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The American and Australian fiscal responses to COVID-19
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A tale of two wage subsidies: The American and Australian fiscal responses to COVID-19*

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Abstract

Australia suppressed the virus with swift and strong public health measures including stringent border controls. As of July 2020, the virus continues to spread uncontrolled across the US, resulting in the most recorded cases and deaths of any country. Both countries instituted widespread lock-downs and similarly generous fiscal support, yet Australia has experienced a far milder recession, highlighting the critical role of public health measures in protecting the economy. The role of broad cash stimulus necessarily has been more limited than in an ordinary recession, justifying the use of wage subsidies that encourage businesses to retain workers. The Australian wage subsidy, delivered via the tax authority, was better targeted, more generous, more accessible, but slower to deliver liquidity than the American wage subsidy delivered via private banks. The experience highlights the critical need for significant investments in IRS infrastructure to better prepare for future crises.

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1. Introduction

As of July 2020, almost six million people are confirmed to have had COVID-19, leading to more than half a million deaths. In addition to sparking the greatest public health crisis in more than a century, the pandemic has precipitated the greatest economic crisis since the Great Depression. The scale, speed and unusual nature of the crisis have led the governments of the world to formulate novel fiscal responses in record time. Economic conditions are consistently dire, but the responses differ wildly. I compare two starkly divergent cases, the US and Australia, with a particular focus on the wage subsidies that were the cornerstones of both responses.

Despite their earliest confirmed cases occurring at the same time and the virus spreading at the same pace for the first few weeks, the US and Australia have had very different pandemics. While Australia suppressed the virus with preemptive, comprehensive and durable public health measures including tight border controls, the virus continues to spread seemingly unabated across the US. Even in per-capita terms, the current rate of new daily infections in the US is an order of magnitude greater than that in Australia at its peak. Despite perhaps an even more stringent lock-down, the Australian economy has fared far better through the crisis (though it has still experienced quite a deep recession by historical standards). An important lesson from this comparison is that the best measures to suppress the virus also serve as the best measures to protect the economy from its ill effects.

But as shown in Australia, even with an effective public health response, the lock-downs and social distancing measures take a sledgehammer to the economy. The direct effects on economic activity are uneven and can be undone by no amount of cash stimulus. The measures inevitably punch a hole in the revenues of millions of businesses, which if not addressed would lead to millions of lost businesses and jobs and scar the economy for years to come. These risks were not insurable, and many businesses lack the access to credit necessary to weather even a brief storm. The case for direct business support designed in a way that encourages businesses to retain workers and maintain their pay is justified by the unusual nature of the economic shock.

Accordingly, wage subsidy schemes formed the central planks of both the American and Australian fiscal responses to the crisis. While the governments of the two countries designed their schemes with the same ends in mind, their means differed substantially. This mainly reflects the different institutions in the two countries. The Australian government

implemented an explicit, fixed per-worker wage subsidy for all employees of businesses experiencing more than a threshold expected drop in revenues. The program was implemented via the national tax authority. The US government implemented an implicit wage subsidy linked to total payroll only for small businesses but irrespective of the impact of the crisis on their revenues. The program was implemented via forgivable loans distributed through the private banking system. These two schemes very much reflect the natures of the countries in which they were designed.

By running through the banking system, the American program had the advantage of offering liquidity at speed. But it was hamstrung by Congress, being knowingly underfunded from the start, which delayed critical support from reaching millions of businesses until months after the lock-downs began. By running through the tax system, the Australian scheme was slower to roll out, but the implementation was clean and simple, with fewer barriers to eligible businesses gaining access. The Australian subsidy was much more tightly targeted, but more generous to those that were eligible; the American subsidy went to many businesses that didn't need it, but many that received it didn't receive enough. Both schemes were insufficiently flexible to respond to changes in the economic outlook: the American scheme ended too soon, and the Australian scheme will go on too long.

The limitations of the two programs are also functions of the countries in which they were designed. In many ways, this crisis has laid bare the anemia of American state capacity. Fundamentally, the US government could not deliver the world-class fiscal response that the country needed in part because the IRS lacks the world-class infrastructure to implement it. The IRS has been starved of funding for years. Even many of its core functions have atrophied. But to prepare for a future crisis—even just to allow it to perform its role in ordinary times—an unprecedented investment in the IRS, especially in the modernization of its electronic reporting systems, is essential. Far poorer countries do a far better job.

