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FOR WORSE?

OR

2022

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Publications Director's Address

Ivy Chen

2022 has been a year of connection, allowing us to re-experience the joys of face-to-face learning and overseas adventures. The writers of ESSA have continued to pursue their interest in economics and keenly observe significant local and global events throughout this year – and there have been many. From Russia's invasion of Ukraine to the overturning of Roe v Wade, from soaring consumer prices to Elon Musk's purchase of Twitter, our writers have explored topics on historical economic thinking, contemporary issues, and offered their predictions on the future.

This year's Equilibrium asked the question, 'For better or for worse?'. It centres on the social, technological, and political change we are currently living through. With such a broad theme, we hoped to encourage our writers to think critically about a topic of interest and consider its implications for the future.

Like previous years, EQ 2022 has truly been a cross-campus effort with students from the University of Melbourne and Monash University investing their time and effort into creating this magnificent publication. We would like to thank all those who have contributed including our sponsors, writers, editors and graphic designers.

Happy reading!

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Cryptocurrencies and Central Bank Digital Currency



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Public Education Economist | Public Access and Education

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'Innovation has the potential to make financial services faster, cheaper, and more inclusive and to do so in ways that are native to the digital ecosystem...but early on, new products and platforms are often fraught with risks, including fraud and manipulation, and it is important and sometimes difficult to distinguish between hype and value.'

– Dr. Lael Brainard, Vice Chair of the Board of Governors of the US Federal Reserve System, July 2022

Over the past decade, a new type of digital currency with its own language and symbols has emerged: cryptocurrency. And in the world of cryptocurrency, things change fast. Developments in cryptocurrency have motivated us to think about what makes something money in an era of rapid technological change and the digitalisation of so many aspects of our lives.

In this article we will explore the nature of cryptocurrencies and the emergence of a new form of digital currency that is being developed by some central banks, with the Reserve Bank of Australia presently undertaking a pilot to see whether or not there is a case for it issuing a digital currency.

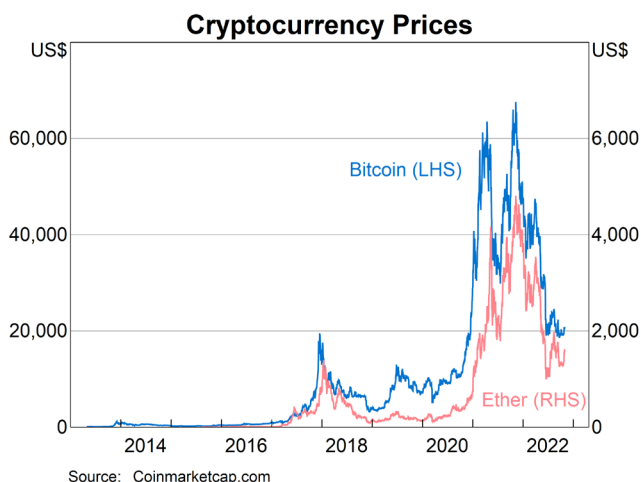
What are cryptocurrencies?

Cryptocurrencies are digital tokens. They are a type of digital currency that allows people to make payments directly to each other through an online system using distributed ledger technology, such as blockchain. Cryptocurrencies have no legislated or intrinsic value; they are simply worth what people are willing to pay for them in the market. This is in contrast to national currencies, which get

part of their value from being legislated as legal tender. There are a number of cryptocurrencies – the most well-known of these are Bitcoin and Ether.

Activity in cryptocurrency markets has increased significantly in recent years. The fascination with these currencies appears to have been more speculative (buying and selling cryptocurrencies to make a profit) than related to their use as a new and unique system for making payments. Related to this, and as seen in the first graph, there has also been a high degree of volatility in the prices of many cryptocurrencies. For example, the price of Bitcoin increased from about US\$30,000 in mid-2021 to almost US\$70,000 toward the end of 2021 before falling to around US\$20,000 in mid-2022. Other cryptocurrencies including Ether have experienced similar volatility. The extraordinary interest in cryptocurrencies has also seen a growing amount of computing power used to solve the computationally intensive cryptographic puzzles that many of these systems use to help protect them from malicious activity. Despite the increased level of interest in cryptocurrencies, there is scepticism about whether they could ever replace more traditional payment methods or national currencies.

1. To learn more about cryptocurrencies, including Bitcoin, see the Reserve Bank Explainer on Digital Currencies: <<https://www.rba.gov.au/education/resources/explainers/cryptocurrencies.html>>.



Is cryptocurrency money?

A frequently asked question is whether cryptocurrency can be defined as ‘money’. The short answer is that cryptocurrency is not a form of money. To understand why, we can ask whether the characteristics of cryptocurrencies match the key characteristics of money:

- **Widely accepted means of payment** – can cryptocurrencies be used to buy and sell things? Money generally comes in the form of a nation’s currency, and is widely accepted as a means of payment. While cryptocurrencies can be used to buy and sell things, they are not widely accepted as a means of payment for goods and services, and surveys suggest that only a small fraction of cryptocurrency holders use them regularly for payments.
- **Store of value** – can the purchasing power of cryptocurrencies (their ability to purchase a similar basket of goods and services) be maintained over time? Large fluctuations in the price of many cryptocurrencies mean that their purchasing power is not maintained over time, reducing their effectiveness as a store of value.
- **Unit of account** – are cryptocurrencies a common way of measuring the value of goods and services? In Australia, the prices of goods and services are measured in Australian dollars. While some businesses may accept cryptocurrencies as payment, they are not commonly used to measure and compare prices.

So, while cryptocurrencies can be used to make payments, currently their use as a means of payment is limited and they do not display the key characteristics of money.

However, there is one type of digital currency that could be considered money — digital currency issued by a central bank.

What is central bank digital currency?

A central bank digital currency (CBDC) can most easily be understood as a digital form of cash. It can be issued by the central bank, accessible to the general public, and used to settle transactions between firms and households.

The unit of account would be the national currency, and it could be exchanged at parity (i.e. one for one) with other forms of money, such as physical currency or electronic deposits with well-regulated financial institutions.

What are the main differences between cryptocurrencies and CBDCs? In other words, what makes a CBDC money? A central bank has the ability to ensure that a digital currency it issues exhibits the three main features of money — that is, a CBDC could function as a widely accepted means of payment, store of value and unit of account.

Because it is issued by a central bank, a CBDC would have legal tender status, making it widely accepted as a means of payment. A CBDC would also be an equivalent store of value to other forms of money, since it could be exchanged for an equal value of physical cash or electronic deposits. Finally, the unit of account for CBDC issued by the Reserve Bank would be the Australian dollar. This means it could be used to measure the value of goods and service. These and other key features have been summarised in the table below.

Features of Money: Cryptocurrencies versus CBDCs

CHARACTERISTIC	CRYPTOCURRENCIES	CBDCs
Means of payment	Limited acceptance; not legal tender	Wide acceptance; legal tender
Store of value	Value depends on the market price (which have tended to be volatile)	Stable value (consistent with central bank price stability mandate)
Unit of account	Own unit of account	Fiat currency (e.g. Australian dollars)
Governance	Typically decentralised; relies on consensus between large number of entities	Centralised

Surveys conducted by the Bank for International Settlements indicate that CBDCs are an active area of research for nearly all central banks. Despite this, only a few central banks have actually issued digital currencies – to date no high income country has issued a CBDC. An important consideration is whether issuing a CBDC would be in the public interest. Many of the potential benefits of CBDCs have largely been realised by the digital money that most people hold in their bank accounts and electronic payment services (such as debit cards). However, the Reserve Bank recognises that a CBDC could potentially support a number of public policy objectives, including safeguarding public trust in money and promoting efficiency, safety, resilience, and innovation in the payment system. We are continuing to closely examine the case for a CBDC and working with the private sector and other central banks on this issue, considering the relevant technical issues as well as broader policy implications.

What next?

As shown in the second graph, considerable research has already been undertaken by central banks, including the Reserve Bank, on the design and technical feasibility of CBDC. A question that has received less attention to date, particularly in countries like Australia with modern and well-functioning payment and settlement systems, is the rationale for a CBDC and the potential economic benefits of introducing one.

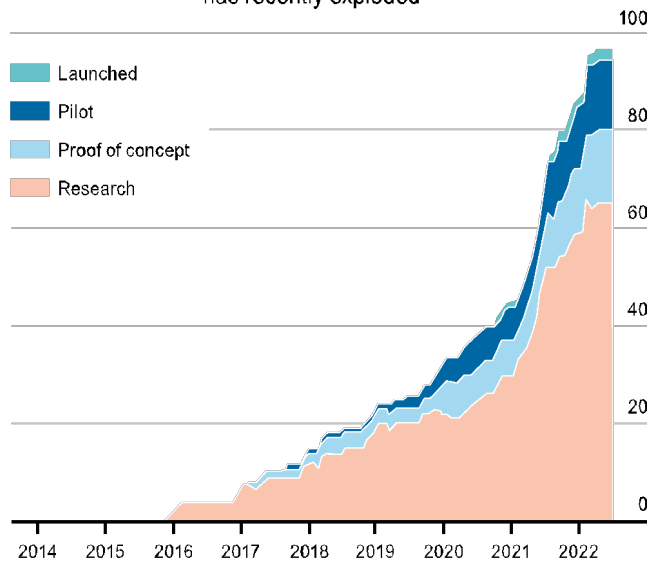
Cryptocurrencies and Central Bank Digital Currency | **Naghiloo & Dark**

To address this gap, the Reserve Bank recently entered into a collaborative research project with the Digital Finance Cooperative Research Centre (DFCRC). The project with the DFCRC is focused on identifying business models and use cases that could be supported by the issuance of a CBDC and assessing their potential economic benefits. The project will also be an opportunity to further understand some of the technological, legal, and regulatory considerations associated with a CBDC.

The project, which commenced in July 2022 and is expected to take about a year to complete, will involve the development of a limited-scale pilot CBDC that will operate in a ring-fenced environment for a period of time and is intended to be a real claim on the Reserve Bank. In September, the project released a white paper inviting interested industry participants to make submissions on CBDC use cases that have the potential to deliver benefits to the functioning of the Australian economy and financial system. These proposals will be used to inform assessments of the rationale for an Australian CBDC and provide insights into the possible benefits of a CBDC. A report on the findings from the project will contribute to ongoing research into the desirability and feasibility of a CBDC in Australia.

Gaining currency

The number of CBDCs under research and development has recently exploded



Source: CBDC Tracker (cbdctracker.org). The chart shows the status of CBDCs worldwide by month. Proof of concept = advanced research stage. Updated July 2022.

Conclusion

Over the past decade, cryptocurrencies have gained much public attention through their growth in speculative use and volatility in value. Their nature and use has also sparked much debate about the potential benefits and costs of digital currencies, the future of cryptocurrency markets, and money more generally. As the research, analysis, and policy work continues, it will certainly be interesting to see how the discussion around cryptocurrency and CBDCs evolves!

Problem Solving

Identify strategies to solve problems



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Analysis

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Collaboration

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Communication

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Global Awareness

Take a global perspective



Adaptability

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Inequality, the Median Voter, and Social Spending

Ivy Chen

Do poorer voters prefer higher taxes?

de Tocqueville¹ once famously argued:

‘The size of the government, measured by tax revenue and public spending, depends essentially on the distribution of wealth and on the extent of voting rights.’²

So to the first question, this famous Frenchmen would have certainly answered yes. And, in fact, most formal models would agree. Yet, why do some highly unequal countries have relatively low levels of social spending?

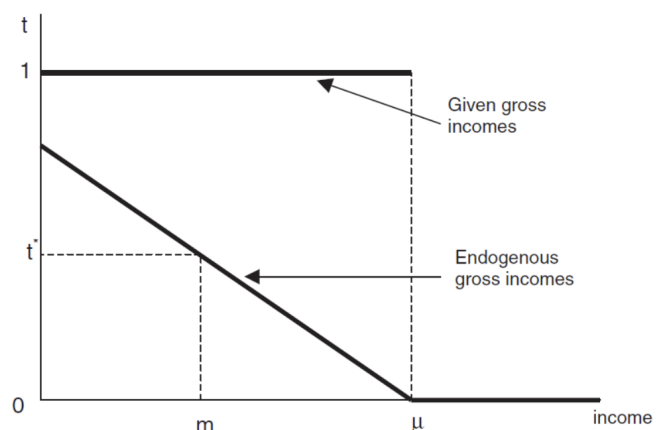
Does a more enfranchised population necessarily give rise to better representation?

This article illustrates that, assuming a balanced budget, whereby what is taxed is spent, the level of social spending within a government is partly dictated by the spread of the franchise and, given that increased voters lead to a greater distribution of wealth, inequality. It echoes de Tocqueville’s view on the size of government¹ but examines how the direction of the effect, or total effect, remains ambiguous. We first consider a formal voting model – the model of Meltzer and Richard, also known as the RMR model,³ which argues that democratisation increases social spending. Although this was observed in the United States in the mid to late 20th century, the RMR model often does not reflect empirical phenomena, particularly trends since the latter half of the 20th century.^{2,4,5} This article contemplates four critiques of the RMR model that either skew the median voter or imply that the median voter is irrelevant to determining social spending.

The Robert Meltzer-Richard model (1981)

The RMR model proposes that as voting rights expand, so too should taxation.³ That is, if one’s income is below the mean income, they should prefer 100 per cent tax, albeit not realistic in practice as people need the incentive to work. We can thus consider their preference as being very close to 100 per cent tax, as they will gain wealth from redistribution. As one’s income increases towards the mean, their preferred tax rate should also decrease (see Figure 1). When income levels exceed the mean income, the individual prefers zero tax, because they have nothing to gain from redistribution.³

Figure 1:



Source: Larcinese (2022)

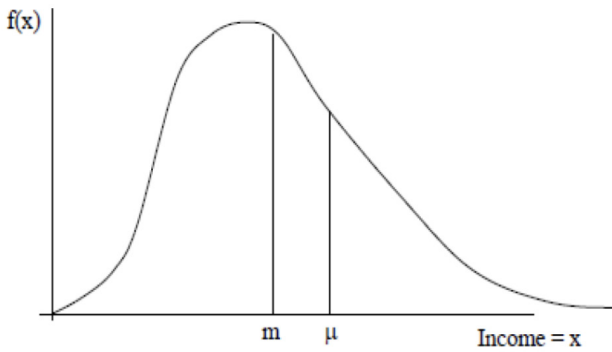
1. de Tocqueville, A. (1835). *Democracy in America*. Oxford University Press.

2. Larcinese, V. (2007). Voting over redistribution and the size of the welfare state: The role of turnout. *Political Studies*, 55(3), 568–585. <https://doi.org/10.1111/j.1467-9248.2007.00658.x>

3. Meltzer, A. H., & Richard, S. F. (1981). A rational theory of the size of government. *Journal of Political Economy*, 89(5), 914–927. <https://doi.org/10.1086/26103>

The RMR model allows tax preferences to be ranked according to income. Hence, the median income corresponds to the median voter. Income distributions are typically right-skewed,⁴ and the RMR model also predicts a positive tax rate, meaning that the median is always below the mean³ (see Figure 2).

Figure 2:



Source: Larcinese (2022)

When one very wealthy voter is added to the cohort, the mean can increase substantially, whereas the median will only move up to the income of the next individual. The sensitive nature of the mean relative to the median allows the distance between the median and the mean to capture the level of income inequality.³ Historically, voting has been restricted to the wealthy, educated, male upper-class – the income distribution’s right tail.² With democratisation, as people of more varied incomes are given the right to vote, the median shifts left while the mean remains further right due to the skewness. The increasing distance between the two measures represents greater income inequality. Following the model’s downward sloping income-tax curve, the lower median income – also the median voter – indicates a preference for higher taxes – there are more people with more to gain from redistribution. Adopting Black’s (1948) median voter theorem,⁵ the RMR model demonstrates how the extension of voting rights can explain redistribution and the growth of social spending.

A study that supports the RMR model considered the effects of the US Voting Rights Acts of the 1960s and 70s on voter turnout and welfare spending, particularly for the southern states.⁶ The new Acts removed certain voting prerequisites, namely poll taxes and literacy tests. Using state and local expenditure data for 46 states during 1950 to 1988, they examined how these changes influenced turnout and spending over that time period, controlling for state economic and demographic characteristics. Typically, people who could not vote because they could not afford poll taxes or could not pass the literacy tests had lower incomes than the median voter. Hence, eliminating these hurdles moved the median voter down the income distribution. A poorer

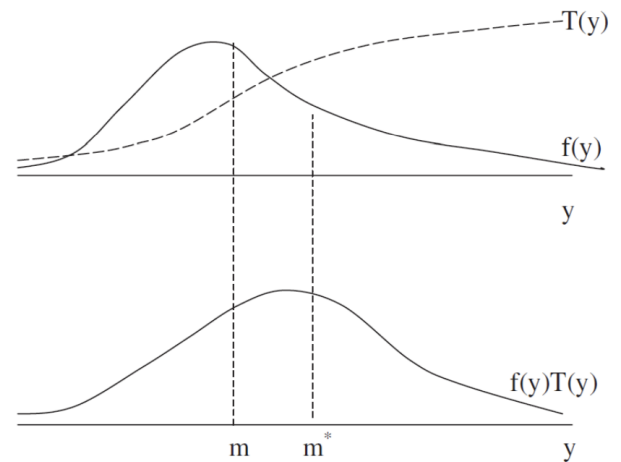
median voter had a profound effect on welfare spending. The regression coefficients estimated by four ordinary least squares regressions implied that abolishing poll taxes increased government spending by 11 to 20 per cent and abolishing literacy tests increased spending by 13 per cent. Furthermore, a 0.2 decline in the voter income to population income ratio raised spending by 5 to 12 per cent; all three estimates are significant at the 5% significance level. These results reinforce the RMR model by showing how removing obstacles to registration in the US increased voter turnout and income distribution. This consequently led to a poorer median voter, who prefers higher taxes and greater redistribution, and increased welfare spending without significantly increasing other spending.⁸

Although the RMR model applies to the implementation of the US Voting Rights Acts, this study is unique because it explores the short-term effects of a sudden, large expansion in income distribution. In democracies with more established and stable voting procedures, Meltzer and Richard’s hypothesis is often contradicted. Numerous studies challenge the behaviour and position of the median voter as inequality increases. This essay looks at four key critiques: asymmetric political participation,⁷ the problem of collective action,⁸ lack of knowledge of the link between inequality and public policy,⁹ and the prospect of upward mobility.¹⁰

Asymmetric political participation

Lindert proposes that expanding the income distribution will not only stagnate spending growth but decrease it.⁷ This ‘anti-spending’ effect of inequality stems from voter turnout and how it is a positive function of income.² A median voter is meaningless if there is abstention. Therefore, the pure median voter, in an income distribution untouched by institutions and collective action predispositions,⁷ becomes skewed when weighted by the distribution for voter turnout. The product of the two distributions, the turnout distribution and income distribution, skews the new income distribution in a way that the peak is more central, and the median voter shifts right – they are wealthier⁹ (see Figure 3).

