 October 2020]. Available from: https://www.theage.com.au/politics/federal/federal-budget-2016-180-billion-hecs-bombshell-paves-way-for-major-education-shakeup-20160406-gnzjfx.html

Exporting Climate Action

[1] European Commission. The EU-Mercosur Trade Agreement explained. https://ec.europa.eu/trade/policy/in-focus/eu-mercosur-association-agreement/agreement-explained/
[2] Brandi, C, Schwab, J, Berger, A, & Morin, J. (2020). "Do environmental provisions in trade agreements make exports from developing countries greener?". World Development, vol. 129, pp. 1-22.
[3]Abdenur, A. (2019). A double-edged sword: The climate politics of the Mercosur-EU Agreement, Climate Diplomacy. https://www.climate-diplomacy.org/news/double-edged-sword-climate-politics-mercosur-eu-agreement.
[4] Guarascio, F, Ekblom, J. (2019). Explainer: What an EU carbon border tax might look like and who would be hit, Reuters. https://www.reuters.com/article/us-climate-change-eu-carbontax-explainer/explainer-what-an-eu-carbon-border-tax-might-look-like-and-who-would-be-hit-idUSKBN1YE1C4
[5] The Hamilton Project. (October 2019). Ten Facts about the Economics of Climate Change and Climate Policy.
[6] Carbon Pricing Leadership Coalition. (June 2016). What is the Impact of Carbon Pricing on Competitiveness?
[7] World Trade Organization. WTO rules and environmental policies: key GATT disciplines. https://www.wto.org/english/tratop_e/envir_e/envt_rules_gatt_e.htm
[8] Chazalnoël, M. (2019). Climate Change and Migration in Vulnerable Countries, United Nations. https://www.un.org/sustainabledevelopment/blog/2019/09/climate-change-and-migration-in-vulnerable-countries/
[9] The Economist. (2018). Climate change will affect developing countries more than rich ones. https://www.economist.com/graphic-detail/2018/05/09/climate-change-will-affect-developing-countries-more-than-rich-ones
[10] Carbon Pricing Leadership Coalition. (June 2016). What is the Impact of Carbon Pricing on Competitiveness?
[11] The Economist. (2019). Greta Thunberg accuses rich countries of "creative carbon accounting". https://www.economist.com/finance-and-economics/2019/10/17/greta-thunberg-accuses-rich-countries-of-creative-carbon-accounting
[12] Turner, A. (2020). Are rich countries shirking their carbon responsibilities?. World Economic Forum. https://www.weforum.org/agenda/2020/02/rich-world-responsibility-carbon-footprint-climate-change/.
[13] The Economist. (2019). Emissions and omissions. https://www.economist.com/graphic-detail/2019/10/18/emissions-and-omissions.
[14] Myers, S. (23 September 2020). China's Pledge to Be Carbon Neutral by 2060: What It Means. The New York Times.

The New Age of merciless university regulation

[1] Danbury, S. (2020). The big face-to-face versus online training debate | Kineo. Retrieved 5 October 2020, from https://au.kineo.com/insights/the-big-face-to-face-versus-online-training-debate
[2] Explainer – Government changes to university fees - University of Melbourne Graduate Student Association. (2020). https://gsa.unimelb.edu.au/explainer-government-changes-university-fees/
[3] Khadem, N. (2020). Government uni changes mean 'some students will pay more than their degree costs'. Retrieved 8 October 2020, from https://www.abc.net.au/news/2020-06-20/study-arts-and-humanities-government-fees-tertiary-education/12374124#:~:text=His%20anal-

ysis%20found%20that%20the,student%20contribution%20increases%20by%20%247%2C696.
[4] Napier-Raman, K. (2020). Tehan's crackdown on failing students needs fact-checking. Here is a start. https://www.crikey.com.au/2020/08/13/fact-checking-dan-tehan/
[5] Macmillan, J. (2020). Students who fail classes could risk losing their HECS loans. https://www.abc.net.au/news/2020-08-13/university-hecs-limits-for-failing-students-explained/12553548#:~:text=Under%20the%20latest%20changes%2C%20students,if%20they%20wish%20to%20continue.