2. Despite the same starting point, two very different curves

The US has so far experienced 3 million cases of COVID-19 causing more than 130,000 deaths, while Australia has experienced fewer than 9,000 cases causing 106 deaths. The US is around 13 times more populous than Australia, so even in per-capita terms the US experience dwarfs that of Australia by orders of magnitude. Nor does testing explain the difference—to date, both countries have tested around 10 per cent of their populations.

Figure 1 demonstrates the stark difference in the spread of the virus between the two countries. Each offers a startling potential counterfactual for the other. Australia suppressed the virus and, with the national border closed to all but those returning, has refocused its public health efforts on snuffing out isolated outbreaks. The US, on the other hand, never got on top of the virus, with just a brief plateau in new cases that was more than three times higher in per-capita terms than Australia's peak. And by mid-June, the rapid spread had resumed.

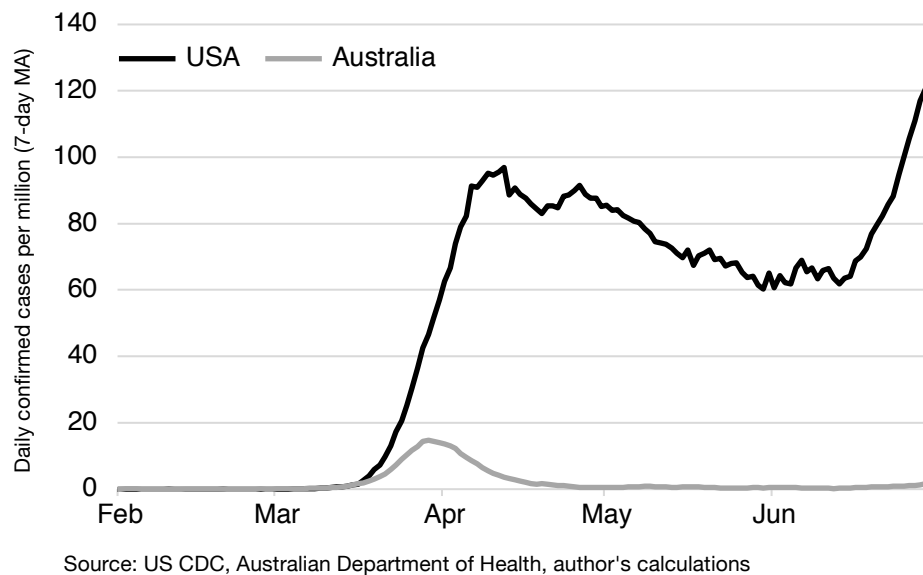


Figure 1: Daily confirmed COVID-19 cases per million, US vs Australia

While the two countries have ended up in very different places, they initially moved in lock-step. The virus originated in Wuhan, China in December 2019, but rapidly spread across the world from the start of 2020. Australia's proximity and close ties to China made it particularly vulnerable to the initial spread. China accounts for the second-largest share (16%) of all permanent migrant flows into Australia (ABS, 2020c) and the second-largest share (15%) of all international visitor arrivals (ABS, 2020d). Meanwhile, Chinese visitors make up less than 4% of visitor arrivals in the US (NTTO, 2020).

Figure 2 is a timeline enabling a comparison of progress in the two countries. The first US case—a recent visitor to China who had returned to Washington state—was confirmed on January 21. The first Australian case, confirmed on January 25, was a visitor from Wuhan who had flown into Melbourne on January 19. The virus then spread gradually in the two countries (see Figure 3).