Figure 3:



Source: Larcinese (2022)

4. Pogorelskiy, K., & Traub, S. (2017). Skewness, tax progression, and demand for redistribution: Evidence from the UK. CRETA, 29.
 5. Black, D. (1948). On the rationale of group decision-making. *Journal of Political Economy*, 56(1), 23–34. <https://doi.org/10.1086/256633>
 6. Husted, T. A., & Kenny, L. W. (1997). The effect of the expansion of the voting franchise on the size of government. *Journal of Political Economy*, 105(1), 54–82. <https://doi.org/10.1086/262065>
 7. Lindert, P. H. (2016). Real and imagined threats to the welfare state. Hitotsubashi Institute for Advanced Study.
 8. Olson, M. (1971). *The logic of collective action: Public goods and the theory of groups*. Harvard University Press. <https://doi.org/10.2307/j.ctvjsf3ts>
 9. Bartels, L. M. (2005). Homer gets a tax cut: Inequality and public policy in the American mind. *Perspectives on Politics*, 3(1), 15–31. <https://doi.org/10.1017/S1537592705050036>

Inequality, the Median Voter, and Social Spending | Ivy Chen

Returning to the RMR model, the equilibrium tax rate corresponding to the new median voter will be lower. Moreover, the effect of voter turnout highlights that targeting the median voter is not the most effective strategy for office-seeking politicians.¹¹ Instead, politicians should target the *expected* median voter⁷ who is higher than the median voter corresponding to the median of the original income distribution (see m^* in Figure 3). This results in proposed policies of lower social spending and redistribution overall.

Problem of collective action

Another critique of the RMR model is the problem of collective action. Macur Olsen, an American economist, contended that the larger a group, is the more likely that members, and non-members, will free-ride and the less likely the organisation will provide the optimal level of public goods.¹⁰ Consequently, there is little chance that the group will cooperate to pursue common interests. Expanding the voting group will have an equivalent effect. Here, the common interest of the newly franchised, poorer voters, is to increase redistribution so they can gain more, since they have income less than the median voter.³ However, the cohort is also becoming more latent, so it becomes unlikely that the size of the government will increase.

Lack of knowledge of the link between inequality and public policy

There is also an argument against Meltzer and Richard for how voters with lower income do not desire more redistribution in the first place. Bartels attributes this to people's inability to link inequality to public policy decisions, due to, for example, lack of education.¹¹ The paper contemplates the regressive tax cuts proposed by the Bush administration in the US in 2001 and 2003, which also included repealing the estate tax. Using data from the 2002 American National Election Studies (NES) Survey, the results show that most respondents cared about inequality – 75 per cent answered that the wealth gap had increased over the past two decades and 95 per cent considered it a bad thing – but instead supported Bush's tax cuts because they could not connect inequality to spending policy. Out of those with a decisive view on the tax cuts, supporters outnumbered opponents by more than double. However, 46 per cent of respondents conceded that they had not really thought about the decision. This crucially highlights public uncertainty, ignorance, and inattention to tax policy.

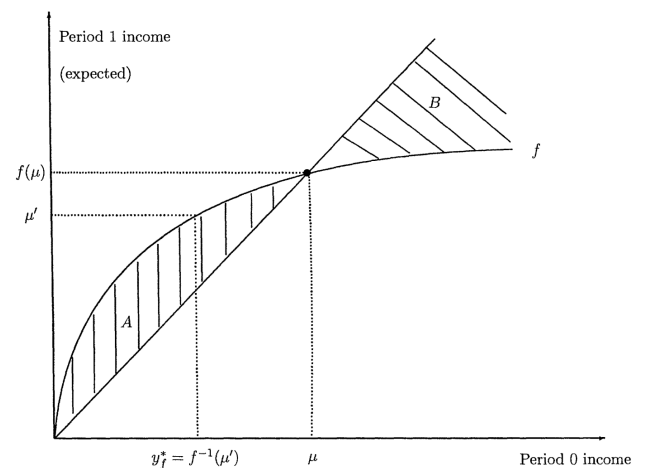
Bartels' analysis also revealed that opinions towards tax cuts were barely influenced by attitudes toward the tax burdens of the wealthy¹¹. Instead, they were mostly shaped by how people felt about their own tax burdens, despite the estate tax affecting only the wealthiest of taxpayers – less than two per cent. The study regressed attitudes towards the tax cuts against perceived tax burdens. While those who believed the rich paid too much federal income tax were more likely to support the tax cut, and vice-versa, Bartels found that people's attitudes about their own tax burdens had a far greater positive effect on their level of approval – respondents who felt they paid too much tax were significantly more likely to favour the tax cuts. The RMR model claims that voters with below-median income should favour higher taxes because

they benefit from redistributive gains. Yet, respondents to the NES survey mostly supported tax cuts even though they were likely to be net losers – net tax cuts only existed for the upper 20-25 per cent of the income distribution whereas taxes increased for the remaining population. Thus, he challenges the RMR assumption that poorer voters will necessarily favour increased taxes. Bartels illustrates how voters' lack of understanding of tax policy renders them incapable of associating inequality with expropriation and redistribution, thereby vastly diminishing the influence of the median voter as a spending determinant.

Prospect of Upward Mobility (POUM)

The prospect of upward mobility (POUM) hypothesis by Benabou and Ok² provides another explanation for why a poorer median voter may be against greater social spending. POUM refers to voters believing that they, their children, or even their grandchildren, will move up the income distribution in the future, surpassing the median voter, and hence suffer net losses from redistribution.³ Benabou and Ok deem such optimism to be rational based on one crucial feature – concavity of the mobility process. According to decreasing returns, the expected wealth transition function is intuitively concave – odds for one's future income rise when current income improves, but at a decreasing rate (see Figure 4).

Figure 4:



Source: Benabou and Ok (2001)

This concave transition function allows an individual to rationally be simultaneously poorer than average today and richer than average in regard to future expected income. The authors conclude that it remains ambiguous whether the POUM effect is large enough to significantly affect the political equilibrium². Nevertheless, it validates why many democracies where the majority of political power belongs to poorer voters do not engage in high taxation and spending.^{2,4,5}

10. Benabou, R., & Ok, E. A. (2001). Social mobility and the demand for redistribution: The POUM hypothesis. *The Quarterly Journal of Economics*, 116(2), 447–487. <https://doi.org/10.1162/0033553015144078>

11. Downs, A. (1957). *An economic theory of democracy*.

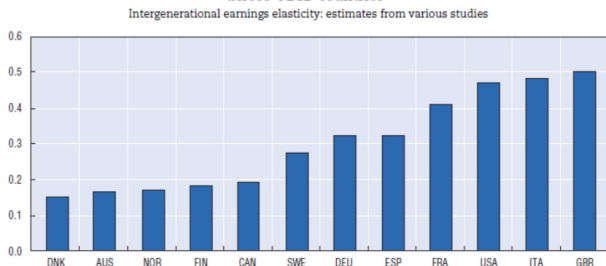


The case against Meltzer and Richard: The UK, US, and Europe

The aforementioned critiques help explain why highly unequal countries have little public demand for redistribution.^{2,45} For example, the United Kingdom (UK) has the highest intergenerational earnings elasticity among OECD countries¹² (see Figure 5) but does not even make the top 15 for public social spending as a percentage of GDP⁵. Furthermore, over the past 30 years, the Gini coefficient for the US has increased from 38 to 41.5,⁴ and it also has extremely high levels of intergenerational earnings elasticity.¹⁴ However, only 17 percent of Americans believe that the 'American Dream', respectively, is "out of reach" for their family with 60 and 43 per cent considering retiring comfortably and owning a home "essential" to this dream.¹³ This reflects the POUM hypothesis and why rising inequality may not be triggering a desire for higher taxes – most voters rationally believe that they will one day benefit from less redistribution.¹²

Figure 5:

Figure 5.1. The strength of the link between individual and parental earnings varies across OECD countries¹

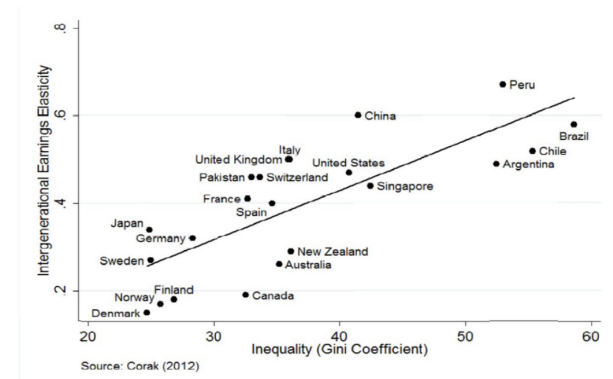


1. The height of each bar measures the extent to which sons' earnings levels reflect those of their fathers. The estimates are the best point estimate of the intergenerational earnings elasticity resulting from an extensive meta-analysis carried out by Corak (2006) and supplemented with additional countries from d'Addio (2007). The choice of empirical estimates in this meta-analysis is motivated by the fact that they are based on studies that are similar in their estimation technique, sample and variable definitions. The higher the value, the greater is the persistence of earnings across generations, thus the lower is the intergenerational earnings mobility.

Source: D'Addio (2007).

Additionally, the UK and US are positioned towards the top of the Great Gatsby Curve which models the positive relationship between inequality and intergenerational earnings elasticity¹⁴ (see Figure 6). It further reveals how inequality generates this persistence and lack of mobility and complements the Lindert model whereby the expected median voter increases with an increasingly spread-out income distribution.⁴⁷

Figure 6:



Source: Corak (2012)

On the other hand, Nordic countries, such as Denmark and Finland, have much lower intergenerational earnings elasticities¹² and Gini coefficients lower than 30.⁴ These nations rank top four for public social spending as a percentage of GDP among OECD countries⁵ which suggests a correlation between intergenerational mobility and social spending. Comparing this to the UK and US supports claims that a larger income distribution leads to a smaller government.⁷⁰

Conclusion

The relationship between inequality, the median voter, and social spending remains ambiguous. Despite what the RMR model presents about the median-mean differential as a measure of inequality, its assumptions of the median voter often do not reflect empirical evidence. The model ignores crucial influences that skew the income distribution and median voter, such as voter turnout. This article also examines why the median voter may be a poor determinant of government size, due to free-riding, lack of knowledge, and belief in better prospects which the RMR model fails to consider. These four critiques help justify why more unequal democracies, like the UK and US, have relatively low social spending, while the opposite is true for countries with greater social mobility. This does not mean that the RMR model is irrelevant, only that, relative to other factors, it is unclear whether any one influence dominates or plays a more significant role in determining which direction the median voter moves, or whether it moves at all, given an increasing income distribution. Ultimately, we can see why democratic representation is not quite as simple as giving more people the right to vote.

12. OECD Publishing. (2010). A family affair: Intergenerational social mobility across OECD countries. In Economic Policy Reforms: Going for Growth 2010 (pp. 183–200). Organization for Economic Cooperation & Development.

13. Pew Research Center. (2017). Political typology reveals deep fissures on the right and left. <https://www.pewresearch.org/politics/2017/10/24/political-typology-reveals-deep-fissures-on-the-right-and-left/>

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Women Entrepreneurs: A Significant Economic Opportunity for Australia

Deloitte.
Access Economics

Michelle Shi
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In mid-2022, Deloitte Access Economics was commissioned by SBE Australia – an accelerator for women-led businesses – to explore trends in women-founded businesses in Australia. The report considers the impact of supports over the past decade and measures the economic contribution of supported women-founded businesses to the Australian economy, while discussing the range of benefits that can arise with more female participation in entrepreneurship.

The importance of start-ups, and in particular leveraging our women founders, is more pronounced than ever as Australia faces some of the most challenging economic conditions in decades. Persistently high inflation and ongoing interest rate rises have dampened business confidence, while a global economic slowdown may soon start to weigh down Australia's economy.

Start-ups are a key component of a vibrant economy and a critical part of economic renewal and growth. Start-ups are innovative and can diffuse new ideas to new areas, and when they scale up, they disproportionately contribute to exports and economic activity compared with other businesses.¹ The start-up ecosystem acts as the bridge between the current economic growth path, and the creation of a new growth trajectory which will drive growth, income, and jobs into the future.

However, we are not fully leveraging our women entrepreneurs within the start-up ecosystem. Despite increases in the number of women founders in Australia, women continue to be underrepresented as new founders. In 2018, only 22% of all start-up founders were women entrepreneurs, according to the Start-up Muster.²

In order to address this, programs such as SBE, Heads over Heels, and Scale Investors – the three programs analysed in this research which provide accelerator programs, networking, and funding respectively to women-founded businesses – have supported at least 340 unique women-founded businesses. Our research finds that surveyed program participants report significant improved confidence (94% of surveyed participants), improved business skills (78%), and greater access to mentors and networks (86%). Program participants also have higher expected revenue growth, with revenue expectations of program participants 1.7 times higher than the growth of women non-participants, with 72% of program participants attributing their improved business growth trajectory to the support from these organisations.

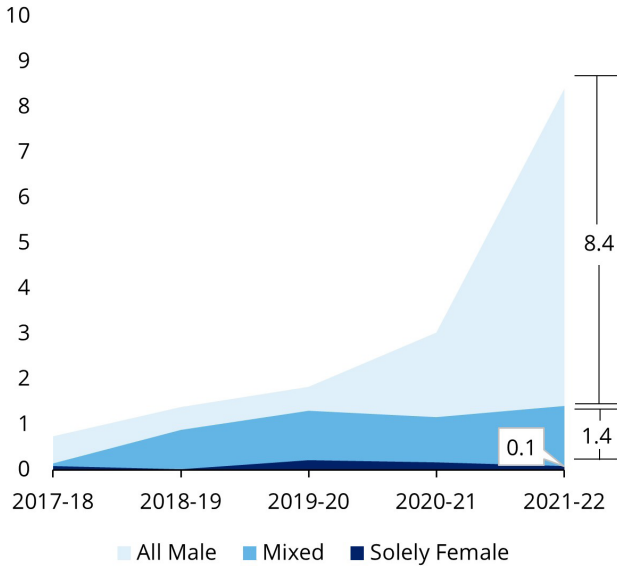
The Australian start-up ecosystem itself has also grown significantly. Total capital deployed to start-ups has increased tenfold in recent years, from A\$1 billion in FY18 to A\$10 billion in FY22. Despite this accelerated growth, funding for women-founded businesses – both solely female and mixed gendered founding teams – has remained persistently low.

In FY22, solely women-founded businesses received only 0.7% of total private sector funding to Australian start-ups. Mixed teams received 14.2% of funding – leaving 85.1% to solely male-founded businesses. So, while the amount of funding available in Australia has unequivocally grown, the share to women founders has stalled.

1. Department of Industry, Science and Resources, What drives high-growth (December 2018) <<https://www.industry.gov.au/data-and-publications/staff-research-papers/what-drives-high-growth-characteristics-of-australian-firms>>.

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Chart 1: Amount of funding secured by start-ups and young technology companies by founding team gender, private funding only (A\$ billions, FY18 to FY22)



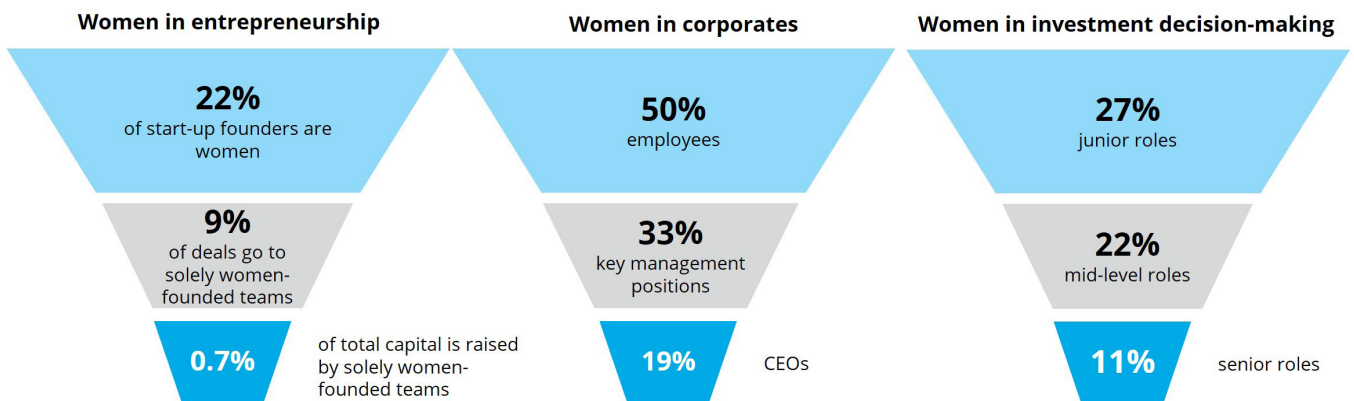
Source: Techboard Female Founder Dataset, FY2017-18 to FY2021-22. Note: Private funding refers to venture capital, angel groups, corporate venture and high-net-worths.

Two out of five women founders surveyed for our research listed access to capital as a barrier to growth. Research suggests this disparity is not attributed to potential investment returns or business fundamentals, but rather embedded gender bias. The practice of pattern-matching – where investors match how similar a prospective opportunity is to past ones – is a key driver.