Why the US Presidential Election comes down to one decisive factor

[1] Kehoe, J. (2020). Donald Trump's historic tax cuts pass Congress. Australian Financial Review. https://www.afr.com/policy/tax-and-super/donald-trumps-historic-tax-cuts-pass-congress-20171221-h089ld.
[2] BBC News. (2020). US jobless rate falls to 50-year low. https://www.bbc.com/news/business-49934309#:~:text=The%20US%20unemployment%20rate%20has,adding%20136%2C000%20jobs%20last%20month.
[3] Gertz, G. (2020). Did Trump's tariffs benefit American workers and national security?. Brookings. https://www.brookings.edu/policy2020/votervital/did-trumps-tariffs-benefit-american-workers-and-national-security/.
[4] McIlroy, T. (2020). Australia's exemption from Trump's steel and aluminium tariff extended. Australian Financial Review. https://www.afr.com/politics/australias-exemption-from-trumps-steel-and-aluminum-tariff-extended-20180501-h0zgxj
[5] Gertz, G. (2020). Did Trump's tariffs benefit American workers and national security?. Brookings. https://www.brookings.edu/policy2020/votervital/did-trumps-tariffs-benefit-american-workers-and-national-security/.
[6] Home.treasury.gov. (2020). Tax Cuts for the American Family | U.S. Department of the Treasury. https://home.treasury.gov/policy-issues/top-priorities/tax-cuts-and-jobs-act/tax-cuts-for-the-american-family.
[7] Cliffe, C. (2020). The economic impact of US presidential elections. IG. https://www.ig.com/ae/trading-strategies/the-economic-impact-of-us-elections-200924.
[8] D'Souza, D. (2020). Joe Biden's Economic Plan: Save the Middle Class to Save America. Investopedia. https://www.investopedia.com/joe-biden-s-economic-plan-save-the-middle-class-4769869
[9] Sheets, N. (2020). What US election result will mean to global economic policies. Australian Financial Review. https://www.afr.com/wealth/personal-finance/what-us-election-result-will-mean-to-global-economic-policies-20200903-p55s40.

Cheer up; your life is not that bad – the headwind and tailwind asymmetry

[1] ABS (2020). "Economic downturn in an historical context." Retrieved 29/09, 2020, from https://www.abs.gov.au/articles/economic-downturn-historical-context#edit-group-description--3.
[2] Stanton, R., et al. (2020). "Depression, Anxiety and Stress during COVID-19: Associations with Changes in Physical Activity, Sleep, Tobacco and Alcohol Use in Australian Adults." International Journal of Environmental Research and Public Health 17(11): 13.
[3] Kinsella, E. (2020). As Victoria endures prolonged coronavirus lockdown, mental health workers see devastating impacts of COVID-19. ABC News.
[4] Davidai, S. and T. Gilovich (2016). "The Headwinds/Tailwinds Asymmetry: An Availability Bias in Assessments of Barriers and Blessings." Journal of Personality & Social Psychology 111(6): 835-851.
[5] Tversky, A. and D. Kahneman (1974). "Judgment under Uncertainty: Heuristics and Biases." Science 185(4157): 1124.
[6] Thaler, R. H. (2016). Misbehaving – The Making of Behavioral Economics, W. W. Norton & Company.
[7] Bradley, G. W. (1978). "Self-serving biases in the attribution process: A reexamination of the fact or fiction question." Journal of Personality and Social Psychology 36(1): 56-71.
[8] Rhodewalt, F., et al. (1991). "Self-handicapping: The role of discounting and augmentation in the preservation of self-esteem." Journal of Personality and Social Psychology 61(1): 122-131.