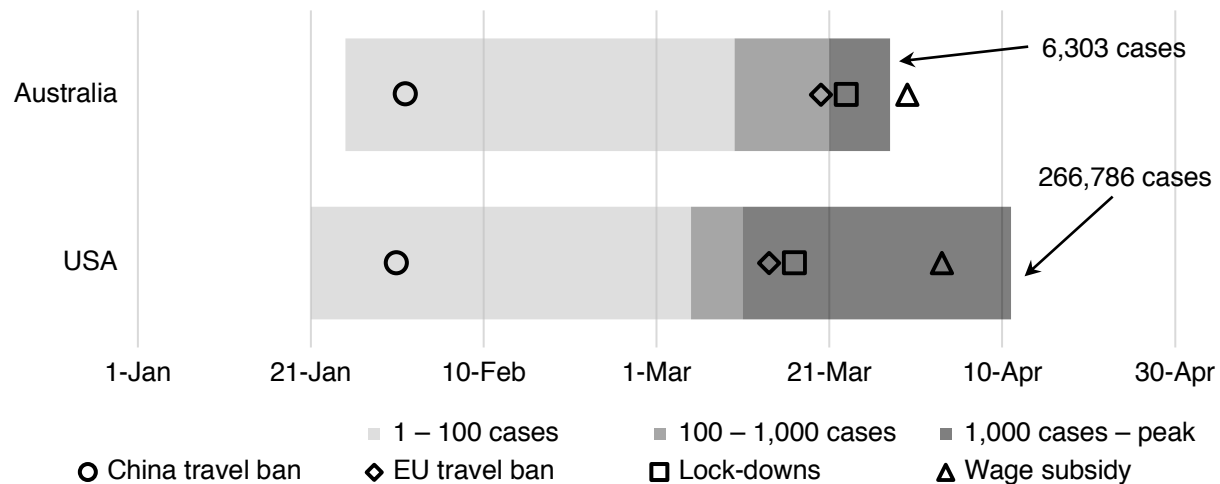


Figure 2: Timeline of COVID-19 progression, US vs Australia

From January 31, US President Donald Trump blocked entry to the US by those who had been in China in the last 14 days. Soon after, Australia announced it would block entry from February 1. From their first confirmed cases, the two countries took a similar time to reach 100 confirmed cases: the US on March 4 and Australia on March 10.

From there, the two countries diverged starkly (see Figure 3). The US reached 1,000 confirmed cases just a week after its 100th case; Australia took almost two weeks to reach the same milestone. During late March, Australia took comprehensive action to halt the spread. The national borders were closed to anyone but those returning, who were required to quarantine in designated hotels for two weeks, a practice that continues. State borders were also closed with a two-week quarantine for returning residents. Extreme lock-down and social distancing orders rolled out rapidly and uniformly across the country.

The combined forces of all of these measures led the spread of the virus to peak on March 29, and by the end of April the virus had been all-but-suppressed. Governments were reluctant to ease travel restrictions, lock-downs and social-distancing measures. Through May and June, as new cases were mostly confined to those returning from abroad, much of everyday Australian life began to return to normal. But even in early July, many social distancing restrictions remained in place with several state borders still closed, and the Prime Minister signaled the national border would remain closed to visitors until mid-2021.