Pattern matching sees investors grapple with traditions and embedded bias which see them bond more with people with similar attributes — such as gender, race, educational background, and work experience.³ As a result, newer entrants such as women founders or people of colour are perceived as ‘riskier’ investments.⁴ This bias may manifest in a number of ways, such as different pitching experiences (where women face more preventative questions while men field more promotion-oriented questions) or pigeonholing of women founders to female-centric industries and heightened bias against women founders in traditionally male-dominated industries.⁵

What we are seeing here aligns with gender gaps in the labour market more broadly, not just in entrepreneurship. The gender gap in entrepreneurship widens when moving from the number of founders to the value of funding. This pattern is mirrored in the poorer representation of women at increasing levels of seniority in large organisations and in investment decision-making. The fact this pattern exists, indicates that the issues occurring in entrepreneurship are not all unique to start-ups, and are reflective of broader gender inequity in the economy and society.

Chart 2: Representation of women in entrepreneurship, corporates, and investment decision-making



Source: Startup Muster, Techboard female funding data (2022), CEW Census 2021, AIC Women in Private Capital Report.

3. Women and Public Policy Program Harvard Kennedy School, Advancing gender equality in venture capital (October 2019) <https://wappp.hks.harvard.edu/files/wappp/files/advancing_gender_equality_in_vc_insights_for_entrepreneurs.pdf>.
 4. Jonah Sachs, 'If Investors Really Listened To Data, They'd Be Investing In Women', Fast Company (online, 07 May 2018) <<https://www.fastcompany.com/40568407/if-investors-really-listened-to-data-theyd-be-investing-in-women>>.
 5. Leah Hodgson, 'Europe's female founders feel the pinch from VC downturn', PitchBook (27 July 2022) <<https://pitchbook.com/news/articles/europe-female-founders-venture-capital-downturn>>; Michael Ewens and Richard R Townsend, 'Are early stage investors biased against women?' (2020) 135 Journal of Financial Economics 3.

6. Collin West and Gopinath Sundaramurthy, 'Data show that Gender-inclusive Founding Teams Have greater Success in Fundraising and Innovation' Kauffman Fellows (online, 3 October 2019) <https://www.kauffmanfellows.org/journal_posts/data-show-that-gender-inclusive-founding-teams-have-greater-success-in-fundraising-and-innovation>.
 7. Boston Consulting Group, Why women-owned startups are a better bet (6 June 2018) <<https://www.bcg.com/publications/2018/why-women-owned-startups-are-better-bet>>.

Women Entrepreneurs | Michelle Shi

But importantly, our research finds that there is a huge economic opportunity from better leveraging women business founders. **In FY21, the 341 active businesses supported by SBE, Heads Over Heels and Scale Investors alone facilitated A\$1 billion in economic activity to the Australian economy and supported nearly 4,900 full time equivalent (FTE) roles across the country.** This value is set to grow as more women participate in these programs and networks, and existing women-founded businesses scale-up.

There are also other benefits of increasing diversity within the start-up ecosystem. Since women have been historically underrepresented in entrepreneurship, the new approaches, markets and talent they bring can provide significant returns.⁶ Research indicates that for every dollar of funding, start-ups founded or co-founded by women generated 78 cents of revenue, while male-founded start-ups generated just 31 cents.⁷

Further, the Kauffman Fellow Research Centre found that US start-ups with a women founder employ 2.5 times more women than all-male founders, while companies with both a women founder and a female executive hire 6 times

more women on average.⁸ Gender diversity on governing boards and in senior leadership positions is also linked to lower gender pay gaps, which will further incentivise participation and improve economic disadvantages faced by women.⁹

There is growing awareness of the benefits — for the economy and also for individual businesses and investors — of improving the gender balance in entrepreneurship. Experience over the past decade in the start-up ecosystem show that change will not happen on its own. Every part of the ecosystem will need to play a part to shift the dial on funding to women founders. Co-ordinated action and commitment to change among government, universities, business support programs, investors, and industry and corporate programs is crucial to break down barriers and realise the economic opportunity that sits untapped with women entrepreneurs in Australia.

Read the full report – *Accelerating Women Founders: the untapped investment opportunity* – on the Deloitte website [here](#).

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Hand-drawn text and graphics around the man include: "See the possibilities", "FUTURE maker", "THRIVE", "Be my best self", "Empowered", "DRIVE MY EXPERIENCE", "Passion", and a compass rose.

8. Collin West and Gopinath Sundaramurthy, 'Women VCs invest in up to 2x more female founders' Kauffman Fellows (online, 25 March 2020) <https://www.kauffmanfellows.org/journal_posts/womenvc-invest-in-up-to-2x-more-female-founders>

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Does the Health Versus Wealth Trade-off Exist When Considering Lockdowns for the COVID-19 Crisis?

Hannah Shiau

When COVID-19 broke out, policymakers were forced to choose between different responses to the crisis. The main consideration around how stringent they wanted their lockdowns to be centred around the health versus wealth trade off. A stringent lockdown was seen to save lives but at the cost of the economy while a non-stringent lockdown was seen to save the economy but at the cost of lives. However, the trade-off between the economy and people's health is not as clear cut as it may seem. This is due to both factors mutually affecting one another.

People will engage in a voluntary social distancing

Less stringent lockdowns in developed countries will lead to more COVID-19 contractions as well as worse economic outcomes. This is because when the risk of infection is high, individuals will engage in voluntary social distancing regardless of whether there are government mandated lockdowns. This includes reducing the number of hours worked and purchasing less goods in hopes of avoiding exposure to the disease. The only way to resume normal economic activity is by addressing the root of the issue which is the pandemic itself. The longer the virus is allowed to spread, the more damage it will do to the economy through individuals being afraid to go to work and spend, and investors responding by being weary about investing when they are unsure how long the pandemic will last for.¹ Starting off with looking at historical data from previous pandemics, it was found by Correia, Luck and Verner that during the 1918 Flu Pandemic, US states with early and strict non-pharmaceutical interventions (NPI), such as social distancing, mask wearing, and lockdowns, had the same short-term negative economic outcomes as states with lenient NPI's, but better medium and long-term economic outcomes (1919 onwards).² At the same time, states with strict NPI's were able to slow the rate of disease transmission and reduce peak mortality.³ The same conclusions were drawn by the IMF World Economic Outlook 2020 for the COVID-19 pandemic when they

analysed high frequency data provided by private firms. Using mobility data from 128 countries provided by Google, which reports the attendance rate at various locations relative to precrisis levels, it was found that mobility has been tightly correlated with the spread of COVID-19 even after controlling for government lockdowns. When infections are relatively high, the impacts of lockdowns on mobility were relatively low while the impact on voluntary social distancing were relatively high as people felt uncomfortable with resuming mobility when they still perceived a considerable risk of contracting or spreading the virus.

A doubling of daily cases directly leads to a contraction in mobility by about 2% from the effects of voluntary distancing.⁴ Using job postings from Indeed for 22 countries, it was found that contact intensive jobs declined before stay-at-home orders were implemented. Furthermore, the removal of stay-at-home orders coincided with only a marginal increase in job postings, even in the less contact intensive manufacturing sector.⁵ Establishing a more direct link between economic damage and Covid deaths, Alvelda, Ferguson and Mallery plotted the number of coronavirus deaths versus the total economic loss (loss of GDP, the cost of economic stimulus programs drawn from national budgets, and assumed debt) and found that the worse the pandemic was allowed to get, the more the costs of dealing with it pile up, which directly impacted the overall costs to the economy. Countries that had a higher number of deaths experienced greater economic losses as shown in Table 1. For example, the US allowed the virus to spread which led to deepening damage quarter after quarter as the virus spread. Those countries became stuck in a feedback loop where they had to invest more and more stimulus as their humanitarian disaster grew and their economies declined.⁶ On the other hand, countries like China, Taiwan, Australia, and Singapore which invested on swift suppression had eliminated the virus and are seeing their economies grow without additional stimulus in a positive feedback loop manner.⁶

1. Beach, B Clay, K Saavedra, MH 2020, 'The 1918 Influenza Pandemic and its Lessons for Covid-19', National Bureau of Economic Research, https://www.nber.org/system/files/working_papers/w27673/w27673.pdf

2. Ibid.

3. Ibid.

4. International Monetary Fund 2020, World Economic Outlook: A Long and Difficult Ascent, viewed 21 September 2021, <https://www.imf.org/en/Publications/WEO/Issues/2020/09/30/world-economic-outlook-october-2020>

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COVID-19 Lives Versus Livelihoods

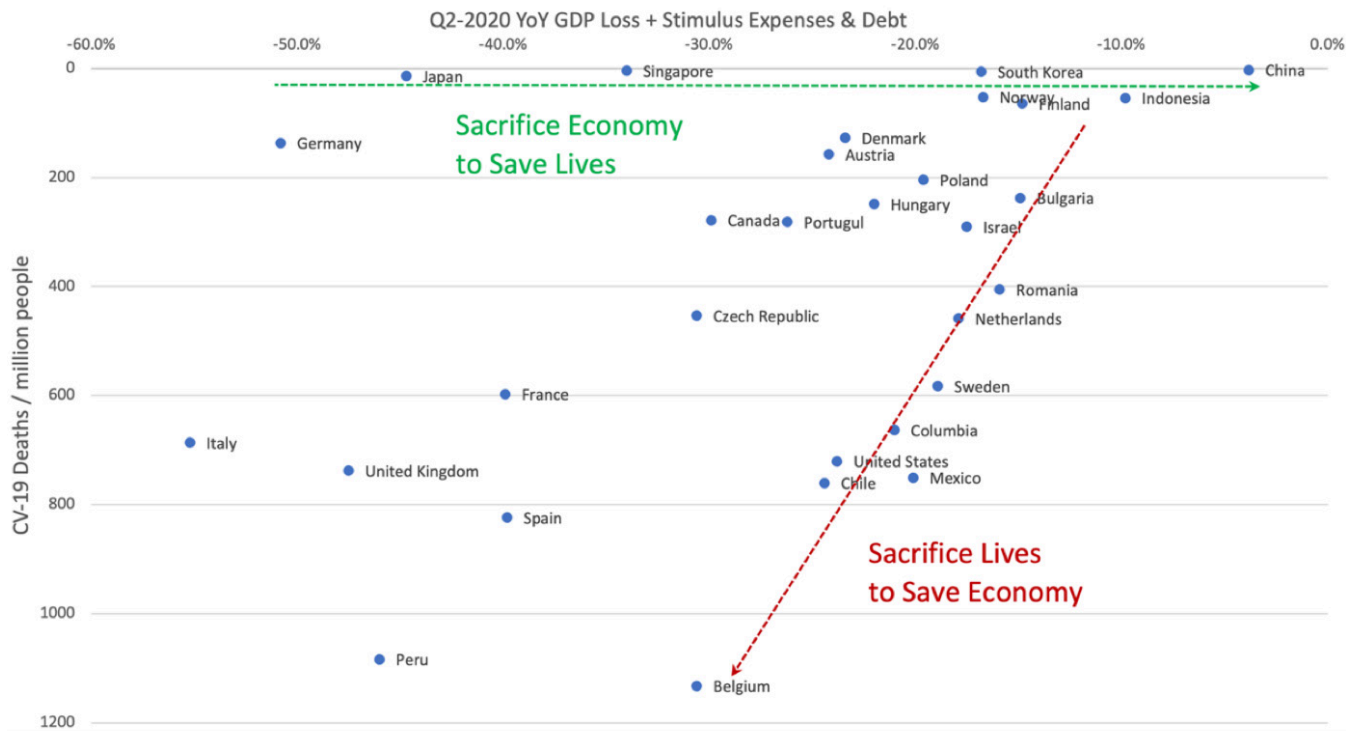
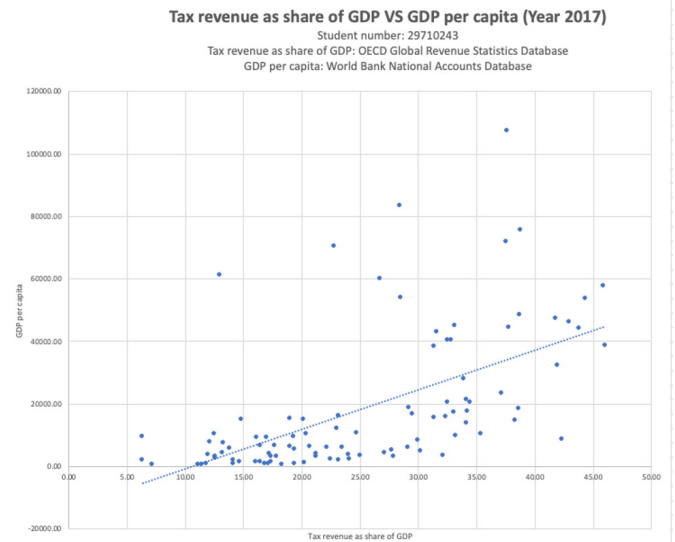


Table 1: Economic Loss versus the Loss of Lives to COVID-19. This chart draws on IMF economic and stimulus measures against Johns Hopkins COVID-19 data to plot each country's coronavirus deaths against the total economic loss each suffered (including both the decline in GDP and total spending on economic stimulus programs along with debts and liabilities they took on) as of the end of Q2 2020. The economic losses are shown on the horizontal X-Axis; countries doing better are located towards the right with less loss. The Y-Axis plots the number of deaths per million people, a normalised measure of how bad the pandemic is that controls for different country populations. Countries with fewer deaths, who better protected their citizenry are at the top of their graph.

People will starve if there was a lockdown which effects their health

Developing nations has low levels of voluntary social distancing⁷ which suggests that they can potentially trade off health for economic activity. However, looking further into the reason for the low levels of voluntary social distancing, we found that a lack of economic activity means death from starvation as developing countries do not have the fiscal capacity nor the household savings to sustain a lockdown unlike wealthy developed countries.⁸ Furthermore, even if the fiscal space is there, there is still a lack of state capacity to coordinate a lockdown and a lack of welfare distributing infrastructure to distribute welfare payments. Thus, when economists express reluctance against stringent lockdowns for developing countries, they are not considering the trade-off between health and economic activity, but they are considering the trade-off between deaths via COVID versus deaths via starvation.⁹ For example, developing nations has issues raising tax revenue to provide public goods and make transfers which is demonstrated by the fact that there is a clear positive linear relationship between GDP per capita and tax revenue as share of GDP as demonstrated in Table 2.¹⁰ In India, no more than 3% of individuals pay taxes.¹¹ Furthermore, the poorer the nation, the smaller the amounts of savings which further reduces the ability to survive a lockdown. For example, in India it was found that the median

Table 2:



7. International Monetary Fund 2020, World Economic Outlook: A Long and Difficult Ascent, viewed 21 September 2021, <https://www.imf.org/en/Publications/WEO/Issues/2020/09/30/world-economic-outlook-october-2020>

8. Alon, T Kim, M Lagakos, D VanVuren, M 2020, 'How Should Policy Responses to the Covid-19 Pandemic Differ in the Developing World?', NBER Working Paper Series, https://www.nber.org/system/files/working_papers/w27273/w27273.pdf

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10. Alon, T Kim, M Lagakos, D VanVuren, M 2020, 'How Should Policy Responses to the Covid-19 Pandemic Differ in the Developing World?', NBER Working Paper Series, https://www.nber.org/system/files/working_papers/w27273/w27273.pdf

11. Ray, D Subramania, S Vandewalle, L 2020, 'India's Lockdown', Centre for Economic Policy Research, No.102, https://cepr.org/sites/default/files/policy_insights/PolicyInsight102.pdf

‘...developing countries do not have the fiscal capacity and household savings to sustain a lockdown unlike wealthy developed countries’

household spends INR 345 per week on food, but the median household has liquid savings of only INR 881.¹² Even when there are redistributive measures, poor planning, corruption, and a lack of training had led to welfare funds not being directed towards the vulnerable and lockdown measures jeopardising food security. For example, in India, essential commodities could not be transported through the supply chain in the beginning of the lockdown as the police did not know how to interpret the word ‘essential’ in the Essential Commodities Act.¹³ In India, farms were left without migrant labour force in peak harvest season and travel restrictions prevented traders from reaching rural areas leaving crops to rot which both effected farmers income and the people’s food security.¹⁴ The Indian government announced a \$22.5 billion stimulus to support families and small businesses, however, due to poor planning and corruption millions were unable to access the assistance.¹⁵ In Brazil, the Emergency Basic Income programme had issues getting transfers to vulnerable individuals because it faced long delays responding to requests for aid, refused to provide aid without valid justification, and the applicants had to have a mobile phone, internet connection, and an email address to qualify for assistance.¹⁶

Lockdowns negatively affects both future income and future health outcomes

The effects of lockdowns on the economy not only had immediate impacts on health and mortality though its effects on immediate incomes, but it can also have a negative effect on future health and mortality through its effects on future incomes. Using human capital development as an example, the greater the setbacks in educational outcomes due to the lockdown, the greater the chances that people will experience poverty and poverty-related diseases in the future. Before the COVID-19 outbreak, 53% of children in low and middle-income countries were living in Learning Poverty where they were unable to read and understand simple text by age 10 or older.¹⁷ It was predicted that Learning Poverty can drop to 27% in 2030 if countries tackle the issue ambitiously.¹⁸ However, due to the pandemic, this target will be delayed by two decades from factors such as 7 million students pulling out of school due to the income shock of the recession alone and additional students not returning to school after the interruption as the opportunity cost of remaining

in school, in the form of lost income, had increased when the child had aged.¹⁹ The link between education and poverty reduction has been widely documented. A recent journal found that education is not only the key to long term economic success and income growth through improving people’s technical skills, encouraging entrepreneurship, and encouraging technological advancements, but it also increases income distribution; both of which helps to reduce the number of individuals living in poverty.²⁰ A large proportion of illnesses in low-income countries are caused by poverty. Those illnesses stem from poor nutrition, indoor air pollution, lack of access to proper sanitation, and health education.²¹ For example, because of vitamin A deficiency, 500,000 children become blind each year and because of diarrhoeal caused by poor sanitation, 1.8 million lives are claimed each year even when both issues can be addressed using extremely cheap solutions.²² This is not only prevalent in developing countries, but it is also prevalent in developed countries. Children from high income households has computers, reliable internet connection, stable housing, room temperature regulation, and a quiet place to study while those in lower income households do not. This can lead to a decrease in educational outcomes for those disadvantaged children, a reduction in their lifetime incomes, and an increase in the chances that they will be a low-income earner in the future.²³ Having money can improve health through three main channels; it can buy health promoting goods and services, reduce stress from financial difficulties and stigmatisation, and reduce unhealthy behaviours that can come from the stress such as smoking and drinking.²⁴

In conclusion, health and wealth are closely intertwined. For the economy to grow and function at its pre-pandemic level, it is essential that the health risks to individuals are minimised. This is because the root cause of poor economic outcomes during pandemics are not due to lockdowns but are due to the health risks of the pandemic itself effecting people’s behaviour. The worse the health outcomes, the worse the economic ones. However, it also must be considered that incomes effects people’s health making the trade-off not between health and wealth but health and health. A reduction in economic activity may result in deaths via starvation in the short-run as well as a decrease in health outcomes in the long-run. Therefore, the worse the economic outcomes, the worse the health outcomes.