COVID-19 and the revival of the Australian manufacturing industry

[1] Productivity Commission. (2003). Trends in Australian manufacturing. https://www.pc.gov.au/research/completed/manufacturing/tiam.pdf
[2] Department of Foreign Affairs and Trade. (2015). Australia's Composition of Trade. https://www.dfat.gov.au/sites/default/files/fifty-years-of-Australias-trade.pdf
[3] Banks, G. (1998). "Committing to trade liberalisation in Australia", Agenda, vol. 5, no. 2, pp. 147-164.
[4] Productivity Commission. (1997). The Automotive Industry. https://www.pc.gov.au/inquiries/completed/automotive-1997/58automot1.pdf
[5] RT. (2017). Rest in peace: Australian auto industry dies at 69. https://www.rt.com/business/407305-australia-car-industry-death/
[6] Australian Trade and Investment Commission. (2020). Australian industry capabilities. https://www.austrade.gov.au/International/Buy/Australian-industry-capabilities/manufacturing
[7] Department of Defence. (2017). Naval Shipbuilding Plan. https://www.defence.gov.au/navalshipbuilding/Plan/
[8] Defence SA. (2017). Naval Shipbuilding Plan. https://www.defencesa.com/domains/maritime/naval-shipbuilding-plan
[9] Australian Trade and Investment Commission. (2020). COVID-19: ASEAN region update for Australian exporters. https://www.austrade.gov.au/news/covid-19/updates/asean
[10] Australian Trade and Investment Commission. (2020). Export markets – Singapore. https://www.austrade.gov.au/Australian/Export/Export-markets/Countries/Singapore/Industries
[11] Brown, G. (2020)/ Mattress maker Koala heads for China despite budget focus. https://www.theaustralian.com.au/nation/mattress-maker-koala-heads-for-china-despite-budget-focus/news-story/76507ff48c3fd6e0bf33c1d2e2c8ea8b
[12] Edwards, J. (2020). The costs of COVID: Australia's economic prospects in a wounded world. https://www.lowyinstitute.org/publications/costs-covid-australia-economic-prospects-wounded-world
[13] Emerson, C. (2020). Protectionism won't make Australia great again. https://www.afr.com/policy/economy/protectionism-won-t-make-australia-great-again-20200504-p54pij
[14] Department of Industry, Science, Energy and Resources. (2020). Manufacturing a new future for Australia. https://www.industry.gov.au/news-media/manufacturing-a-new-future-for-australia
[15] Pupazzoni, R. (2020). Australian manufacturing has been in terminal decline but coronavirus might revive it. https://www.abc.net.au/news/2020-07-23/coronavirus-pandemic-leads-to-australian-manufacturing-revival/12481568

A World Beyond Financial Maximisation

[1] Friedman, Milton. 1970. "A Friedman Doctrine: The Social Responsibility of Business is to Increase Its Profits". The New York Times Magazine, September 13.
[2] Strickler, Y. (2019) This Could Be Our Future: A Manifesto for a More Generous World, United States: Penguin Publishing Group.
[3] Charlton, Emma. (2019) "New Zealand has unveiled its first 'well-being' budget". World Economic Forum, 30 May.

The RBA and monetary policy

[1] RBA. (2020). About Monetary Policy. https://www.rba.gov.au/monetary-policy/about.html
[2] Mitchell, C. (2020). Liquidity Trap. Investopedia. https://www.investopedia.com/terms/l/liquiditytrap.asp
[3] RBA. (2020). Unconventional Monetary Policy.
[4] Lowe, P. (2020). Responding to the Economic and Financial Impact of COVID-19. Speech, Reserve Bank of Australia. https://www.rba.gov.au/speeches/2020/sp-gov-2020-03-19.html
[5] RBA. (2020). Term Funding Facility to Support Lending