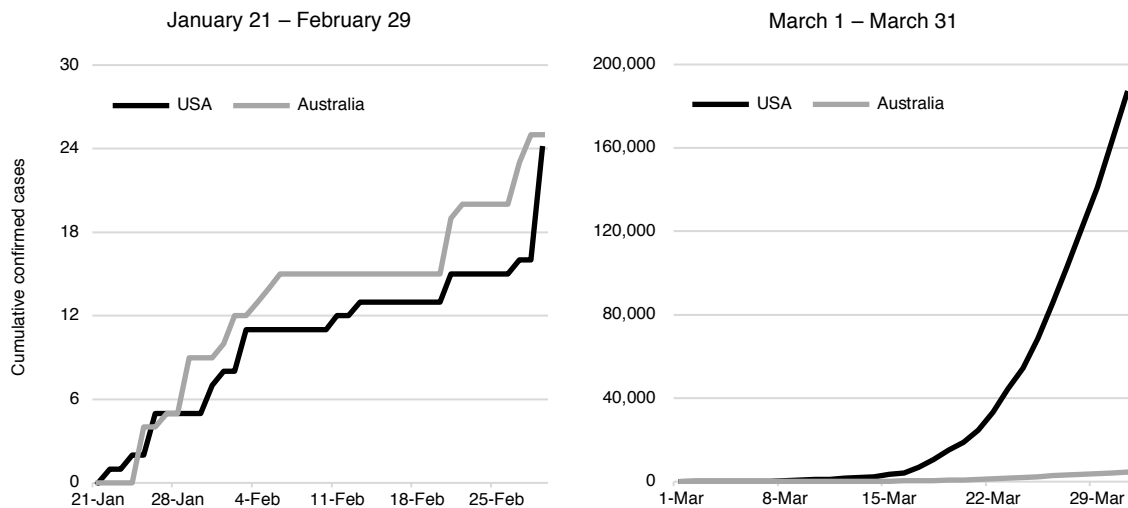


Figure 3: Early COVID-19 progression, US vs Australia

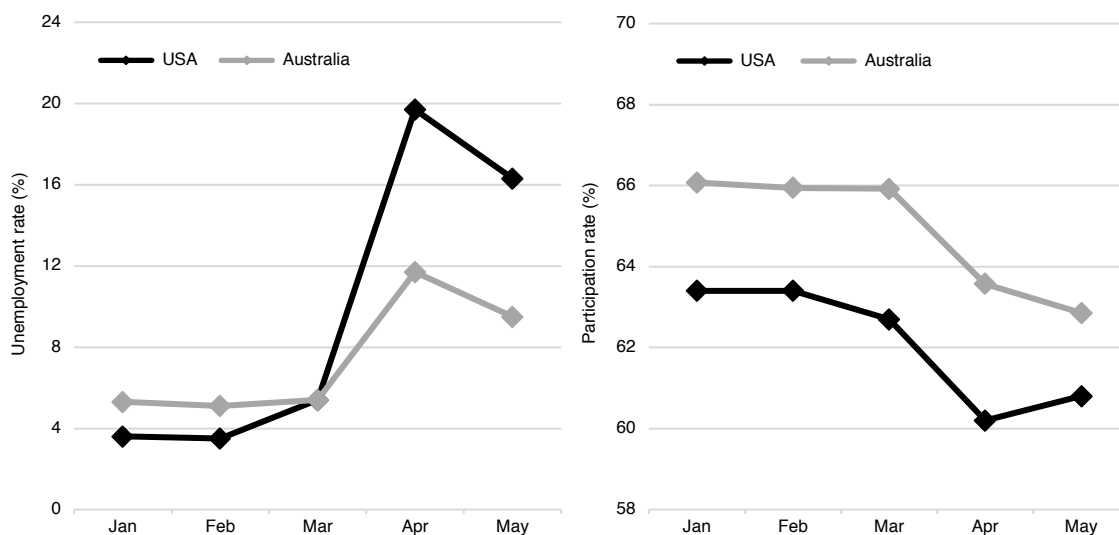
The US, on the other hand, failed to suppress the virus. The national borders, the key vector for the contagion, were not adequately controlled, with no testing or quarantining of those entering the country, including Americans returning home from a virus-ravaged Europe. State borders remained open. National lock-downs rolled out slowly, and only after more than 10,000 cases had already been confirmed.

The US government watched European governments struggle to contain the virus and manage its fallout, yet failed to learn the lessons that could avert a similar catastrophe at home. The Australian government didn't allow that mistake to be made twice, acting swiftly in the second half of March as conditions in the US rapidly deteriorated but before the virus got out of hand. As shown in Figure 2, the Australian travel restrictions and lock-downs lagged behind the US on the calendar, but occurred earlier in the spread of the virus.

Experience in the two countries makes clear that by far the best weapon we have to fight the COVID-19 economic crisis is to effectively manage the COVID-19 public health crisis. Monthly unemployment and participation rates for the US and Australia are displayed in Figure 4. The unemployment rate rose roughly twice as much in the US as in Australia. This is despite the participation rates in the two countries following a similar trajectory.

If anything, Australia had even more draconian lock-down measures than the US. As I detail later, from March both countries offered similar fiscal support for businesses tied to retaining workers, and generous supplementary unemployment insurance benefits. While differences in the lock-downs and fiscal support might explain some of the gap, they seem unlikely to be

the principal drivers. More likely is that the much more extreme spread of the virus drove a much more extreme economic contraction, perhaps due to a larger resultant voluntary contraction in demand or pessimism about the outlook.



Source: ABS, BLS, author's calculations. US unemployment figures are corrected for a misclassification problem and Australian unemployment figures are corrected to include those furloughed; see BLS (2020) and ABS (2020b).

Figure 4: Unemployment and participation rates in 2020, US vs Australia

3. The unusual economics of COVID-19 justify unusual fiscal responses

Irrespective of the failure or otherwise to manage the public health crisis, in both countries the combined forces of mandatory and voluntary social distancing led to an unprecedented collapse in demand, spurring unprecedented government action. Not only in terms of scale, but also design. Despite very different means, the two governments responded to this unusual crisis with the same goal in mind.

In an ordinary recession, broad cash stimulus can be dispatched to arrest the vicious cycle of falling demand causing layoffs causing falling demand and so on. If the economy's plumbing is functional, that cash can flow to where it is needed through the ordinary course of trade and commerce. The effectiveness of broad cash stimulus was a valuable lesson of the Great Recession.