12. Ray, D Subramania, S Vandewalle, L 2020, ‘India’s Lockdown’, Centre for Economic Policy Research, No.102, https://cepr.org/sites/default/files/policy_insights/PolicyInsight102.pdf

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17. Azevedo, JP Hasan, A Goldemberg, D Iqbal, SA Geven, K 2020, ‘Simulating the Potential Impacts of COVID-19 School Closures on Schooling and Learning Outcomes’, World Bank Policy Research Working Paper, <https://documents1.worldbank.org/curated/en/329961592483383689/pdf/Simulating-the-Potential-Impacts-of-COVID-19-School-Closures-on-Schooling-and-Learning-Outcomes-A-Set-of-Global-Estimates.pdf>

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Why You Are Not Rational

(all the time)

Joel Duggan

One of the most foundational assumptions of the field of economics historically has been that of human rationality. This assumption supposes that in decision-making processes, actors on average will choose the option that aligns with their preferences. Sen (1991) classifies the neoclassical conception of rationality as having two constituent parts: the maximisation of utility and the consistency of choice. It seems intuitively true – of course we choose the things that we like! However, there are likely situations you can think of where you might go along with something you are not actually committed to. Take procrastination, for instance. When you procrastinate, there are two options before you: study or do something else. In a lot of procrastination situations, you actually want to do the work; that is your preference for how you want to spend your time. Yet, you'll still find yourself inevitably drawn into your phone or YouTube or whatever other vice of your choosing. It's wholly irrational, but we still do it. And so are we really all that rational?

This concept is known as 'bounded rationality' and it suggests that the rationality the classical economists supposed we generally adhere to is in fact contingent on our circumstances. We are not invariably rational, or even necessarily rational on average. We are rational when the situation permits it and irrational when there is some factor disallowing it. In the instance of the procrastination example, the irrationality comes from our inability to overcome the short-term benefits of the dopamine rush in comparison to the long-term benefits of getting our work done. In essence, we are not "optimisers" but rather "satisficers" (Simon 1955) – we choose the things that are most satisfactory rather than optimal. Simon (1955) distinguishes satisficing as generating a suboptimal outcome in relation to optimising, as we can see in the example of the procrastinating student who is left in the suboptimal situation of not completing their work.

If rationality is the bedrock of classical economics, then bounded rationality is the bedrock of behavioural economics. Behavioural economics arose as a critique of the orthodoxies that lay at the heart of the economics discipline, questioning the assumptions that until now had remained largely unquestioned. By integrating elements of behavioural psychology into economics, it became possible to trouble these foundational concepts that economics had taken for

granted for so long, such as rationality. Thus, behavioural economics seeks to explain exactly how and why we are not rational. The answer tends to be the biases that we all hold as humans. The heuristics we developed early on in our evolution might have helped us to detect patterns that allowed us to avoid eating poisonous berries, but nowadays they can undermine our ability to make informed and reasoned decisions. Take the narrative fallacy, which asserts that because we are inundated with information, we are compelled to establish cause-and-effect relationships between various pieces of this information in a manner that is ultimately arbitrary. A good example of this would be the CV, where the expectation is that it will establish a chain of events which presents the employee in a positive light through explaining how they were able to succeed in various jobs because of a solid work ethic, a strong sense of responsibility, a good education, et cetera. Yet, the CV is also just the narrative fallacy manifested: we opt to include the things that we know will look good, that will make for a narrative appealing to potential employers and thereby exploit the narrative fallacy. The causal relationships we construct in the CV can be arbitrary or even false, but if we string them together in a certain way then regardless we can present ourselves as employable. Furthermore, there is also an element of confirmation bias in that employers will seek to hire people based on beliefs they have about what makes a good employee which might not necessarily be true; for instance, checking to see if they went to a prestigious university to confirm whether or not they have employable skills.

A rich field of study within behavioural economics is 'nudge theory', which proposes adjusting our 'choice architecture' to nudge our decision-making into particular directions. One of the most popular and amusing examples of this comes from the men's bathrooms of Amsterdam's Schiphol Airport: the image of a housefly sits in the centre of the urinals and has been successful in improving the aim of toilet users and thereby reducing mess. What this reveals is how easy it is to shape what is 'rational' within any given situation. Certainly, it is rational for a urinal user in Schiphol Airport to target their aim appropriately because there is satisfaction derived from hitting the housefly. However, it is a satisfaction that was set up precisely for the user to feel, precisely to make it rational.

The criticisms that behavioural economics has levied at rationality have not gone unchallenged. Maialeh (2019) points out that what behavioural economists may label as biases are still valid in terms of producing subjective utility for the agent. The procrastinating student, for instance, has merely decided subconsciously that the benefits of slacking off outweigh those of doing the work. This raises some interesting questions as to what constitutes 'true' utility in our decision-making: what we want to do or what we actually do. To me, this argument begs the question by assuming that everything we do is rational by virtue of us doing it. It takes as the starting point of its reasoning the notion that we are rational, we are homo economicus, and interprets all decision-making through this lens. It is true that you could certainly interpret all decision-making as ultimately rational, however what is the purpose of doing so? There is no way to refute a principle that simply subsumes all available paths into itself.

As such, there remains value in questioning the neoclassical assumption of rationality. Bounded rationality raises important objections to taking such notions for granted, revealing how and why it is that humans are far from consistently rational creatures, as posited by the theory of homo economicus.



No Country for Young People?

Daniel Bowers

After more than 120 years, the Quambatook Football and Netball Club have played their final matches. 300 kilometres north-west of Melbourne, with a median age of 59 — 21 years older than the national average — the club does not have enough young people to maintain a team!¹ The local school, which once boasted 160 students, closed in 2017 with a total of six students and zero staff.²

Quambatook's lack of youth is indicative of a larger, nation-wide crisis facing small towns and rural areas in Australia. Whilst leaving has positive outcomes for young people, it exacerbates the problem of an ageing population in regional communities.³

Between 2011 and 2016, 180,000 regional Australians aged between 20 and 35 moved to capital cities.⁴ Of those, only 1 in 3 have returned in the seven years since. Despite the recent exodus of city dwellers, the structural factors that have made cities attractive are ever-present.⁵

One major factor is labour market conditions such as unemployment and wage levels. Whilst the backbones of Australia's rural economy — agriculture and mining — have become more productive thanks to improved technology, this has also caused fewer front-line people to be employed.^{6,7} This has a knock-on effect as communities lose workers who would have shopped in town; schools lose the workers' children; and, of course, the sports teams lose their players.

'Between 2011 and 2016, 180,000 regional Australians aged between 20 and 35 moved to capital cities.'

Although the unemployment rate in regional Australia is currently below the target of 4%, this unemployment rate represents a "double-edged" sword.⁸ This is due to the increase in vacancies and shallow labour pool, caused largely by the reduction in overseas workers. As a result, there is currently an insufficient number of workers to match the number of jobs available. Professional roles are in the highest demand, making up 24% of vacancies according to the Regional Australia Institute.⁹

A major contributor to the large number of job vacancies in professional roles is the difference in university degree attainment between people in the city and country. Regional residents are half as likely as a city person to have attained a university degree by the time they are 35.¹⁰

The lack of educational opportunities is also contributing to young people leaving regional areas. Of those that do attain a university degree, the 'brain drain' is a key issue where regional students are less likely to return to the

1. <https://www.abc.net.au/news/2022-08-19/death-of-a-country-footy-and-netball-club-in-quambatook/101335158>

2. <https://www.abc.net.au/news/2017-03-01/rural-school-with-no-staff-nears-closure-despite-facebook/8315472>

3. <https://www.yacvic.org.au/assets/Documents/Staying-in-touch-Young-people-maintaining-relationships-with-rural-and-regional-communities-VRY5-March-2014.pdf>

4. <https://www.abc.net.au/news/2022-05-29/young-people-regional-australia-stay-in-home-town/100907624>

5. <https://www.smh.com.au/politics/federal/50-not-out-surge-in-towns-where-50-is-the-new-40-20210903-p58ogq.html>

6. <https://www.farmonline.com.au/story/6882843/mining-and-agriculture-are-our-economic-backbone-and-dont-forget-it/>

7. <https://blog.id.com.au/2020/population/which-parts-of-australia-are-experiencing-population-decline/>

8. <https://www.theguardian.com/australia-news/2022/feb/14/unemployment-drops-in-regional-australia-but-ballooning-vacancies-forecast-bigger-issues>

9. <https://regionalaustralia.org.au/Web/Web/Toolkits-Indexes/Regional-Jobs-Update/Updates/2022/Regional-job-vacancies-set-new-record-at-over-84000.aspx>

10. <https://www.themandarin.com.au/144887-barriers-to-education-in-rural-and-remote-areas/>

11. <https://www.latrobe.edu.au/news/articles/2017/release/regional-brain-drain-worsens>

12. <https://www.ncsehe.edu.au/country-university-covid19/>



regions if they have completed their degree in a city; whereas, if they are able to study regionally, they are more likely to stay and practice their professions in these areas.¹¹

A proposed solution is 'stepped down' alternatives to campuses in the form of regional study hubs to provide 'some level of university access in smaller towns but within a reasonably commutable distance, so people don't have to move away from home,' according to Robyn Eversole from the Centre for Social Impact at the Swinburne University of Technology.¹²

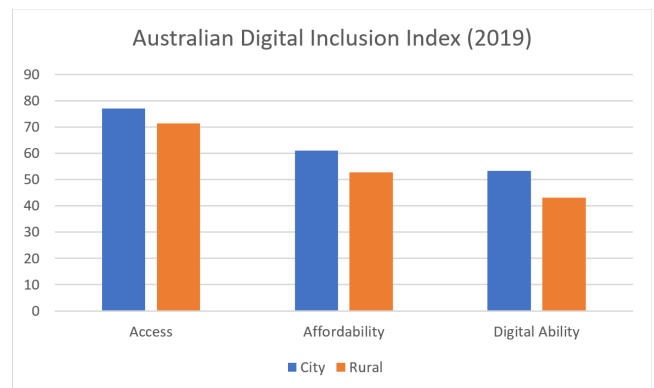
However, issues in the primary and high school system must also be addressed as young people are already more likely to have reduced educational outcomes than those living in cities before they reach university age. A 2015 study measuring young people's progress on four key educational milestones from the early years right through to young adulthood found that the proportion of very remote students who meet the requirements at each milestone is up to 48 percentage points lower than for the Australian population as a whole.¹³

There is also a large disparity in the access to digital infrastructure and technology between cities and regional areas. Access to affordable and reliable internet connectivity has never been more important given the rapid uptake in online learning, working, and socialising since Covid-19.

The Australian Digital Inclusion Index (ADII) from 2019 highlights the difficulties faced by rural Australians compared to city dwellers across three metrics: access, affordability, and digital ability.¹⁴

People living in capital cities achieve superior results in each category. However, since the 2015-2019 period, the Capital City-Country gap narrowed from 9.6 points overall to 8.1 points. Despite this, in 2019, just 80.7% of people in outer-

regional areas had internet access at home compared to 87.9% in capital cities, largely due to the higher costs and poor access.¹⁵



Infrastructure in low-population density areas is more expensive to provide for per unit of consumption, however it is these communities that are more reliant on it for their productivity and wellbeing.¹⁵ Infrastructure Australia Chief Executive Romilly Madew has stated that 'digital inclusion is lowest among the communities that need it most'¹⁵ This is because digital connectivity creates opportunities for regional Australians and reduces costs caused by geographic and other barriers.¹⁶

Australian National University demographer Liz Allen believes that 'people who moved to regional areas over the last two years are about to face a rude shock as opportunities for them and potentially their children become constrained and in turn limit future possibilities.'¹⁷

If the current issues persist, young people will continue to leave their regional homes to the detriment of their communities; for better or for worse.

13. <https://www.actu.org.au/media/1385714/d34-actu-submission-regional-jobs-of-the-future.pdf>

14. https://www.csi.edu.au/media/2019_ADII_Report.pdf

15. <https://www.ceda.com.au/NewsAndResources/News/Economy/Romilly-Madew-looks-at-the-challenges-and-opportun>

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Australia Needs Private Capital to Reach Net Zero — Blue Carbon Offers a Unique Opportunity

strategy&

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The views in this article are solely those of the author.

Australia is a coastal nation — more than 80% of us live along coastal zones and we rely on our oceans to sustain livelihoods through tourism, trade, and fisheries.¹ With rising sea levels, unprecedented weather events, and ecosystem collapse, climate change poses a material and immediate risk to our way of life. The fact that Australia lags other OECD nations in climate funding will only compound these impacts.²

A dearth of policy and an abundance of rhetoric has led to low levels of public investment into meaningful climate action in Australia. Not only is there a shortfall of funding for climate mitigation activities — those that reduce the amount of carbon we emit into the atmosphere — but also in restoring and protecting our ‘natural capital’ like our vast ocean estate, from the impacts of climate change. Research shows Australia’s unique marine ecosystems host incredibly effective natural carbon storage mechanisms, known as ‘blue carbon’.³ As climate change diminishes the capacity of these ocean ecosystems, so too does our overall ability to mitigate its effects. Over time, pressures on our environment have compounded to the extent that government funding alone will not be sufficient for Australia to reach its current net zero targets.⁴

Carbon markets, including carbon credit schemes, are a way to increase private sector investment into climate action and direct it toward both emissions

reduction and ecological restoration activities.⁵ In Australia, our blue carbon potential is an opportunity for us to take the lead in carbon market solutions.

The challenge

The priority pathway towards net zero emissions is through the energy transition from fossil fuels to renewables, since the energy sector is the largest emitter of global greenhouse gas emissions.⁶ However, Australia has been slow to develop actionable climate policy and sustained investment into emissions reductions, lagging behind other developed nations.⁷ In 2021, the Australian government announced Australia’s Long Term Carbon Emissions Plan, a non-binding approach to transitioning the economy to net zero emissions by 2050.⁸ The plan prioritised investments into the development of new technologies, many of which are still conceptual, and de-prioritised existing methods like wind and solar.⁹ 2021-22 Budget Papers also showed a projected decline in climate funding over the next four years and did not include any major consumer or commercial incentives to accelerate uptake of climate positive activities.¹⁰ Australia’s fossil fuel subsidies meanwhile increased by A\$1.3 billion year on year in 2020-21 to a total of A\$11.6 billion.¹¹ In 2022, a newly elected government passed net zero targets into law, signaling a shift in momentum toward cohesive climate change policy in Australia.¹²

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3. “Coastal Blue Carbon Ecosystems”, in Department of Climate Change, Energy, the Environment and Water, 2022, <<https://www.dccceew.gov.au/climate-change/policy/ocean-sustainability/coastal-blue-carbon-ecosystems#:~:text=Blue%20carbon%20ecosystems%20are%20recognised,cent%20of%20global%20carbon%20stock>> [accessed 4 October 2022].

4. Overview: Resources in State Of The Environment, Commonwealth of Australia, 2021, <<https://soe.dccceew.gov.au/overview/management/resources>> [accessed 12 October 2022].

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6. “Global Emissions - Center for Climate and Energy Solutions”, Center for Climate and Energy Solutions, 2022, <<https://www.c2es.org/content/international-emissions/>> [accessed 4 October 2022].

7. “Australia ‘lagging at the back of the pack’ of OECD countries on climate action, analysis finds”, in the Guardian, 2022, <<https://www.theguardian.com/environment/2021/aug/09/australia-lagging-at-the-back-of-the-pack-of-oecd-countries-on-climate-action-analysis-finds>> [accessed 3 October 2022].

8. “Australia’s Long Term Emissions Reduction Plan 2022”, Department of Climate Change, Energy, and the Environment, Commonwealth of Australia, 2022 <<https://www.dccceew.gov.au/climate-change/publications/australias-long-term-emissions-reduction-plan>> [accessed 8 October 2022].

9. Climate tech experts reject Morrison’s ‘colossal piece of obfuscation’, in The Australian Financial Review, 2021, <<https://www.afr.com/technology/climate-tech-experts-call-out-morrison-s-bullsh-t-net-zero-plan-20211029-p5948e>> [accessed 10 October 2022].

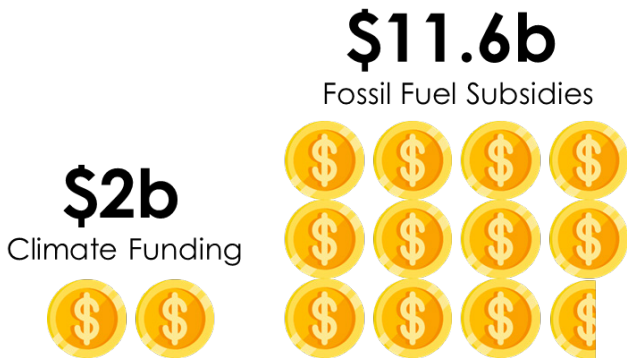
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12. “What the Climate Bill is, and What it’s Not”, The Climate Council, 2022, <<https://www.climatecouncil.org.au/what-the-climate-bill-is-and-what-its-not/>> [accessed 7 October].