to Australian Businesses. https://www.rba.gov.au/mkt-operations/term-funding-facility/announcement.html
[6] Bank of England. (2020). Official Bank Rate history. https://www.bankofengland.co.uk/boeapps/database/Bank-Rate.asp
[7] Staff Author. (2020). Quantitative Easing (QE) Definition. https://www.investopedia.com/terms/q/quantitative-easing.asp
[8] FXCM UK. (2020). What Is Quantitative Tightening?. https://www.fxcm.com/uk/insights/what-is-quantitative-tightening/
[9] Minutes of the Monetary Policy Meeting of the Reserve Bank Board. (2020). https://www.rba.gov.au/monetary-policy/rba-board-minutes/2020/2020-09-01.html
[10] McInnes, W. (2020). Aussie dollar won't help economy despite hitting 17-year low.
[11] https://www.afr.com/markets/currencies/aussie-dollar-slumps-to-17-year-low-20200318-p54b70

Insight into the rebound of 2020's stock market

[1] Wall Street Journal. (2020). Dow Jones Industrial Average. Retrieved from https://www.wsj.com/market-data/quotes/index/US/DOW%20JONES%20GLOBAL/DJIA/advanced-chart
[2] Meredith, S. (2020, March 6). OPEC+ fails to agree on massive supply cut, sending crude prices to 2017 lows. CNBC. Retrieved from https://www.cnbc.com/2020/03/06/opec-meeting-coronavirus-weighs-on-oil-demand-as-oil-prices-fall.html
[3] Franck, T. (2020, August 18). Here's a list of stock bull markets through time and how this new one stacks up. CNBC. Retrieved from https://www.cnbc.com/2020/08/18/heres-a-list-of-stock-bull-markets-through-time-and-how-this-new-one-stacks-up.html
[4] Federal Reserve. (2020, March 23). Federal Reserve announces extensive new measures to support the economy. Retrieved from https://www.federalreserve.gov/newsevents/pressreleases/monetary20200323b.htm
[5] Cheng, J., Skidmore, D., Wessel, D. (2020, July 17). What's the Fed doing in response to the COVID-19 crisis? What more could it do? Brookings. Retrieved from https://www.brookings.edu/research/fed-response-to-covid19/
[6] Dayen, D. (2020, May 27). Corporate Rescue. How the Fed bailed out the investor class without spending a cent. The Intercept. Retrieved from https://theintercept.com/2020/05/27/federal-reserve-corporate-debt-coronavirus/
[7] FRED (2020). Moody's Seasoned Baa Corporate Bond Yield Relative to Yield on 10-Year Treasury Constant Maturity. Retrieved from https://fred.stlouisfed.org/series/BAA10Y
[8] Leonhardt, M. (2020, June 11). Why are we in a recession if the stock market is recovering? CNBC Retrieved from https://www.cnbc.com/2020/06/11/why-are-we-in-a-recession-if-the-stock-market-is-recovering.html
[9] Trading Economics. (2020). United States Unemployment Rate. Retrieved from https://tradingeconomics.com/united-states/unemployment-rate
[10] Siblis Research. (2020). U.S. Stock Market Sector Weightings. Retrieved from https://siblisresearch.com/data/sp-500-sector-weightings/
[11] Fitzgerald, M. (2020, May 12). Young investors pile into stocks, seeing 'generational-buying moment' instead of risk. CNBC. Retrieved from https://www.cnbc.com/2020/05/12/young-investors-pile-into-stocks-seeing-generational-buying-moment-instead-of-risk.html
[12] Winck, B. (2020, July 10). Retail traders make up nearly 25% of the stock market following COVID-driven volatility, Citadel says. Business Insider. Retrieved from https://www.businessinsider.com.au/retail-investors-quarter-of-stock-market-coronavirus-volatility-trading-citadel-2020-7?r=US&IR=T
[13] Fox, M. (2020, July 4). Goldman says an under-the-radar driver is signalling further upside in stocks – one not driven by retail investors. Markets Insider. Retrieved from https://markets.businessinsider.com/news/stocks/stock-market-outlook-fund-flows-upside-not-driven-retail-investors-2020-7-1029366679#
[14] Schield, B. (2020, July 8). So much for the Robinhood effect: Influx of day traders not seen moving markets. S&P Global Market Intelligence. Retrieved from https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/so-much-for-the-robinhood-effect-influx-of-day-traders-not-seen-moving-markets-59254485