In that environment, there is no clear need for the government to support businesses directly because cash stimulus serves to support businesses and their employees indirectly. But the

COVID-19 crisis has clogged the economy's plumbing. The first-round effects of social distancing measures on economic activity in certain sectors cannot be offset by fiscal stimulus—that activity is impossible. Some other sectors aren't affected directly, while others in fact experience a surge in demand causing shortages and price rises, and an increase in employment.

But for those firms initially spared from the demand contraction, the reprieve is short-lived. As the directly affected workers and business owners lose income, they reduce spending on goods and services across the whole economy, including in sectors not directly affected. Workers are then shed in those sectors too, and away the vicious cycle goes (Guerrieri et al., 2020).

Because the voluntary and mandatory reductions in demand are unevenly spread across the economy, conventional broad cash stimulus will find its way back to some businesses and workers but not others. The clogged plumbing limits the ability of cash stimulus to arrest the downward spiral. Unlike in a normal recession, the only way to help the directly affected businesses and their employees is with direct support.

But should we support them? Another unusual feature of this crisis is the very sharp but temporary nature of the economic contraction. The first phase of full-scale lock-downs lasted less than three months in both the US and Australia. So long as progress can be made on a vaccine, which seems promising, all constraints on businesses might lift within 12–18 months.

Given the temporary nature of the crisis, there is no clear reason why after the crisis much of the supply side of the economy should not return to its pre-crisis state. Many businesses that were viable before can be viable after. But because of imperfect insurance and credit markets, many otherwise-viable businesses will simply be unable to bridge the gap in revenues generated by the temporary contraction in demand. Liquidity will help, of course, but it won't be enough to save many businesses that will deem the resultant debt too great a burden to carry forward.

There will no doubt be some permanent changes in demand that will necessitate permanent changes in supply. And some businesses that were unviable before the crisis may be pushed over the edge. Such Schumpeterian creative destruction is one of the few silver linings of a recession. These are important considerations favoring some restraint in fiscal support of businesses.

But there is much at stake. While many larger businesses could continue to operate as they are reorganized or their capital redeployed in other businesses, many small, otherwise-viable businesses would be dissolved. And on an unprecedented scale. These small businesses might otherwise have grown into larger businesses, spurred innovation and contributed to job and productivity growth (Decker et al., 2014). And these losses can permanently scar the economy. The businesses lost during the Great Recession, for example, left a persistent dent in employment (Sedláček, 2020).

Much of the capital held by these businesses is firm-specific and thus non-transferable. The matches between firms and their customers, suppliers and employees would be dissolved. Many unique products would go away. Much of the learning-by-doing that is specific to each business would disappear. If we believe the value of all of this capital at stake exceeds the deadweight losses due to the taxes and subsidies necessary to save it, then we should provide the necessary fiscal support.

If provided in a way that encourages businesses to retain their workers (Bishop and Bartik, 2009), subsidies can have strong macroeconomic benefits too. Preventing directly affected businesses from shedding workers and encouraging them to maintain wages could help arrest the downward spiral that could precipitate a very deep and long recession. Those workers would then be prevented from entering an already over-burdened unemployment insurance (UI) system buckling under the weight of tens of millions of claims. And in preserving the productive capacity of the economy, it could ensure a speedier transition to a steeper long-run growth trajectory.

4. Similar policy goals but very different means

While the contagion progressed very differently in the US and Australia through March (from 28 to 4,561 cases in Australia, and from 30 to 186,101 cases in the US), both countries experienced large economic contractions during that time. The first American states began to lock down on March 17, and Australia followed around a week later though more uniformly across the country.

The lock-downs wreaked havoc on businesses in both countries. As of mid-March, half of Australian businesses reported they were being impacted by COVID-19, while almost all expected to be impacted in future months (ABS, 2020a). By the end of March, almost half of American small businesses were closed (Bartik, et al., 2020). In response, governments in both

countries formulated fiscal responses with significant direct business support at their core. Both responses were initially too modest and were later expanded under duress as the scale of the crisis resolved.

Some differences between the approaches taken in the US and Australia stem from the scope of executive authority in the two countries. Australia's system of government combines the executive and legislative branches, much like the Westminster system in the UK—the chief executive is also a member of parliament commanding the confidence of its majority. In a time of majority government, as is typical in Australia, the government can take for granted the support of the House of Representatives. That leaves only the Senate, where the government typically needs only secure the support of a limited number of independent or third-party Senators to pass legislation.