Australia's Blue Carbon Opportunity | **Gayatri Kotnala**

Approximate Funding for Climate Change v Fossil Fuel Subsidies 2020-21



Sources: Australian Government Budget Papers; The Australia Institute, The Conversation

Another underinvested and often overlooked pathway to net zero is through the restoration and adaptation of our 'natural capital', like our oceans. Investing into our oceans has the dual benefit of restoring the environment, while accelerating emissions reduction. Coastal marine ecosystems are natural stores of carbon, and Australia has an ocean territory twice the size of its landmass.¹³ Research shows that oceans and coastal ecosystems like tidal marshes, seagrasses, and mangroves are four times more effective and 30-50 times faster at cleaning and capturing carbon out of the atmosphere, compared to terrestrial ecosystems like forests. Together, this potential is referred to as 'blue carbon':

"Australia is considered a global 'blue carbon hotspot'. Australia harbors about 12 per cent of the World's blue carbon ecosystems, which hold about 7-12 per cent of global carbon stock. The seagrass meadows surrounding the coral reefs in the Great Barrier Reef alone host an estimated 11 per cent of the world's seagrass blue carbon."¹⁴

On the flip side, when these ecosystems degrade or are destroyed, they release large quantities of stored carbon into the atmosphere.¹⁵ For example, the Great Barrier Reef supports approximately 150 inshore mangrove islands.¹⁶ As the Reef faces climate change induced declines in biodiversity, its ability to support surrounding mangroves also diminishes.¹⁷

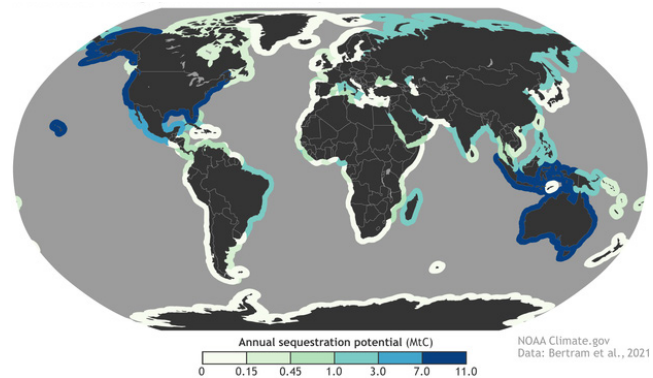
Despite the National Climate Resilience and Adaptation Strategy 2021-2025,¹⁸ government funding for ecological restoration and research will not be sufficient for the scale of action required. The State of the Environment Report (2021), the most comprehensive assessment of the Australian environment to

date, estimates restoration efforts alone will require A\$10 billion annually.¹⁹ At the time of writing, funding allocation is approximately A\$300 million per year over 14 years (2014-2029) for just the Great Barrier Reef, with smaller funding packages for the rest of Australia's oceans.²⁰ Stalemate on environmental policy has led to increasing underinvestment in climate action.²¹ The level of climate action now required in Australia for the nation to reach its net zero targets cannot be sustained through government funding alone, especially as we enter a constrained fiscal environment.²² We need private sector co-investment into long term and large-scale climate adaptation and restoration projects. Market-based approaches such as credits and offsets need to be developed as viable solutions to increase this private sector investment.

The opportunity

A well-regulated carbon market that harnesses Australia's blue carbon potential is an opportunity to increase our investment into climate action.

Global Blue Carbon Storage Potential by Country



Map by NOAA climate.gov, based on data from 'The Blue Carbon Wealth of Nations' by Betram et al., 2021

Carbon markets can help shift the burden of funding solutions from taxpayers back to emissions producers, proportionate to the excess emissions they produce. There are two types of carbon markets: compliance and voluntary, depending on the driver of demand for the market. In compliance markets governments set a legislated reduction target for big polluters and offer schemes to purchase emissions allowances or credits into offset projects. In Australia, this is done through the Safeguard Mechanism which mandates polluters buy credits for excess emissions above a certain baseline. In voluntary markets, businesses voluntarily pay for offset credits to fulfil social or sustainability goals. Australia's Emissions Reduction Fund facilitates investment into emissions reduction activities by offering credits for emissions producers and funding for projects that reduce carbon.

13. "Oceans and Seas | Geoscience Australia", Geoscience Australia, 2022, <https://www.ga.gov.au/scientific-topics/national-location-information/dimensions/oceans-and-seas> [accessed 10 October 2022].

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17. "Great Barrier Reef's third mass bleaching in five years the most widespread yet", in The Guardian, 2022, <https://www.theguardian.com/environment/2020/apr/07/great-barrier-reefs-third-mass-bleaching-in-five-years-the-most-widespread-ever> [accessed 3 October 2022].

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21. "The Carbon Tax in Australia", Centre for Public Impact (CPI), 2022, <https://www.centreforpublicimpact.org/case-study/carbon-tax-australia> [accessed 4 October 2022].

22. "Private money is 'critical' to saving Australia's environment", in Australian Financial Review, 2022, <https://www.afr.com/policy/energy-and-climate/private-conservation-investment-critical-to-saving-australia-s-environment-20220718-p5b2g> [accessed 10 October 2022].

Carefully developed, regulated, and supplemented by social policy, Australia's carbon market can capitalise on the rising demand for carbon offsets. Projections show the demand from the Australian private sector to offset emissions is likely to double the price of carbon in the next 15 years.²³ This will create greater revenue from credit sales for government to reinvest into new projects. On the supply side, Australia's programs in agricultural, water and environmental protection offer companies a way to meet their sustainability goals while generating a return on low-risk investment.²⁴ Blue carbon offers yet another opportunity for Australia to differentiate itself on international carbon markets.

The world's first major blue carbon verification methodology was released in late 2020, and currently only two companies Verra and Plan Vivo sell blue carbon credits on the voluntary market. In addition, existing projects are small scale in coastal African nations or Central America.²⁵ Given the size of its ocean territory and blue carbon store, Australia can scale supply and translate it to a market product more easily. The South Australian Government in partnership with the federal Government is already exploring ways in which to accredit blue carbon projects under the Emissions Reduction Fund.²⁶ In 2022, New South Wales also announced a landmark five-year plan to invest into blue carbon research and verification.²⁷ Together with the passing of climate change legislation and a rethinking of our market approach, a cohesive Australian blue carbon credit methodology could accelerate emissions reduction.

It should be said that carbon is still considered an 'emerging' asset class,²⁸ and a sophisticated and scaled carbon market is a relatively new concept, especially in Australia. Carbon markets generally face challenges in ensuring their offsets and credits are achieving the results they claim to, aren't double counting projects, and are providing ongoing monitoring and quality assurance.²⁹ In Australia, both the Safeguard Mechanism and Emissions Reduction Fund

are under review to improve their effectiveness and verification processes.³⁰ Australia could look to more mature markets in the EU as a blueprint to develop a robust and scalable system. These markets have shown to be efficient and equitable in directing private capital to areas where it is most needed.

Sweden, for example, is on track to generate 100% of its electricity from renewables in 2040.³¹ The Swedish government has achieved this by developing the Electricity Certificate System. The system requires energy retailers to buy a certain amount of renewable electricity from producers, and in turn offers producers certification so that they can sell renewables at a premium.³² In effect the Swedish government increases the appeal of renewables by increasing their profitability, and lowers their risk by offering certification. Similarly, Scotland produces 97% of its electricity through renewables, and is now offering certified offset opportunities. The Scottish government offers businesses the chance to invest directly into restoration projects like planting trees, that count towards 'offsetting' their carbon emissions.^{33 34} In both the Scottish and Swedish case, governments have focused on policy and legal frameworks that provide a clear roadmap for investment, with the appropriate market incentives to encourage uptake.

In conclusion

Australia has not done enough in the fight against climate change despite being vulnerable to its impact as a coastal and drought-prone nation. Climate action needs private dollars to boost innovation, energy transition, and ecological restoration. Yes, carbon markets face teething troubles, but they are a necessary part of government approaches to climate change. Benefitting from the experience of other mature carbon markets, Australia is well positioned to progress strategies and policies that incentivise private sector investment into climate action. Australia's significant 'blue carbon' repository is our unique value proposition to develop market solutions at a global scale.

“A well-regulated carbon market that harnesses Australia’s blue carbon potential is an opportunity to increase our investment into climate action.”

23. Threatened species and environmental restoration funding, in State of the Environment, Commonwealth of Australia, 2021, <<https://soe.dcceew.gov.au/overview/management/resources#the-australian-restoration-economy>> [accessed 12 October 2022].

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30. "Safeguard Mechanism Reform: Consultation", Department of Industry, Science, and Resources, Commonwealth of Australia 2022, <<https://consult.industry.gov.au/safeguard-mechanism-reform-consultation>> [accessed 8 October 2022].

31. "Energy use in Sweden", Sweden.se, Sweden, 2022, <<https://sweden.se/climate/sustainability/energy-use-in-sweden>> [accessed 8 October 2022].

32. Renewable electricity with green certificates, Ministry of Sustainable Development, Sweden, 2022, <<https://www.government.se/49b73b/contentassets/41902ab952bd49d887367ea10c0eefce/renewable-electricity-with-green-certificates#:~:text=Producers%20of%20electricity%20from%20renewable,iri%20new%20renewable%20electricity%20production>> [accessed 8 October 2022].

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Henry Tax Review: 13 Years On

Nate Hollis

Tax is the three lettered swear word that strikes fear through politicians' entire being. And it also strikes fear and panic amongst the broader Australian electorate. Tax according to the Oxford Dictionary is literally defined as 'a strain or heavy demand', so there's no wonder there's such a negative perception of tax. I mean who likes their hard-earned money to be taken away from them by a government? However, tax is a crucial fiscal policy lever that governments ought to manage and optimize in order to promote economic growth and stability within the broader macroeconomy.

At the moment tax, specifically highly necessary tax reform, is being entirely ignored by both major political parties federally and by the vast majority of governments at a state level. This ignorance is primarily due to their somewhat rational fear of tax reform being detrimental to their political prospects. However, the lack of reform is harmful to the economic interests of the Australian people, in particular younger Australians. This is because they will inherit the issues such as higher housing prices, debt and a decline in public services that are associated with a dysfunctional taxation system.

In 2009, in an attempt to spearhead and drive fiscal and tax policy reform, Kevin Rudd commissioned Ken Henry, the then Secretary of the Department of Treasury, to oversee and conduct the most extensive review and analysis of Australia's taxation system since federation. Following this review he published a set of 138 recommendations in a report, aptly titled the Henry Tax Review. These recommendations included: the need to abolish stamp duty on newly acquired residential properties, the need to flatten income taxation brackets and lower

the corporate tax rate as well as reduce Australia's dependence on income taxation for taxation revenue.¹

However, in the preceding years his report and the 138 recommendations contained within it have largely gathered dust. Despite an initially positive reception from mainstream economists, only three of the recommendations were enacted by the Rudd government, the most major being the Resource Super Profits Tax.² Ultimately, this tax was poorly implemented, as it only collected 15% of the annual revenue initially promised and in 2014 was repealed by the Abbott government.³

This begs the question; why do our governments of both political stripes continue to ignore the thoughts, recommendations and research of our Treasury Department and one of Australia's preeminent economic minds?

The simple answer to this question is politics, and the political damage one side of politics would sustain if some of the more drastic taxation reforms, which may be painful in the short term for substantial segments of the population, are enacted on their watch. However, the recommendations contained within the report would in most cases derive significant long-term benefits to the broader Australian economy, increase overall economic welfare and increase economic efficiency for the Australian population as a whole. There are a few areas of reform that governments at all levels and of both stripes must look to enact reform.

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3. Ker, P. (2013), Mining Tax Revenue Slumps, The Sydney Morning Herald. <https://www.smh.com.au/national/mining-tax-revenue-slumps-20130514-2jkm1.html#ixzz2TGVDRaYr>

Stamp duty

The abolition of the economically cumbersome and highly inefficient stamp duty tax is one of the most obvious and urgent reforms that state governments should be a top priority for governments on state level. This tax is one of the least efficient taxes that exists in Australia today and generates an economic loss of A\$1 for every dollar collected through revenue.⁴ As suggested by Ken Henry, state governments in order to improve the efficiency of the land taxation system should abolish this tax in favor of a low-cost highly efficient broad-based land tax. Not only would this improve economic efficiency, it would also go some distance to alleviating the housing affordability crisis facing our country (Coates 2018). Ken Henry describes stamp duty as “just a bad tax” as well as labeling it the “least sensible tax in Australia today”. The primary reason why this reform has not been adopted by most jurisdictions yet is due the reliance on stamp duty as a source of revenue for state governments - with it accounting for A\$15.9 billion in state revenue or 23% of total revenue.

	Share of state taxes collected from tax bases with low economic costs		Share of state taxes collected from tax bases with high economic costs		Average welfare loss per dollar of tax raised	
	%	Change in past 5 years (%)	%	Change in past 5 years (%)	(cents)	Change in past 5 years (cents)
NSW	15.8	0.5	33.7	9.3	29.7	3.9
VIC	16.7	5.4	33.2	2.6	28.6	0.9
QLD	13.3	-1.7	29.4	6.0	28.4	2.9
WA	17.8	4.6	21.6	-2.3	25.8	-0.9
SA	22.1	0.4	23.1	1.7	25.0	1.2
TAS	14.6	-1.8	26.5	5.2	27.2	2.9
ACT	38.0	7.4	20.4	-2.2	21.9	-1.8
NT	0.3	0.3	20.5	-8.1	25.8	-2.5
AUS	16.5	1.9	30.7	5.1	28.3	2.2

Figure 1: State Orange Book⁵

Action has been taken in the Australian Capital Territory to slash stamp duty and replace it with a broad-based land tax as well as by Premier of New South Wales, Dominic Perrottet, making indications about his desire to abolish stamp duty, describing the tax as “inherently terrible”. However, in most jurisdictions within the country there’s little to no desire or intention of initiating

Henry’s recommendation, primarily due to the shortfall this would leave in their state budgets.

Income taxation

Another key area that primarily our federal government should be focused on reforming and altering is our dependence on income taxation for revenue. In 2008, income taxation accounted for 44.5% of the commonwealth government’s tax collections, however, this has risen to 50% in 2020, a rate which ranks as the second highest in the OECD.⁶ As evident below in figure 2, GST and most consumption taxes such as fuel excises and land-taxes are of lower economic cost than income tax, which according to Henry distorts decision making about investment, labour supply and whether to rent or buy property. Therefore the Henry report suggests that federal governments should alter the mix of our tax revenue, so that it has a stronger reliance on consumption taxes.

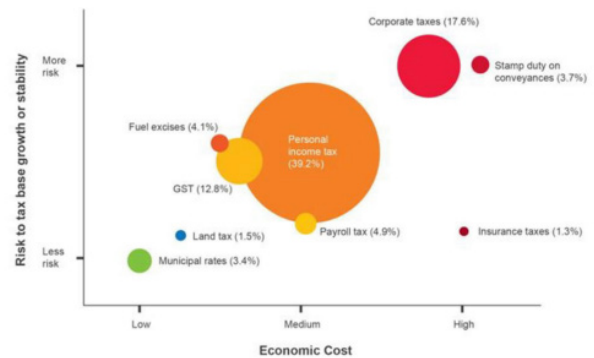


Figure 2: Economic Cost of Taxes⁷

The lowering of marginal income tax rates will obviously and inevitably result in the reduction of government revenue, which in turn will inhibit the ability of the commonwealth to properly fund important things such as education, healthcare and vital infrastructure. Therefore this must be offset to some proportion by a rise in the GST or a broadening of its base. This recommendation is contained within the Henry Tax Review and would generate A\$17-27 billion in tax additional tax revenue for the federal and state governments, covering the loss of the revenue from income taxation, improving efficiency within the economy and minimizing welfare loss.⁸ However, again reforming the GST is complex and would be deeply unpopular within the electorate. GST applies to everyone in society and raising its rate would result in people having to pay more for everyday goods and services.

Therefore, whilst the taxation reforms proposed and outlined by Ken Henry in 2009 are thought by many economists to be valid and effective, the political consequences of their implementation have been a strong disincentive for politicians to enact them. The thoughts and recommendations of one of Australia’s most pre-eminent economic minds should be respected, and the more time that passes without some of the aforementioned tax reform, the more unnecessary economic loss and stagnation Australia will face.

4. Coates, B. (2018), Abolish Stamp Duty. The ACT shows the rest of us how to tax properly, The Conversation. <https://theconversation.com/abolish-stamp-duty-the-act-shows-the-rest-of-us-how-to-tax-property-105378>
 5. Daley, J et al, (2018), State Orange Book 2018, Policy Priorities for states and territories, Grattan Institute. <https://grattan.edu.au/report/state-orange-book-2018/>

6. Whiteford P, (2022), Do Australians Pay too much in income tax?, The Conversation. <https://theconversation.com/do-australians-pay-too-much-income-tax-6-charts-on-how-we-rank-against-the-rest-of-the-world-185223>
 7. Abbey P, (2020), How GST Reform can help boost prosperity for Australia, PwC. <https://www.pwc.com.au/tax/assets/tax-reform/2020/how-gst-reform-can-help-reboot-prosperity-for-australia-july2020.pdf>
 8. Daley J, Wood D. (2015), A GST Reform Package, Grattan Institute. <https://grattan.edu.au/report/a-gst-reform-package>

To Address Our Skills Shortages, We Must Invest in Our Vocational Education and Training Sector



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The views in this article are solely those of the authors.