Economic Rationality

[1] Kenton, W. (2020). Neoclassical Economics, Investopedia. https://www.investopedia.com/terms/n/neoclassical.asp#:~:text=Neoclassical%20economics%20is%20a%20broad,earlier%20theories%20of%20classical%20economics.
[2] Marschak, J. (1950). Rational Behavior, Uncertain Prospects, and Measurable Utility. Econometrica. https://www.jstor.org/stable/1907264?seq=1
[3] Keane, D. (16 March 2020). Coronavirus is causing panic buying, but what does that mean for Australia's food security?. ABC News. https://www.abc.net.au/news/2020-03-16/coronavirus-is-not-a-threat-to-food-supply-experts-say/12058412
[4] Chen, J. (2020). Base Rate Fallacy. Investopedia. https://www.investopedia.com/terms/b/base-rate-fallacy.asp
[5] Mannes, A. (10 June 2020). People Are Overly Confident in Their Own Knowledge, Despite Errors. APS. https://www.psychologicalscience.org/news/releases/people-are-overly-confident-in-their-own-knowledge-despite-errors.html
[6] B, Elizabeth. (6 August 2020). The Next Global Depression Is Coming and Optimism Won't Slow It Down, Time. https://time.com/5876606/economic-depression-coronavirus/
[7] Dauter, L. (2013). Economic Sociology. Britannica. https://www.britannica.com/topic/economic-sociology
Biletzki, A. & Matar, A. (2020). Ludwig Wittgenstein. The Stanford Encyclopedia of Philosophy. https://plato.stanford.edu/entries/wittgenstein/
[8] Hayes, A. (2020). Rational Behaviour. Investopedia. https://www.investopedia.com/terms/r/rational-behavior.asp
[9] Kalberg, S., (2010). Max Weber's Types of Rationality: Cornerstones for the Analysis of Rationalization Processes in History. Chicago Journals. bu.edu/sociology/files/2010/03/Weberstypes.pdf

Self-driving cars and the law

[1] Levin, S., 2018. Uber crash shows 'catastrophic failure' of self-driving technology, experts say. The Guardian, [online] Available at: <https://www.theguardian.com/technology/2018/mar/22/self-driving-car-uber-death-woman-failure-fatal-crash-arizona> [Accessed 7 September 2020].
[2] Beene, R. and Levin, A., 2019. Self-Driving Uber in Crash Wasn't Designed to See Jaywalkers. Bloomberg, [online] Available at: <https://www.bloomberg.com/news/articles/2019-11-05/self-driving-uber-in-crash-wasn-t-programmed-to-spot-jaywalkers> [Accessed 7 September 2020].
[3] Grossman, M., 2018. The New Norm: Strict Liability For Autonomous Automobile Accidents. [Blog] Medium, Available at: <https://medium.com/@marcdgrossman/the-new-norm-strict-liability-for-autonomous-automobile-accidents-38bbd0dc0a43#:~:text=Hence%2C%20law%20advocates%20agree%20the,malfunctions%20in%20self%2Ddriving%20mode.> [Accessed 8 September 2020].
[4] Schellekens, M., 2018. No-fault compensation schemes for self-driving vehicles. Law, Innovation and Technology, [online] 10(2), pp.314-333. Available at: <https://doi.org/10.1080/17579961.2018.1527477> [Accessed 7 September 2020].
[5] Woodall, B., 2018. Uber avoids legal battle with family of autonomous vehicle victim. Reuters, [online] Available at: <https://www.reuters.com/article/us-autos-selfdriving-uber-settlement/uber-avoids-legal-battle-with-family-of-autonomous-vehicle-victim-idUSKBN1H5092> [Accessed 7 September 2020].
[6] Eastman, A., 2016. Is No-Fault Auto Insurance the Answer to Liability Concerns of Autonomous Vehicles?. American Journal of Business and Management, 5(3), pp.85-90.
[7] Eastman, A., 2016. Is No-Fault Auto Insurance the Answer to Liability Concerns of Autonomous Vehicles?. American Journal of Business and Management, 5(3), pp.85-90.
[8] Eastman, A., 2016. Is No-Fault Auto Insurance the Answer to Liability Concerns of Autonomous Vehicles?. American Journal of Business and Management, 5(3), pp.85-90