Ordinarily there is simply less friction slowing the passage of legislation, which affects its substance as well as its speed. But in these extraordinary times, the opposition voted with the government to grant it extraordinary powers to independently configure the fiscal response. Much of the response was specified only in very general terms in legislation voted on in parliament, with the details relegated to legislative instruments requiring the approval only of the Treasurer (equivalent to the US Treasury Secretary).

4.1 Support for Australian businesses

On March 12, the Australian government announced an initial stimulus package totaling AU\$17.6 billion (0.85% of GDP). It included AU\$750 (~US\$525) stimulus checks to the 25% of the population receiving government assistance, and businesses with up to AU\$500 million in annual revenue would be allowed to retain 50% of their personal income tax withholdings, capped at AU\$25,000.

Just 10 days later, the government provided a further AU\$25.2 billion of funding that would see businesses retain 100% of tax withheld up to AU\$100,000. The government also announced a UI supplement of AU\$275 per week, an easing of eligibility and work-search requirements, and a waiving of the waiting period. The government at that point was publicly ruling out any further wage support to businesses, despite widespread calls for such a policy (Hamilton and Veuger, 2020).

Just eight days later, on March 30, the government announced the largest single piece of public spending in Australian history: a AU\$130 billion (6.3% of GDP) wage subsidy called “JobKeeper”.¹ JobKeeper would give a qualifying business a flat AU\$750 subsidy per worker per week regardless of whether they were hourly, part-time or full-time, and no matter the wage earned or the hours worked. A participating business must then pay all of its workers at least AU\$750 per week, which is the national minimum wage for full-time workers and around 70 percent of the median wage.

A participating business would receive the subsidy for each of its workers employed on March 1 provided they were retained. Hourly workers employed for less than 12 months and all foreign workers (other than those from New Zealand) were ineligible. Most businesses were eligible if they expected revenue to fall by at least 30% compared to the same period in the previous year.² Some of Australia’s largest businesses qualified, with Qantas receiving around AU\$100 million per month. The self-employed were also eligible.

The payment was locked in for six months. Regardless of what eventuated or whether expectations improved, the subsidy would be paid for the entire period. The subsidy would apply from March 30, but the first payments wouldn’t be received by businesses until the first week of May. To apply, businesses needed to log in to the Australian Taxation Office (ATO) website, make a series of declarations and provide their bank details.

A key technology enabling JobKeeper is “Single Touch Payroll” (STP), an electronic payroll reporting system the ATO introduced in recent years. Rather than transmitting an annual payment summary (equivalent to a W-2), payroll information is electronically transmitted via the business’ accounting software whenever a worker is paid. Employees can then immediately access the transmitted information through an online portal.

The ATO could use the STP system to verify: the number of workers on payroll at March 30; whether an employee is an hourly worker and if so whether they had been with the business for at least 12 months; that the businesses are paying the required amount to all of their eligible employees; etc. The payroll data collected through STP is also regularly reported to

¹ Several months later, the government downwardly revised this initial cost estimate to AU\$70 billion (3.5% of GDP), saying the initial estimate was based on take-up under the “worst-case scenario”.

² For businesses with more than \$1 billion in annual revenue, the expected revenue decline threshold was 50%, and for all not-for-profits it was 15%.

the Australian Bureau of Statistics, enabling the weekly public release of detailed payroll statistics, which have served as valuable real-time economic indicators.

In the end, just over half of all Australian businesses received the JobKeeper subsidy, supporting around a quarter of all Australian jobs (ABS, 2020a; Australian Treasury, 2020).

4.2 Support for American businesses

The US government also rolled out its fiscal support in stages through March. The first phase, passed on March 6, included a series of public health measures totaling \$8.3 billion. The second phase, passed on March 18, focused on paid sick leave and expanded unemployment benefits totaling \$104 billion.

The first significant fiscal support, totaling \$1.8 trillion (8.8% of GDP), came with the passage of the Coronavirus Aid, Relief, and Economic Security (CARES) Act on March 27. The CARES Act included \$1,200 stimulus payments to much of the population as well as expanded UI payments. The package also included a \$349 billion (1.7% of GDP) small business support package called the “Paycheck Protection Program” (PPP) that would launch on April 3.