The COVID-19 pandemic has seen significant shifts in the Australian labour market. Australia's seasonally adjusted unemployment rate fell to 3.4% in July 2022, its lowest level since in almost five decades. Employers are struggling

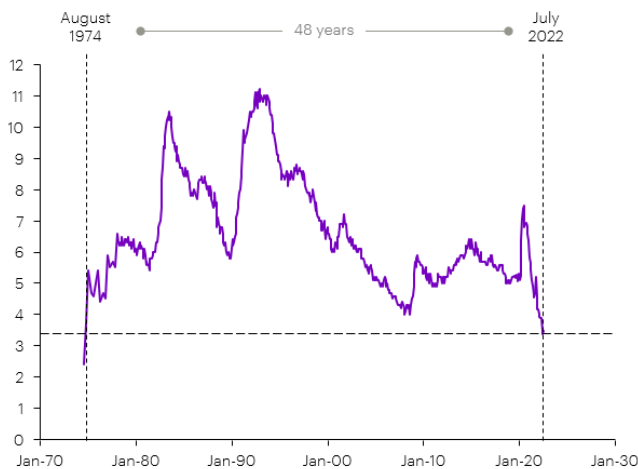
to fill vacancies, with the number of online job advertisements doubling since January 2020, returning to levels not seen since the Global Financial Crisis (Figure 1)

Figure 1:

Australia's unemployment rate is at its lowest in almost five decades, while online job vacancies doubled since January 2020

Australian unemployment rate

% , seasonally adjusted



Internet Vacancy Index job advertisements

Thousands, seasonally adjusted



Sources: Australian Bureau of Statistics,¹ National Skills Commission.²

1. Australian Bureau of Statistics. (2022). Labour Force, Australia.

2. National Skills Commission. (2022). Internet Vacancy Index.

With employees in high demand but in low supply, there is little surprise that the proportion of occupations experiencing labour shortages shot up from 19%

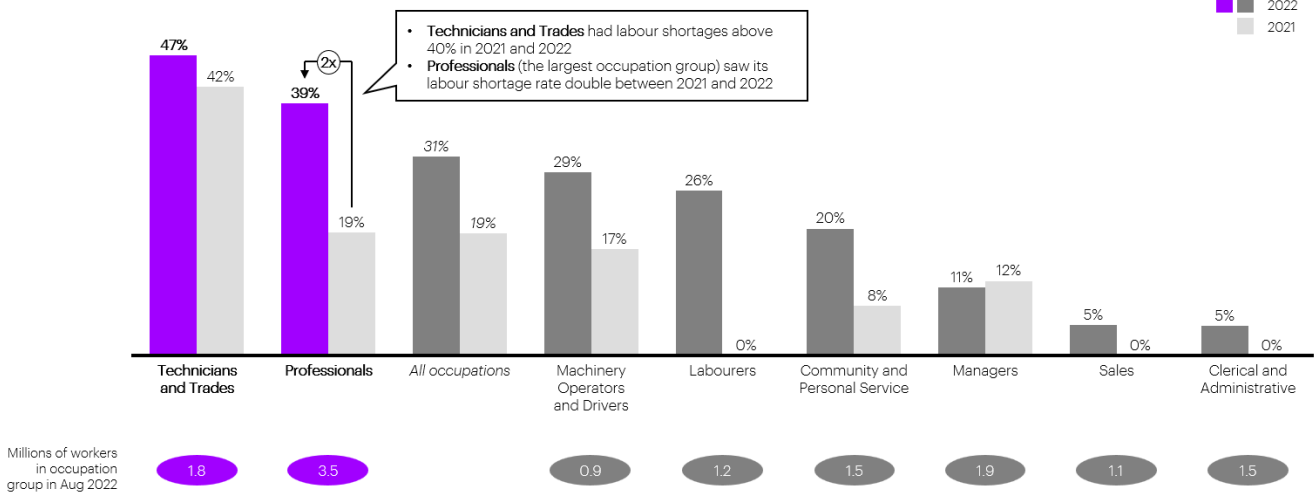
in 2021 to 31% in 2022. But what is interesting is how these shortages differ across occupation groups.

Figure 2:

Technicians and Trades, and Professionals, experienced above average rates of labour shortage in 2022

Labour shortages by occupation group

2021 and 2022



Sources: Australian Bureau of Statistics,³ National Skills Commission.⁴

Technicians and Trades, and Professionals, are the two occupations with above-average shortage rates – if we want to address labour shortages, this is where the largest gains can be made. However, these two occupations have distinct attributes.

The shortage rate for Technicians and Trades was over 40% in both 2021 and 2022, indicating the presence of more structural supply-side issues in these occupations. Indeed, there is a shortage in relevant technical and trade skills, with only around one-third of applicants to these occupations being suitably qualified.⁵

On the other hand, the proportion of occupations in shortage in the Professionals group (the largest occupation group) more than doubled between 2021 and 2022. Alongside very low unemployment rates, this suggests that this shortage in Professionals is perhaps more cyclical and transient. Nonetheless,

skills shortages for Professional occupations remain relevant. For example, the recent boom in demand for skilled professionals in tech roles like software programming has outstripped the supply of people with sufficient experience in these sectors, leaving the tech sector with vacancy rates that are 60% above the national average.⁶

If done correctly, Australia’s vocational education and training (VET) sector has the potential to address labour and skills shortages in these key occupations groups. With job tasks changing on average by 18% per decade, and with the majority of workers expected to change jobs multiple times over the next two decades,⁷ VET also has the opportunity to reskill Australia’s workforce as its needs invariably evolve over time. And VET has a promising track record for students – around 60% of VET students enjoy an improved employment status after training, and over 40% of students who were not employed before completing a VET course gained employment.⁸

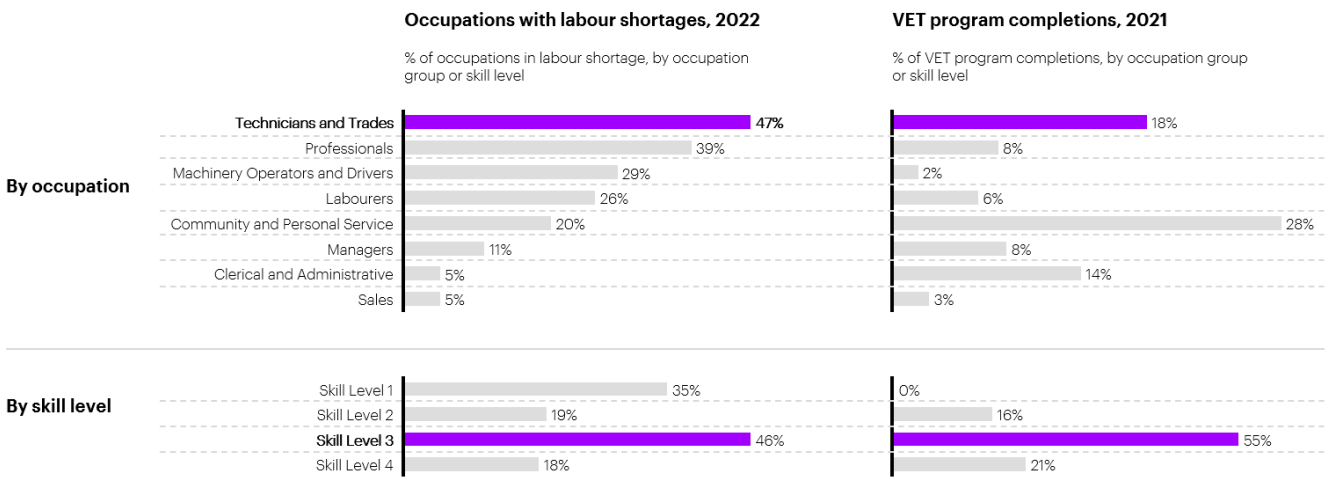
3. Australian Bureau of Statistics. (2022). Labour Force, Australia, Detailed.
 4. National Skills Commission. (2022). 2022 Skills Priority List: Key findings report.
 5. National Skills Commission. (2022). 2022 Skills Priority List: Key findings report.

6. Tech Council of Australia. (2022). Getting to 1.2 million: Our roadmap to create a thriving Australian tech workforce.
 7. Alphabet. (2019). Future skills.
 8. National Centre for Vocational Education Research. (2021). VET student outcomes 2021.

Figure 3:

The attributes of VET graduates aligns with the characteristics of occupations with the largest labour shortages

Attributes of VET graduates and characteristics of occupations with labour shortages



Sources: National Skills Commission,⁹ National Centre for Vocational Education Research.¹⁰ Notes: Skill Level 1 is equivalent to a Bachelor Degree or higher qualification. Skill Level 2 is equivalent to an Associate Degree, Advanced Diploma or Diploma. Skill Level 3 is equivalent to Certificate IV, or III including at least two years of on-the-job training, while Skill Level 4 is equivalent to Certificate II or III.

VET is a promising solution to Australia’s skills shortages because the attributes of VET course completions align with the characteristics of occupations with the largest rate of labour shortage. For example, Technicians and Trades, which captured the second highest number of VET program completions in 2021, is also the occupation group with the highest labour shortage rate. More than half of VET completions were for Skill Level 3 programs (generally Certificate III or IV), which is also the skill level with the highest labour shortage rate.

However, Figure 3 suggests that VET, at present, is unlikely to resolve skills

shortages among Professional occupation, with programs associated with Professional occupations only accounting for 8% of VET program completions in 2021. Nor is VET currently in a position to respond to labour shortages among occupations requiring workers with Skill Level 1 (generally Bachelor Degrees and above). But the real promise of VET is in its flexibility and dynamism, which can be used to quickly reskill and upskill workers in skilled occupations (and across the workforce generally). Compared to Bachelors Degrees and professional courses offered by universities, which can take students more than three years to complete, many VET programs can be completed in under a year.¹¹

‘...the real promise of VET is in its flexibility and dynamism, which can be used to quickly reskill and upskill workers’

9. National Skills Commission. (2022). 2022 Skills Priority List: Key findings report.
 10. National Centre for Vocational Education Research. (2022). Databuilder.

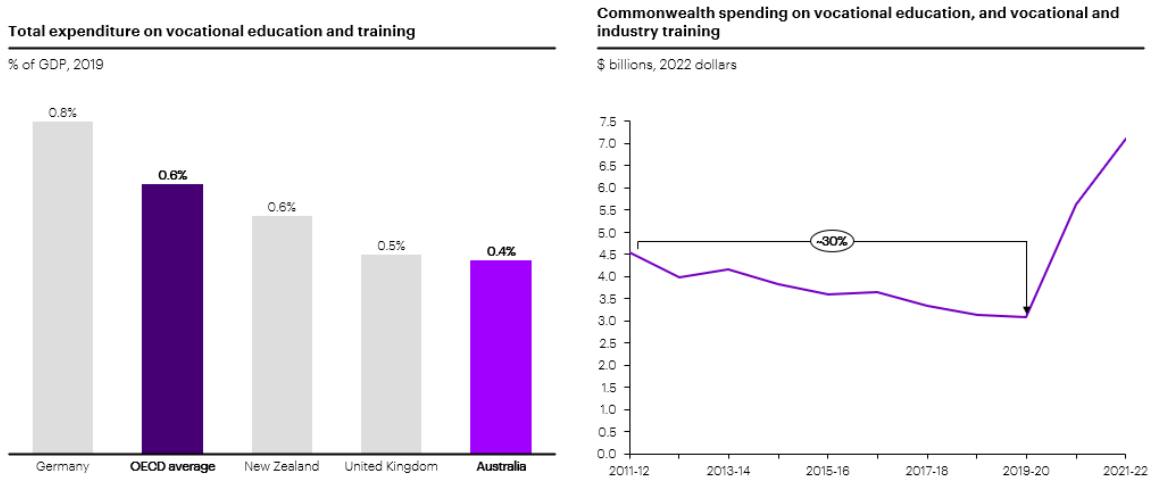
11. Skilling Australia Foundation. (2017). Perceptions and not reality: Myths, realities & the critical role of vocational education and training in Australia

There are three key obstacles to a successful VET sector

1. The VET sector lacks sufficient funding

Figure 4:

Australia’s spending on VET is lower than its international peers, with Commonwealth funding declining by 30% from 2011-2 to 2019-20



Sources: Organisation for Economic Co-operation and Development;¹² federal Government Budget papers, Accenture analysis. Notes: Includes upper secondary vocational education, post-secondary non-tertiary education and short-cycle tertiary education. OECD post-secondary non-tertiary education taken to be zero due to missing data to give a conservative estimate of total expenditure on vocational spending and training in the OECD.

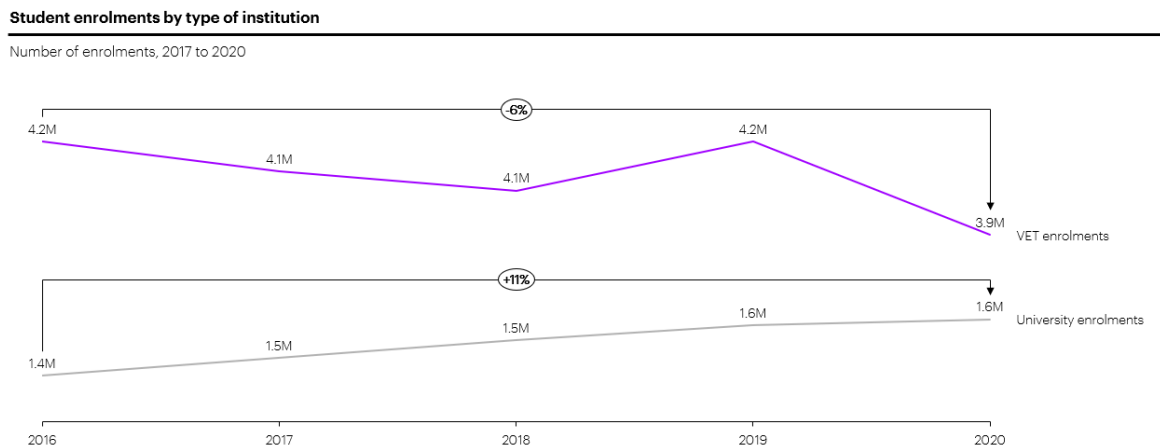
Australia’s funding for the VET sector lags many of its international peers. In 2019, Australia spent only 0.4% of GDP on VET – 0.2 percentage points lower than the OECD average, and 0.4 percentage points lower than Germany. Over the 2010s, Commonwealth spending on VET generally declined each year, with annual spending falling by about 30% between 2011-12 and 2019-20.

It was not until the 2020-21 Budget that Commonwealth spending on vocational education, and vocational and industry training, exceeded \$5 billion. This lack of funding has arguably translated to worse outcomes for VET graduates. Employer satisfaction with VET has declined from 73% in 2013 to 68% in 2021.¹³

2. Prospective students do not understand the value of VET

Figure 5:

VET enrolments have declined while university enrolments have increased



Sources: Department of Education;¹⁴ National Centre for Vocational Education Research;¹⁵ Community Colleges Australia;¹⁶ Accenture analysis.

12. Organisation for Economic Co-operation and Development. (2019). Educational finance indicators.

13. Productivity Commission. (2022). Report on government services.

14. Department of Education. (2022). Student enrolments pivot table.

15. National Centre for Vocational Education Research. (2022). Databuilder.

16. Community Colleges Australia. (2017). NCVET statistics show a massive increase in community education students in 2016.

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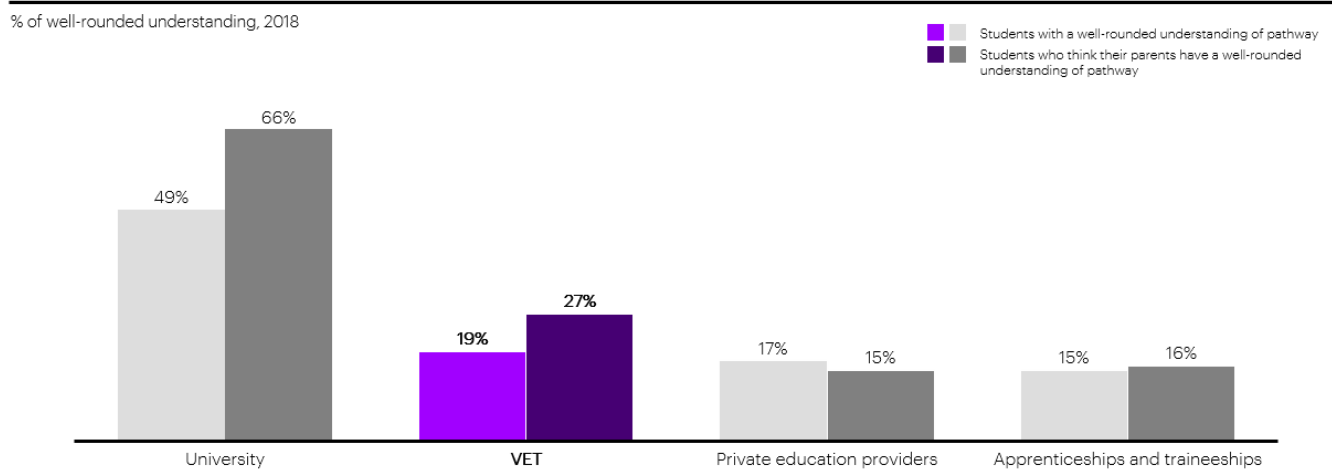
As Figure 5 shows, VET’s popularity has declined in recent years. From 2016 to 2020, the number of VET enrolments declined by 6%, while the number of university enrolments increased by 11% over the same period. This trend, in part,

reflects students’ (and their parents’) lack of understanding of the value of VET programs.

Figure 6:

Many prospective students believe they and their parents lack a well-rounded understanding of VET

School students’ perceptions of their, and their parents’, understanding of post-secondary pathways



Sources: Shipley, B. & Stublely, W. (2018).¹⁷ Notes: Students have a well-rounded understanding if they report having a ‘strong’ or ‘good’ understanding of the pathway.

A recent survey of secondary students showed that only 19% thought they had a good understanding of VET, and only 27% believed their parents would have a good understanding of VET. Students indicated much greater confidence in their own and their parents’ understanding of university as a post-secondary pathway.

This lack of understanding has led students and parents to undervalue the opportunities provided by VET courses. 28% of young Australians were deterred from studying VET courses due to a perceived ‘stigma’ attached to these courses, while only 3% of students thought that their parents believed

that VET is the best pathway to a successful career.¹⁸ These misperceptions of VET has held back its potential to be powerful solution to some of Australia’s skills shortage problems.

To address these misperceptions, prospective students and their parents must have easy access to information about the value of VET. Where there is plenty of information which is publicly available, including VET course information and potential career pathways, this information is fragmented,¹⁹ which makes it difficult for students and parents to understand the true potential value of a VET qualification.

17. Shipley, B. & Stublely, W. (2018). After the ATAR II. Year 13 and YouthSense.
 18. Walker, I. (2019). The TAFE Report: Changing young people’s perceptions of TAFE and vocational education. Year 13 and YouthSense.
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 22. Haasler, S. R. (2020). The German system of vocational education and training: challenges of gender, academisation and the integration of low-achieving youth. Transfer: European Review of Labour and Research, 26(1), 57-71.
 23. World Bank. (2022). Unemployment, youth total (% of total labor force ages 15-24) (modeled ILO estimate).