[10] Schellekens, M., 2018. No-fault compensation schemes for self-driving vehicles. Law, Innovation and Technology, [online] 10(2), pp.314-333. Available at: <https://doi.org/10.1080/17579961.2018.1527477> [Accessed 7 September 2020].
[11] Eastman, A., 2016. Is No-Fault Auto Insurance the Answer to Liability Concerns of Autonomous Vehicles?. American Journal of Business and Management, 5(3), pp.85-90.
[12] Schellekens, M., 2018. No-fault compensation schemes for self-driving vehicles. Law, Innovation and Technology, [online] 10(2), pp.314-333. Available at: <https://doi.org/10.1080/17579961.2018.1527477> [Accessed 7 September 2020].

It's Time for Economists to Get Out of the Shadow of Political Influence and Neoliberalism

[1] Acemoglu, D & Robinson, A 2013, 'Economics versus Politics: Pitfalls of Policy Advice', Journal of Economic Perspectives, vol 27, no. 2, pp 173–192, <https://economics.mit.edu/files/10403>.
[2] Anderson, T & Maibom, J 2016, 'The trade-off between efficiency and equity', Vox EU, 29 May, viewed 11 October 2020, < https://voxeu.org/article/trade-between-efficiency-and-equity>.
[3] Bhattacharjee, A & Schaffer, M 2019, 'Economics Nobel 2019: why Banerjee, Duflo and Kremer won', The Conversation, 15 Oct, viewed 3 October 2020, <https://theconversation.com/economics-nobel-2019-why-banerjee-duflo-and-kremer-won-125276#:~:text=The%20fundamental%20contribution%20of%20Banerjee,then%20evaluate%20their%20cost%20effectiveness>.
[4] Chang, R & Velasco, A 2020, 'Economic policy incentives in the fight against pandemics', Vox EU, 1 May, viewed 3 October 2020, <https://voxeu.org/article/economic-policy-incentives-fight-against-pandemics>.
[5] Dennis, R 2020, 'Morrison's tax cuts are not temporary or targeted – they are ideological and inequitable', The Guardian, 16 Sep, viewed 3 October 2020, <https://www.theguardian.com/commentisfree/2020/sep/16/morrisons-tax-cuts-are-not-temporary-or-targeted-they-are-ideological-and-inequitable?fbclid=IwAR1MRqdguDUKTQDpk_17b6IU8Wf9-zosn35RYsolliQgQFaBtGX1lAUeO9c>.
[6] Elliott, L 2018, 'Inequality gap widens as 42 people hold same wealth as 3.7bn poorest', The Guardian, 22 Jan, viewed 3 October 2020, <https://www.theguardian.com/inequality/2018/jan/22/inequality-gap-widens-as-42-people-hold-same-wealth-as-37bn-poorest>.
[7] Grudnoff, M 2020, Early tax cuts as stimulus – gender analysis, The Australia Institute, viewed 3 October 2020, <https://www.tai.org.au/sites/default/files/Bringing%20forward%20the%20tax%20cuts%20-%20gender%20%5BWEB%5D.pdf>.
[8] Hirschman, D & Popp Berman, E 2014, 'Do economists make policies? On the political effects of economics', Socio-Economic Review, volume 12, no. 4, pp 779–811, <https://doi.org/10.1093/ser/mwu017>.
[9] Janda, M & Khadem, N 2019, 'Coalition and Labor income tax plans compared as federal election looms', ABC, 8 Apr, viewed 12 October 2020, < https://www.abc.net.au/news/2019-04-05/tax-plans-compared-as-federal-election-looms/10973968?nw=0>.
[10] Kahneman, D & Tversky, A 1979, 'Prospect theory: An Analysis of Decision under Risk' Econometrica, vol. 47, no. 2, pp. 263-291, <https://www.uzh.ch/cmsssl/suz/dam/jcr:00000000-64a0-5b1c-0000-00003b7ec704/10.05-kahneman-tversky-79.pdf>
[11] Monbiot, G 2016, 'Neoliberalism – the ideology at the root of all our problems', The Guardian, 15 Sep, viewed 11 October 2020, <https://www.theguardian.com/books/2016/apr/15/neoliberalism-ideology-problem-george-monbiot>.
[12] Murphy, K 2020, 'Australia's economy was already weak – and the coronavirus pandemic has belted it into recession', The Guardian, 2 Sep, viewed 3 October 2020, <https://www.theguardian.com/business/2020/sep/02/australias-economy-was-already-weak-and-the-coronavirus-pandemic-has-belted-it-into-recession>.