Administered by the Small Business Administration (SBA), the PPP was a subsidized small business loan program that provided support to small businesses on the condition they retain workers and maintain payroll. The PPP was open to businesses with 500 or fewer employees, larger businesses in certain sectors, and the self-employed. The program covered roughly half the American workforce.

Under the program, the SBA guarantees loans made by financial institutions to eligible recipients. To be eligible, an applicant had to certify that “current economic uncertainty makes this loan request necessary to support the ongoing operations of the applicant.” The loan amount was limited to two and a half months of the recipient’s prior-year payroll costs (excluding any annual per-employee compensation in excess of \$100,000) capped at \$10 million. The loans have a term of five years and an interest rate of 1%.

The key feature of the PPP was that the loans will be forgiven under certain conditions. The recipient must spend at least 60% on payroll costs and the remainder only on interest, rent, and utilities, all over a 24-week period. The proportion forgiven is equal to the proportion of full-time equivalent employees retained. Any salary reductions in excess of 25% are deducted

from the forgiven amount. By compensating businesses for payroll costs on the condition they retain workers and maintain their pay, a PPP loan is an implicit wage subsidy.

On April 16, less than two weeks after the program commenced, the initial \$349 billion in funding was exhausted. On April 24, an additional \$310 billion in funding was added, which became available to applicants from April 27. The program was amended again on June 5 in response to criticisms of a lack of flexibility around the use of the loans. After the program closed, \$130 billion in funds remained unused. This means to date the program has cost \$529 billion (2.6% of GDP). In the end, almost three quarters of American small businesses, which account for almost half of all American jobs, have received support under the PPP (US Census Bureau, 2020).

Alongside the PPP, the CARES Act introduced another, less well-known explicit wage subsidy called the “Employee Retention Credit” (ERC). An alternative to the PPP, the ERC was a refundable tax credit equal to 50% of wages up to \$10,000 per employee paid between March 12 and the end of the calendar year. To be eligible, a business must have either been ordered to shut down or experienced at least a 50% decline in revenues.

To receive funds immediately, businesses could draw on their federal income tax withholdings or payroll tax contributions. Where these were insufficient to fund the credit, employers could apply to the IRS for an advance. Unlike the PPP, the program applied to businesses of all sizes. But businesses with more than 100 employees only received the ERC for those employees not actively working. The ERC was also fairly modest, providing up to \$5,000 per employee compared to up to \$20,833 per employee under the PPP.

The CARES Act also set aside \$10 billion to fund an immediate \$10,000 advance to small businesses applying for an Economic Injury Disaster Loan (EIDL) through the SBA that they would not have to repay.

4.3 Dueling wage subsidies

The American and Australian governments spent similar amounts to support similar proportions of businesses and jobs, but with very different implementation details. Neither country’s program would have been feasible in the other country using existing infrastructure, which explains many of the design differences. Each has advantages and disadvantages, and an ideal scheme would adopt features from both.

The PPP provided funding via private banks, which have the infrastructure necessary to distribute the funds widely and quickly. This speed was an important advantage—PPP loans became available just one week after the CARES Act became law. Despite some teething issues with the initial rollout, \$349 billion in loans were made in just 13 days. Liquidity is a critical concern for small businesses in particular—in the US, less than half of small businesses have more than two weeks of cash on hand (Farrell, et al., 2018). But this rapid delivery was hamstrung by a lack of initial funding. The delay in second-round funding withheld support from two million small businesses for more than six weeks after the lock-downs began, affecting their cash on hand and outlook (US Census Bureau, 2020).

Because the JobKeeper program was implemented by the ATO, which had never administered anything like it before, there was a 4–5-week delay from announcement to initial payment. The ATO couldn't leverage existing infrastructure because Australia doesn't have federal payroll or social security taxes. Non-corporates aren't in the corporate tax system; the VAT system is isolated from payroll; and the personal income tax withholding system is set up to take money in from businesses, not push it out to them. There were reports of businesses having difficulty securing loans to cover the shortfall while they waited for the funds. In administering the PPP, the SBA could piggyback on its existing systems, enabling a much faster rollout.