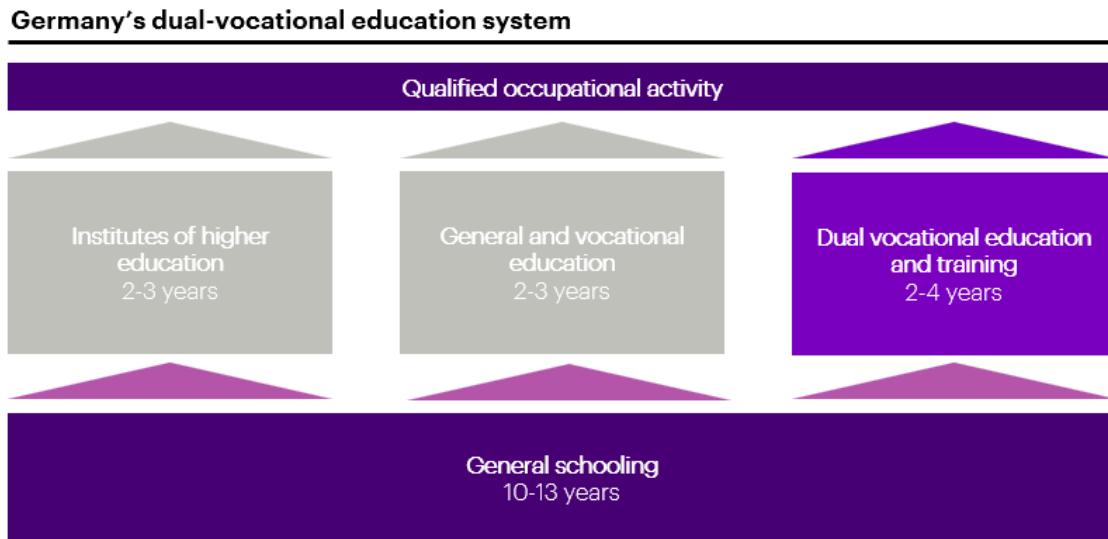
3. Many VET students lack practical industry experience

For VET to address our skills issues, modern competency-based VET systems like Australia's should incorporate substantial work-based training to ensure that graduates are workforce-ready.²⁰ Unfortunately, many Australian VET students lack practical experience. In 2020, less than 8% of VET students undertook training as part of an apprenticeship or traineeship training contract.²¹ To ensure

that VET graduates are job-ready, Australia could draw upon Germany's dual-vocational system which pairs practical industry experience with theoretical coursework (see Box A). Germany's successful dual-vocational system has been credited as a major driver of Germany's low youth unemployment rate,²² which was over 4 percentage points lower than Australia's in 2021.²³

Box A: The Dual-Vocational System in Germany

Figure 7:



Sources: Hockenos, P. (2018),²⁴ Accenture analysis.

The dual-vocational education system combines theoretical course work and practical apprenticeships in industry. Pioneered in Germany, the pathway is viewed as a legitimate avenue for further qualifications with around half a million apprentices taking a skilled profession every year.²⁵ Generally, more students opt into the dual-vocational system than the higher tertiary education.²⁶

Over two to four years, VET students spend part of their time at vocational school learning theoretical knowledge while also working part-time in industry, allowing them to gain practical knowledge and hands-on experience. Most courses have a 40/60 split of classroom to workplace; however, this can vary.

24. Hockenos, P. (2018). How Germany's Vocational Education and Training system works. Clean Energy Wire.

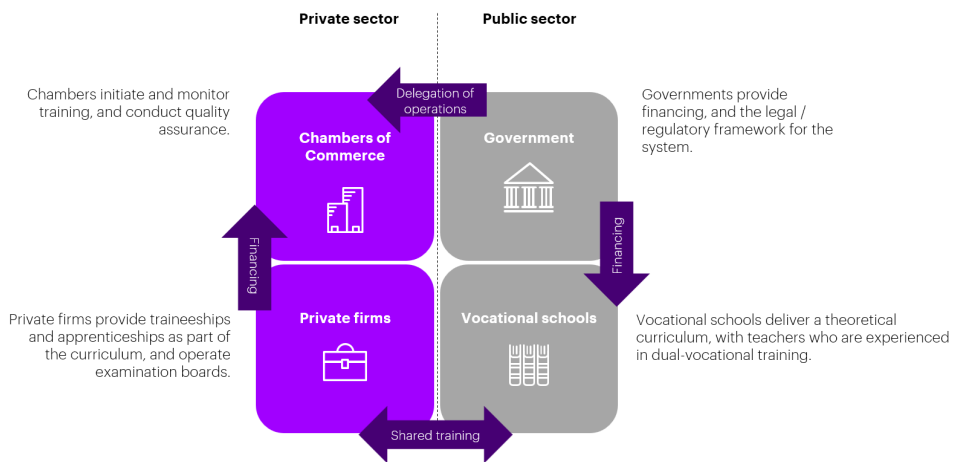
25. Hockenos, P. (2018). How Germany's Vocational Education and Training system works. Clean Energy Wire.

26. German Office for International Cooperation in Vocational Education and Training. (2020). Data Sheet – Dual VET in Germany.

Figure 8:

There is a shared burden between public and private to educate and train students in the dual-vocational system

Relationships between chambers, government, private firms and vocational schools in the dual-vocational system



Sources: Engelmann, J. (2017)²⁷ Accenture analysis

The system works on a public-private partnership with interaction between employers, vocational schools, governments and industry bodies (Figure 8). The burden of cost is shared between both government and private partners, with companies usually bearing two-thirds of the total cost every year vocational training in Germany.²⁸

This system is of benefit to businesses, graduates and the government. Businesses that take part in the practice consider training their own new employees the best form of personnel recruitment. Training companies save on recruitment costs and the cost of new-employee training, while reducing the risk of hiring the wrong employee for the job. Over two-thirds of trainees are hired by their training company after completing training.²⁴ Graduates benefit from receiving market-relevant training that improves their chances in the labour market. Finally, governments benefit from co-funding and shared training responsibility between the private and public sector, which eases the burden on public budgets.

If Australia's VET sector can overcome these three barriers, it will be well-placed to help develop a skilled Australian workforce that is resilient in the face of the next crisis.

27. Engelmann, J. (2017). Basics of the dual system in vocational education and training (VET) and the role of chambers of commerce and industry (CCI). Deutscher Industrie- und Handelskammertag.

28. Federal Ministry of Education and Research. (2022). The German Vocational Training System.

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To the Moon and Back: The Rise and Fall of Terra Luna

Domenic Filippone

On April 5th, 2022, the cryptocurrency Terra Luna (now labelled Terra Luna Classic) hit an all-time high of \$119.18 USD, which was a massive win for the Terra network and the future of algorithmic stablecoins. It appeared that decentralized finance was here to stay and was ready to make a big impact on how financial markets operated in the future. But just over a month later, on May 13th, the crypto had hit its all-time low price, a miniscule \$0.000000999967¹. So, what happened to cause such a catastrophic crash? And what is Terra Luna, and how did it work?

Founded by Do Kwon and Daniel Shin under their start-up company Terraform Labs in 2018, the Terra network² is an open-source blockchain which allows its users to access an ecosystem of decentralised finance (DeFi) products³. The main purpose of the Terra network is to facilitate the creation, trading, and usage of decentralised stablecoins, such as TerraUSD (UST)⁴. Stablecoins are DeFi assets which are pegged to the price of a single asset, such as a fiat currency. Initially, these stablecoins used a basket of assets, such as reserves in the asset they were pegged to in order to maintain said peg. However, decentralised stablecoins operate a bit differently. Arguing that holding a basket of centralised assets defeats the purpose of DeFi and introduces the possibility of regulatory oversight, creators like Kwon and Shin began to create decentralised stablecoins, which focus on using trading algorithms to maintain pegs⁵. UST is one such stable coin, which operates on the Terra network and maintains a 1:1 peg with the US Dollar through the arbitrage of the network's governance token, Terra Luna. Luna is mined on the Terra blockchain by people known as "validators", who record and verify transactions on the blockchain and

earn transaction fees as compensation. This process of verification is known as staking, and Luna is the staking currency for the Terra network. The algorithm, Terra protocol, that maintains UST's peg to the US Dollar, essentially operates by examining demand for UST and regulating supply accordingly, through providing incentives for arbitrage, as 1 UST can always be traded for \$1 worth of Luna. For example, if UST was trading above its peg (i.e. 1UST buys more than 1US Dollar), you could trade your Luna for UST using the Terra protocol, then sell that UST for more than its value in USD, thus making an arbitrage profit. In doing this, you burn Luna, diminishing its supply. Then, you mint more UST, increasing its supply, placing downward pressure on the price of UST, and returning it back to its peg. The same logic goes for if UST is below its peg, meaning that, in theory, market forces should always keep the UST pegged to the US Dollar⁶. However, in early May 2022, this assumption proved catastrophic.

Throughout early 2022, Kwon and the Luna Foundation Guard (LFG) began publicly amassing large reserves of Bitcoin in order to back the algorithmic stablecoins of the Terra network. However, on May 9, Bitcoin dropped around 12%, just days after the Federal Reserve announced an interest rate hike⁷. Theories vary on what happened next, with a popular conspiracy theory stating that the world's largest asset manager, Blackrock, and Citadel Securities manipulated the price of BTC and UST in order to tank Luna, however this is merely a conspiracy theory and has been vehemently denied by both firms⁸. Regardless, beginning on May 7, UST had started to de-peg from the US Dollar, something which was attributed to a large whale selling large amounts of UST, pushing down its price and causing the algorithm to burn UST to mint more

1. "Terra Luna Classic," CoinGecko, accessed August 30, 2022, <https://www.coingecko.com/en/coins/terra-luna-classic>
 2. "Terra," Terra Money, accessed August 31, 2022, <https://www.terra.money/>
 3. "What is Decentralized Finance (DeFi) and How Does It Work?," Investopedia, accessed August 30, 2022, <https://www.investopedia.com/decentralized-finance-defi-5113835>
 4. "About Terra," Terra Docs, accessed August 31, 2022, <https://docs.terra.money/docs/learn/protocol#what-is-terra>
 5. Robert Stephens, Liam J. Kelly "What is Terra? The Algorithmic Stablecoin Protocol Explained", Decrypt, May 11, 2022, <https://decrypt.co/resources/what-is-terra-algorithmic-stablecoin-protocol-explained>

6. "Terra Definition", Investopedia, accessed August 31, 2022 <https://www.investopedia.com/terra-5209502>
 7. Bumper, "The Crypto Market Crash of May 2022- How Bumper would have saved you", Medium, May 11, 2022, <https://medium.com/bumper-finance/the-crypto-market-crash-of-may-2022-how-bumper-would-have-saved-you-c4d93d3994f6/>
 8. Simona Ram, "The Collapse of Luna: What Happened and Why?", DailyCoin, May 12, 2022, <https://dailycoin.com/the-collapse-of-luna-what-happened-and-why/>
 9. Ade Hennis, "UST Stablecoin Fell to Nearly 60 Cents Tuesday – But Why?", Market Realist, May 11, 2022, <https://marketrealist.com/p/why-did-terra-depeg-from-the-dollar/>



Luna. Such a large withdrawal, along with the falling price of Bitcoin, led to large withdrawals from Terra's Anchor protocol¹⁰. Anchor is what is known as a staking protocol, in which investors on the Terra network invest UST into a pool of funds and earn 20% interest on their holdings¹⁰. As investors began to withdraw their UST, the price de-pegged, and the algorithm could not keep up against the downward pressure being placed on the UST price. Do Kwon and the LFG began to sell off their large Bitcoin reserves in order to defend the UST peg, but this was to no avail, as the price of Bitcoin began to fall. Eventually, as the UST peg worsened, a full on bank run ensued, as investors began withdrawing funds from Anchor en-masse, pushing the price of UST further and further down until it eventually hit a low of \$0.25 on May 11¹¹. As this was happening, the protocol was working overtime to maintain the peg, however the sell off was much faster than it could manage. However, by minting new Luna and burning UST to try and raise its price, the supply of Luna became overwhelmed, and this effect coupled with the selling of Luna due to mass panic about the Terra network, led to a complete crash in the price of Luna itself, until it went to virtually zero¹¹. When all was said and done, the crypto crash had wiped nearly half a trillion dollars' worth of market cap off global cryptocurrency markets, in the space of just 6 days.

In the aftermath, Kwon created an action plan which involved creating a Terra2 network and reminting a new Luna coin and UST, a decision which was heavily criticised by those in the crypto space for completely ignoring the fundamental issues behind the first crash. The essence of an algorithmic stablecoin, although an important feature in the future of DeFi, cannot rely purely on the algorithm. Although LFG had amassed large Bitcoin reserves, they neglected to understand that Bitcoin itself was a volatile asset and was strongly correlated with the price of Luna and UST. This meant that there was no real stable asset value backing the entire Terra network, and so when things went wrong, they

went catastrophically wrong, with nothing protecting UST from a large-scale bank run¹².

Although this was a massive event in the crypto world, this asset class has weathered much bigger storms, such as the Mount Gox hack, which wiped 99% off of the value of Bitcoin, and the 50% drop that occurred when COVID lockdowns began in March 2020. There is hope that this is not the end for DeFi and algorithmic stablecoins, although life does get much harder from here. Shortly after the crash, Treasury Secretary 'Janet Yellen' increased calls for regulation around stablecoins, something which could further hurt the ideals of DeFi. Since Luna's catastrophic crash, other stablecoins, like USD Tether (USDT) have risen up to take UST's spot atop the pile, and these newer stablecoins have in fact been backed by real cash reserves and assets. Some have even used algorithms that take an over-collateralised approach, setting a limit for which the stablecoin and its native currency can be exchanged.

So, where to from here? There is without a doubt great benefits that can be derived from the innovations of cryptocurrency and decentralised finance. The ease of transfer of funding across borders, fewer transaction costs and the ability to host entire financial systems on one blockchain system are benefits of these innovations that we will likely maintain long into the future. However, as with any asset class, there are frequent bumps along the road, and the crash of Luna shows that perhaps the market got ahead of itself, favouring high interest rates and endless growth over creating a system based on solid economic foundations. Yet failure is a great motivator, and we have already seen other entrepreneurs take on the mistakes of Kwon and the LFG and improve their own systems to avoid such a catastrophe again. The crypto boom may be over for the time being, but this space still has a long way to go.

10. "Anchor Protocol", Anchor, accessed August 31, 2022, <https://www.anchorprotocol.com/>

11. @Oxstew, @j_mokwh, @somesbies, "The UST Depeg: The Good, The Bad, and the Ugly", Treehouse, May 20, 2022, <https://www.treehouse.finance/insights/the-ust-depeg-the-good-the-bad-and-the-ugly>

12. Opeyemi, "What Happened to LUNA", Medium, May 17, 2022, <https://medium.com/coinmonks/what-happened-to-luna-4df271ae47c>

Adding Insult to Injury: How Australia's Housing Affordability Problem is Impacting Our Health



Australian Government
Productivity Commission

Cate Everitt
Senior Research Economist

The Productivity Commission recently released a report looking at the effectiveness of the National Housing and Homelessness Agreement. This agreement seeks to improve access to affordable, safe and sustainable housing and includes the transfer of about \$1.6 billion a year from the Australian Government to States and Territories to fund housing and homelessness services.

The report revealed some concerning trends. Australians — particularly low-income households — are spending more of their incomes on housing than they used to. Vacancy rates in the private rental market are low, and more Australians are renting and for longer periods (and renters tend to be younger and have lower incomes). Homeownership rates are falling, particularly among young people. Demand for social housing and homelessness services are increasing. Higher housing costs have the potential to hurt not only our wallets, but also our health. Because housing is central to our wellbeing — something which we were reminded of during the COVID-19 pandemic — poor quality housing can negatively impact our physical and mental health. These impacts are often more acutely felt by low-income households because when supply is limited and competition for housing is high, they have limited options and can be pushed into substandard housing.

In 2016, over 1 million people in Australia were found to be living in 'poor' conditions, with 100,000 of them living in 'very poor' or 'derelict' housing.¹ Data from the ABS shows that 15% of private renters and 21% of public housing renters reported a major structural problem in their dwelling, compared to 9% of homeowners.² While shoddy construction and irregular maintenance can

increase the risk of falls or injury, structural issues and poor accessibility can also cause stress and isolation.³ A number of studies show that moving from low-quality housing to higher-quality housing is associated with improved mental health.⁴

Inadequate insulation and energy-inefficient houses are also linked to chronic illnesses. About 26% of people across all housing types in Australia were unable to stay warm at least half of the time during winter,⁵ with persistent cold housing problems concentrated at the lower end of the income distribution.⁶ Apart from being uncomfortable, low indoor temperatures can increase the risk of respiratory health conditions, contribute to mental ill-health and cause absences from school or work due to illness.⁷ Conversely, in areas with high temperatures, like the Torres Strait, many homes do not have air conditioning, and people can be at risk of heat stress. High indoor air temperatures are linked to greater risk of low mood, hospitalisation and death.⁸

Housing that lacks proper sanitation facilities and ventilation can be detrimental to occupants' health. Australia is the only developed nation in the world to not have eliminated trachoma, a disease that causes blindness and can be prevented through regular face and hand washing. While rates of trachoma have declined since 2009, it is almost entirely found in Aboriginal and Torres Strait Islander communities, where access to clean water and amenities is not always readily available.⁹ Poor indoor air quality due to a lack of ventilation can also increase the likelihood of respiratory illnesses. Studies in Australia have found a link between indoor mould, mildew or fungal indicators and many respiratory illnesses, allergies, gastrointestinal illnesses and depression.¹⁰

1. Baker et al. 2016, 'Poor housing quality: Prevalence and health effects', *Journal of Prevention & Intervention in the Community*, vol. 44, no. 4.

2. Commission estimates using ABS (Microdata: Income and Housing, Australia, 2019-20, Cat. no. 6541.0.30.001).

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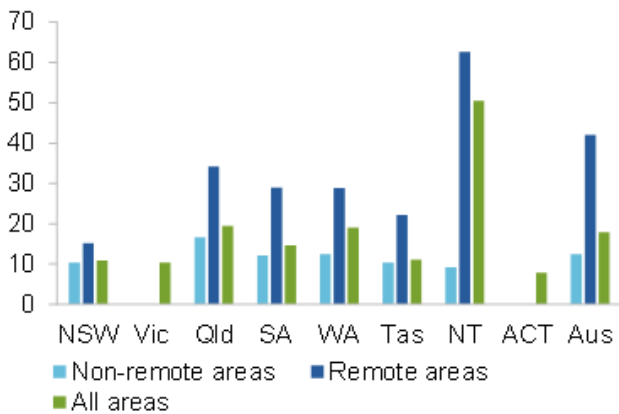
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The supply and cost of available housing impacts the size of households. As rents increase, individuals or families may be incentivised to form larger households to save money. In some instances, overcrowding may occur. Australia uses the Canadian National Occupancy Standard to define overcrowding. It factors in, among other criteria, how many people share a room and if adults share a bedroom with children.