Economist for pragmatic energy policy

[1] World-nuclear.org. (2019). Safety of Nuclear Reactors - World Nuclear Association. https://www.world-nuclear.org/information-library/safety-and-security/safety-of-pants/safety-of-nuclear-power-reactors.aspx.
[2] OEC. (2020). Australia (AUS) Exports, Imports, And Trade Partners. https://oec.world/en/profile/country/aus/.
[3] Dyke, G. (2020). Nuclear power through the lens of an Australian trade union. Energy Policy Institute of Australia.
[4] The Australian Workers' Union. (2020). Australia Wakes Up To The Great Gas Rip Off, AWU Calls For Bipartisanship - The Australian Workers' Union. https://www.awu.net.au/news/2020/09/12725/australia-wakes-up-to-the-great-gas-rip-off-awu-calls-for-bipartisanship/.
[5] Markandya, A. and Wilkinson, P. (2007). Electricity generation and health. The Lancet, vol. 370, no. 9591, pp.979-990.
[6] Minerals Council of Australia. (2019). Untapped Potential. Oec.world. 2018. Australia (AUS) Exports, Imports, And Trade Partners. https://oec.world/en/profile/country/aus/
[8] Canstar Blue. (2020). Electricity Costs Per Kwh | QLD, SA, VIC, NSW Rates – Canstar Blue. https://www.canstarblue.com.au/electricity/electricity-costs-kwh/
[9] Energyhub.org. (2020). Electricity Prices In Canada (Updated 2020). https://www.energyhub.org/electricity-prices/#:~:text=The%20average%20cost%20of%20electricity%20in%20Ontario%20is%20%240.125%20per,and%2018%25%20on%2Dpeak.
[10] Katter, B. (2020). Inquiry Into Food Pricing And Food Security In Remote Indigenous Communities. https://www.aph.gov.au/DocumentStore.ashx?id=99d29992-86ff-4905-af01-2727a0006b74&subId=686169

We use *economics* to help our clients make the best decisions

Frontier Economics helps companies with their biggest challenges – market strategies, regulatory reviews, and competition inquiries. And we help governments design innovative policies and regulatory systems.

We are passionate about applying good economics and offering rigorous answers to some of the most difficult questions in consulting.

From offices in Australia and Singapore, we advise across Australia, New Zealand and the Asia-Pacific region.

We recruit exceptional people, who fit our inclusive, collegiate culture. To explore what we do, visit www.frontier-economics.com.au

www.twitter.com/frontierasia

www.linkedin.com/company/frontier-economics-asia-pacific

FRONTIER ECONOMICS

BRISBANE | MELBOURNE | SINGAPORE | SYDNEY

frontier economics


essa


EQuilibrium