Percentage of Aboriginal and Torres Strait Islander people living in overcrowded households by state, 2018-19



Aboriginal and Torres Strait Islander people are almost four times more likely to be living in overcrowded conditions compared to non-Indigenous people – 18% versus 5% – according to the 2018-19 National Aboriginal and Torres Strait Islander Health Survey. In remote areas, overcrowding is even more endemic, with the highest rates being in the Northern Territory (63%) and Queensland (34%).¹⁰

When coupled with poor quality housing, overcrowding can cause the spread of skin infections and parasitic infestations, respiratory, eye and ear infections, diarrhoeal diseases and rheumatic fever.¹² This came into sharp focus during the COVID-19 pandemic. In Wilcannia, NSW, most Aboriginal residents lived in overcrowded public housing. The Delta variant spread quickly, infecting over 30% of the community (which was Australia’s highest rate of the disease per capita). In some cases, people slept in tents in their yards to isolate from overcrowded households.¹³

The most extreme and detrimental result of unaffordable housing is homelessness. Homelessness can be hard to define but it means more than not having a roof to sleep under. It is generally agreed that a person is homeless if they are living in non-conventional accommodation (e.g. a car) or rough sleeping and/or if their accommodation is short-term or for emergency purposes (e.g. couch surfing, refuges, crisis shelters).¹⁴

Rates of physical illness among Advance to Zero respondents compared to the general population

Asthma	2.7x
Cancer	4.4x
Diabetes	2.1x
Heart disease, arrhythmia or irregular heartbeat	3.3x
Hepatitis C	26x
HIV/AIDS	13x

The transient, temporary and sometimes cyclical nature of homelessness makes it difficult to measure. On census night 2016, more than 116,000 people (0.5% of the population) were estimated to be homeless.¹⁵ As with overcrowding, homelessness is disproportionately experienced by Aboriginal and Torres Strait Islander people who accounted for 20% of the homeless population in 2016, while making up 3% of the general population.¹⁶

People who experience homelessness are more likely to have a chronic illness, as shown by data from the Australian campaign Advance to Zero.¹⁷ People experiencing homelessness also have significantly lower life expectancy. In England and the United States, rough sleepers on average die 30 years earlier than the general population.¹⁸ Evidence from Canada indicated that people living in marginal housing — including shelters, rooming houses and hotels — experienced a life expectancy up to 13 years lower than the general population.¹⁹

The Victorian Coroners report, *Suicides of Aboriginal and Torres Strait Islander people in Victoria*, found that between 2018 and 2021, Aboriginal and Torres Strait Islander people died by suicide at a rate nearly three and a half times higher than non-Indigenous people. Lack of access to stable accommodation was reported to be one of the recurring themes in the 92 suicides during that period.²⁰

Housing unaffordability, and what to do about it, is a hotly debated topic. What is clear is that the quality of housing, how many people you live with, and the stability of that accommodation can have very real health impacts. Thousands of Australians not only suffer the indignity, but also the health consequences, of inadequate housing. If we do not manage to improve the quality and affordability of housing across Australia, we may not just face a housing crisis, but rising health costs as well.

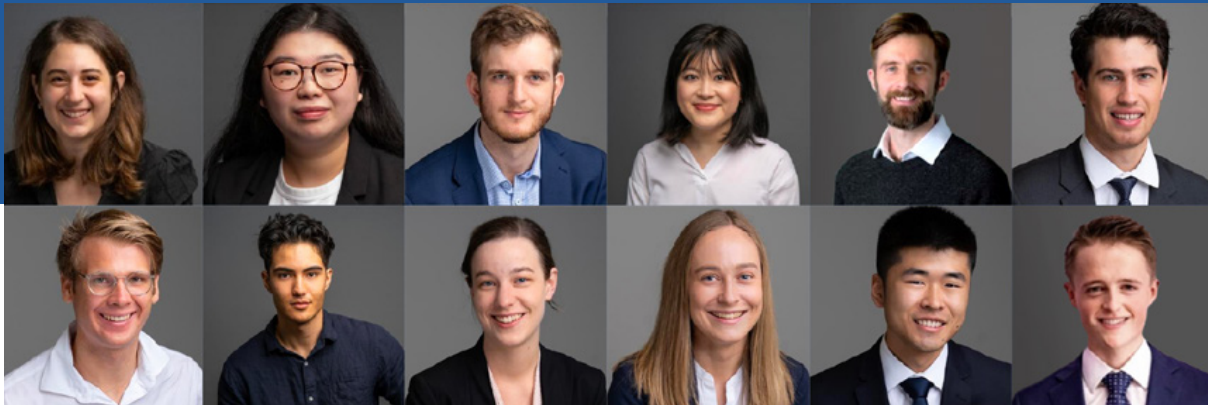
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Quiet Quitting

Anna McBride

The term 'quiet quitting' has become the new buzzword among workplace discourse. Its popularity has skyrocketed on platform such as TikTok, where its hashtag has over 112.1 million views.

What is it?

Quiet quitting is the antithesis to the hustle culture mentality. While it doesn't mean outright resignation from your job, it involves the rejection of going above and beyond of what your work duties entail.¹

Although the term has come into popularity only recently – following a TikTok video posted by user @zkchillin in July 2022 – the phenomenon itself is not novel. Moreover, its underpinning ideas are global, rather than westbound. In 2021, a similar shift occurred in China with the 'tang ping' (lying flat) movement as young workers protested unsustainable work cultures.²

How many people are adopting it?

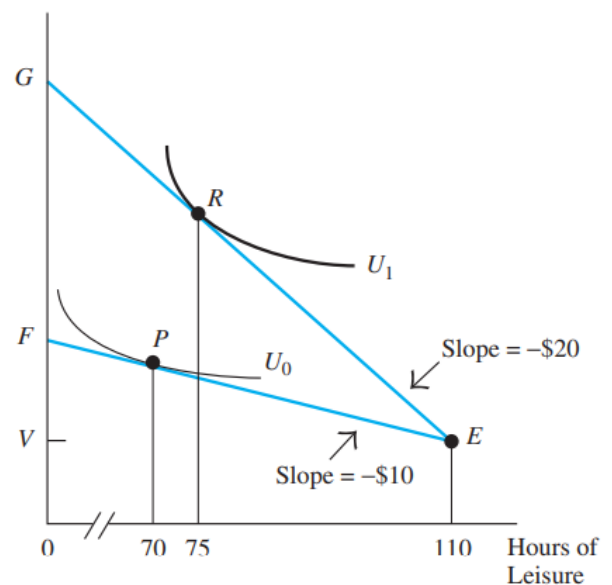
The extent of the quiet quitting phenomenon is great. Management and consulting company, Gallup, found that at least half of the U.S. workforce are experiencing passive disengagement from their current role.³ The recent growth in disengagement centres around younger workers who, since the pandemic, have 'declined significantly in feeling cared about and having opportunities to develop'.⁴

What is causing it?

Deloitte's 2022 Global Gen Z and Millennial Survey found that pay is the number one reason why Gen Zs and millennials left their jobs in the last two years.⁵

As inflation increases and real wages decrease, we can predict higher levels of job turnover, voluntary unemployment, and decreased working hours as workers become less willing to increase their labor supply. This is because individuals must make a trade-off between the time they spend on either leisure or work. In the below example, as wages change from \$20 to \$10, the opportunity cost of leisure decreases and in response the individual will choose to spend less time earning (for consumption) and more time on leisure, from 65 hours per week to 70.⁶

Consumption (\$)



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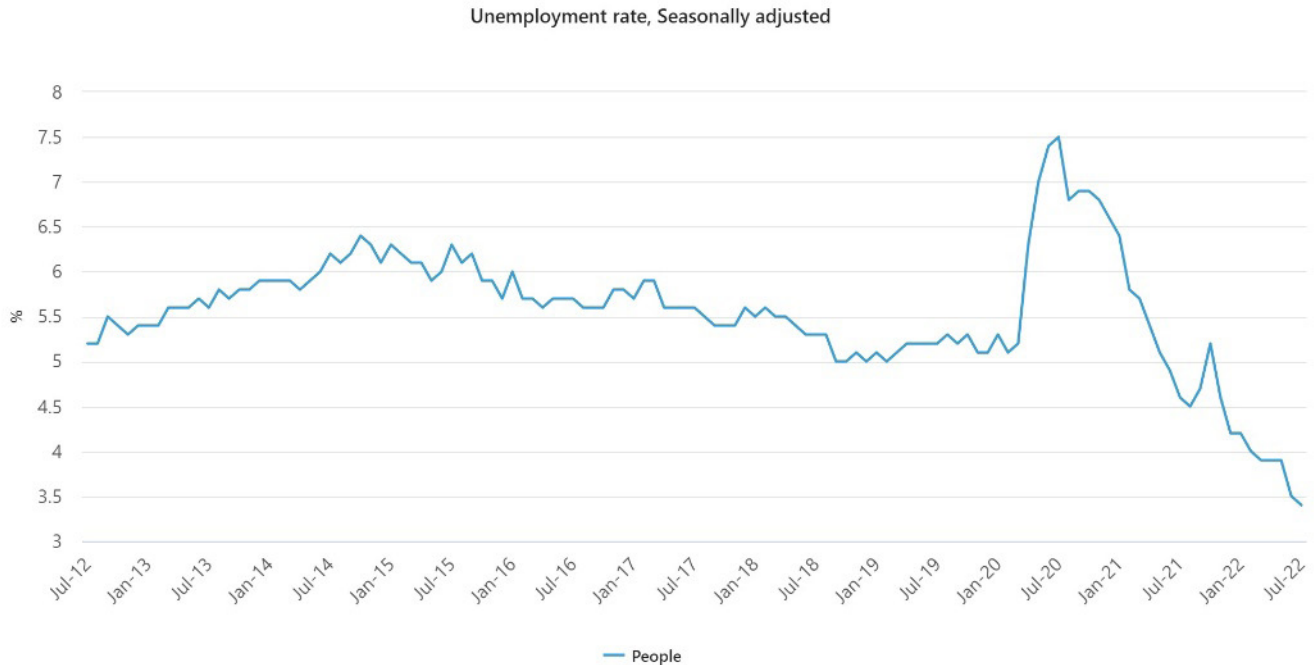
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Source: Australian Bureau of Statistics, Labour Force, Australia July 2022

In addition to the depreciation of the real wage (wage minus the cost of inflation), the marginal cost of labor supply further increases with poor working boundaries. The move to greater remote work following the pandemic has undermined work-life barriers as non-standard hours become more the norm. Unfortunately, over a quarter (28%) of flexible location employees are not paid for their overtime work.⁷ Any time spent on unpaid work – from staying back after 5pm or replying to emails on a Sunday – is a decrease in actual wages when accounting for the increase in effort.

However, we would expect to see an increased rate of unemployment if we considered the impact of declining real wages alone. But unemployment has been at its lowest rate in years.⁸

Instead, the global economic growth slowdown has led to disengaged workers staying in their current roles.⁹ This is because weakened job markets, as the result of slowdowns, increase the costs and risks associated with quitting.

A second consequence of the uncertain and declining economic environment is the increasing levels of poor mental health among young people. Both

Millennials and Gen Zs face high levels of financial anxiety and rate cost of living as their top concern.¹⁰ This anxiety may be an accelerator to the burnout leading to quiet quitting.

What does 'quiet quitting' mean for the national economy?

Productivity is increasingly hard to measure, especially as we switch to a service-oriented economy.¹¹ Even harder to measure is quiet quitting's effect on productivity.

Paradoxically, quiet quitting may actually be beneficial to workers productivity.¹² By avoiding burnout, workers may become happier, which is associated with a 13% increase in productivity.¹³

This 'happy workers = higher productivity' outcome is reflected when comparing the work-life balance and worker productivity between a nation with a 'strict' working mentality and a nation with a 'lax' approach – Japan and Italy. Japanese working culture rests in an extreme dedication to work with little consideration for personal life.¹⁴ Meanwhile, Italy holds the top ranking for the country with the best work-life balance.¹⁵

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‘Paradoxically, quiet quitting may actually be beneficial to workers’ productivity. By avoiding burnout, workers may become happier, which is associated with a 13% increase in productivity.’



While Japanese employees’ commitment to long working hours may seem advantageous, the country actually ranks lower on worker productivity than Italy. In Italy, productivity in dollars-per-hour is \$56.09 (USD) while it is only \$42.56

(USD) in Japan.¹⁶ Other countries with high productivity include Luxembourg (\$80.33/hour), Norway (\$100.33/hour), and Australia (\$61.44) – nations with shorter working weeks and better work-life balances than Japan.¹⁷

However, it is not guaranteed that quiet quitting will lead to increased productivity. Instead, these benefits depend on how businesses respond to the demand for healthier working cultures. To increase productivity, business have the choice of either setting better boundaries or distributing better pay.¹⁸

Or businesses may choose to persecute ‘quiet quitters’ and continue to promote a hustle culture mentality. To some extent, this has already happened. A recent survey found that 91% of managers have taken some form of action against quiet quitters, including taking steps to terminate them or deny them promotions or raises.¹⁹ Only 35% of managers are ok with employees just doing enough to meet expectations.²⁰ This indicates that most managers have not yet understood employees concerns.

These harsher consequences may cause workers to disengage even more, leading to a downward spiral of productivity. A better option would be to directly address the controllable causes of ‘quiet quitting’: inadequate wages and poor working boundaries (the third cause, economic slowdown, is not within a company’s control).

Hopefully, this recognition of individual’s rights to financial security and mental wellbeing will translate into a better future of work for all.

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Central Banking Digital Currencies: For Better or for Worse?

Max McLachlan

Central Banking Digital Currencies (CBDCs) are an emerging form of cryptographic technology, issued by a nation's monetary authority with the primary aim of improving the usability and traceability of fiat currency. A CBDC is technically classified as a cryptocurrency, however it has extreme differences to standard cryptocurrencies such as Bitcoin and Ethereum. This is because a CBDC is pegged to the nation's currency, meaning it is simply a digital dollar. As such, a range of countries have announced future plans for the establishment of a CBDC, including China, the United States, Australia and nearly every established country. This makes CBDCs an inevitability that very few are aware about. However, CBDCs are a fundamentally important technology that will shape the use of money over the coming decades and it is important to analyse both the drawbacks and benefits of this innovation.

In order to fully understand CBDCs it is important to understand the basics of a blockchain. CBDCs use blockchain technology as they are built on top of a digital ledger, which is either distributed or not. Essentially, distributed ledgers refer to a situation whereby thousands of random individuals are running software which processes transactions on a blockchain in return for a monetary reward. Transactions on a blockchain include a range of things such as sending currency, purchasing items, lending money and more. The people running software will confirm that these transactions are correct and once confirmed a block will be added to the chain. This block will be forever immortalized in the chain and anyone will be able to view the nature of the transaction made. In the case of distributed ledger technology, this allows individuals to make transactions in a fully decentralized manner, as the intermediary in these transactions happens to be thousands of unconnected people processing the transaction, without the power to individually censor that transaction. This is the exact technology which blockchains such as the Ethereum network and the Bitcoin network use. However, CBDCs could also be built on top of digital ledgers. The only difference here is that the central bank could be the sole entity processing transactions and have complete control over the blockchain, introducing extreme centralization. This differs from digital money today as the central bank is still adding blocks to a chain and will therefore still behold the ability to view every transaction being conducted on the blockchain.

Some banks have already constructed CBDCs on top of distributed ledgers, such as Ukraine who established a CBDC on top of the Algorand network. This affords the Ukraine complete control over the issuing and censoring of their currency, however, publishes all transactions on the Algorand network, allowing for optimal transparency. However, the majority of central banks are unsurprisingly seeking to employ digital ledger technology when developing CBDCs. This will essentially allow central banks to be the sole viewer of the transactions they publish to their blockchain. As such, this allows central banks complete control over the country's monetary supply and is likely the most appealing aspect of CBDCs for these central banks.

Inherently, central banks already have a high degree of control over a country's currency and this is necessary to ensure that the central banks can function correctly. However, many oppose CBDCs as it seems to grant the government an entirely new level of control. Our currency is gradually becoming cashless and I believe that CBDCs are likely to solidify the end of cash in the coming decades. As such, the government will be able to use blockchain technology to view every single transaction that occurs in an economy and who conducted that transaction. Of course, this yields some benefits as this increased surveillance will enable improved criminal detection. However, this overwhelmingly feels dystopic and rids individuals of their privacy completely. Thus, the idea of the government having absolute control over the monetary supply is unsettling at best and if this power is misused the consequences will likely be dire. In fact, regardless of the fact that CBDCs rely heavily on cryptographic technology they are generally perceived as the antithesis of cryptocurrency due to the fact that CBDCs grant centralized entities a significant degree of control.

Regardless of the negatives, CBDCs will still yield positive benefits for countries and individuals. The Federal Reserve Bank of Boston's research into CBDCs found that CBDCs will likely process an extremely high number of transactions in a brief period of time, yielding technological benefits. In fact, these faster and cheaper payments may even increase financial inclusion in an economy, assisting lower income households. Moreover, CBDCs would allow the central bank to have a real time view of the exact monetary supply, assisting key decisions such



as the manipulation of interest rates. Hence, this is why the United States of America's Federal Reserve Bank and more banks are looking CBDCs. Further, CBDCs facilitate the use of blockchain of technology, an emerging industry that will increase financial inclusion for the masses. Currently, the majority of blockchain networks utilize smart contracts, allowing applications to be built on top of these blockchains. For example, the Ethereum network has applications on top of it that allow individuals lend money, borrow money, purchase digital items and more. However, using the Ethereum network is highly complicated and inaccessible to the masses. CBDCs will be able to be directly transferred from a bank and reissued on the Ethereum network, something not possible currently, and individuals will easily be able to use applications on the network.

Thus, CBDCs do yield a wide range of benefits for society.

As such, it is clear that there are a range of positives and negatives to CBDCs; However, CBDCs are inevitable. China is expecting to have their own CBDC established in the next few years and they are expecting to move to a cashless society in the next few decades and it is likely that every country will eventually follow suit. Further, we will not struggle to adapt to this change as CBDCs will covertly replace the money we currently have in banks and there will be no need to even understand what a CBDC is. Thus, for better or for worse, CBDCs will become the sole form of money going into the future and it is important to be aware of this impending change.

‘Our currency is gradually becoming cashless and I believe that CBDC’s are likely to solidify the end of cash in the coming decades.’