But the delivery of the PPP via banks also rationed access to the program. Many businesses simply don't have a relationship with a bank, with only 44% of American small businesses having taken out a loan in the past five years (Federal Reserve System, 2020). And many banks restricted PPP loans to their existing customers. Most of the first-round funding under the PPP went to large businesses that are more likely to have an established banking relationship. As intermediaries, the banks played the role of gatekeeper (Granja et al., 2020). The intensity of PPP lending varied widely across banks, and if a business was lucky enough to be located near a bank processing a high volume of PPP loans relative to other kinds of loans, it was much more likely to obtain a loan.

In paying out just 2.5 months' payroll initially over eight weeks, the PPP was geared towards a sharp but short pause in activity. The design took for granted an effective public health response. But given the reality of the response, with the spread of the virus and lock-downs lasting far longer than expected, the PPP will be inadequate for many businesses. The opposite is true in Australia. Because the crisis eased more quickly than expected, JobKeeper will oversubsidize some businesses for which the fall in revenue is smaller or shorter than

expected. The fixed duration of support means the program will cost more than it could have and discourage the reallocation of economic resources for longer than was necessary. Both programs lacked the flexibility to respond to changing conditions, just in opposite directions.

The scale and scope of the two programs is a key point of divergence. The Australian government chose to apply the subsidy to businesses of all sizes but with eligibility based on the expected fall in revenue. The US government chose to apply the subsidy only to small businesses but with much broader eligibility, limiting it only to firms willing to declare that current uncertainty made the funding necessary.

This lack of targeting inevitably means some of the funds will have gone to inframarginal businesses. Both programs distributed funds of 2.5–3.5% of GDP. The Australian program provided support to around half of all businesses, and the American program to almost three quarters. The benefit of restricting funding to a smaller set of firms is that with a similar budget you can provide more generous support. The Australian program provides an average per-worker subsidy of around US\$13,500, whereas the American program provides an average per-worker subsidy of only around US\$9,500.

The tighter targeting of the Australian program is borne out in the results of surveys conducted by the two countries' statistical agencies in May, presented in Figure 5. Roughly 15% of Australian businesses that experienced some decline in revenue didn't receive a wage subsidy, yet some American businesses that didn't have any decline in revenue did receive a wage subsidy.

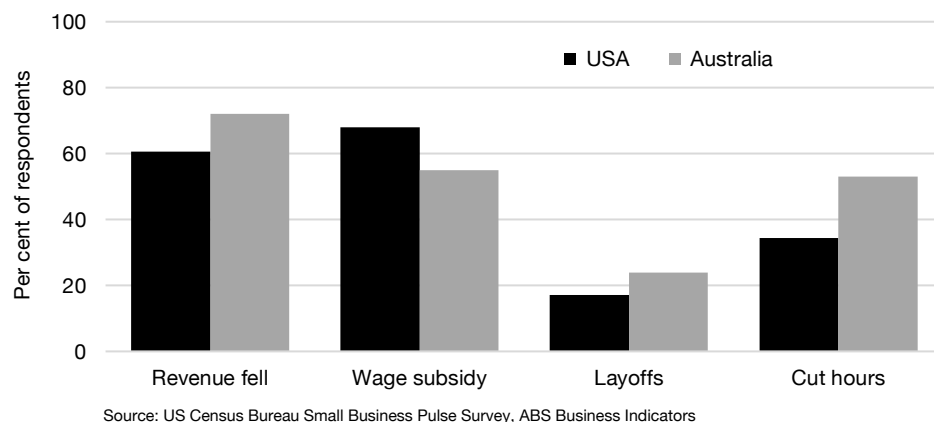


Figure 5: COVID-19 business survey, May 2020, US vs Australia

The subsidy base is another key distinction. The American program was far more flexible in covering all of payroll subject to reasonable per-person and total caps, and it also allowed businesses to cover some non-payroll costs. The Australian program was far more restrictive in paying a fixed amount per worker regardless of their hours or wages, and introducing a wage floor. This undercompensates businesses for their higher earners, and the wage floor prevents them from being overcompensated for their lower earners. This will inevitably result in the loss of more businesses than if the program had simply covered payroll as under the US design. And the flat subsidy is no easier to implement given the STP reporting system.

It is too early to offer a formal empirical assessment of the efficacy of the two programs, in terms of either businesses or jobs saved. The evidence so far does not establish a credible causal link.³ Despite somewhat stronger restrictions, the economic contraction has been significantly milder in Australia, but it is difficult to separate the effect of the fiscal support from that of more effective public health measures.

As shown in Figure 5, a greater proportion of Australian businesses reported having laid off workers and cut hours. One possible source of this difference is that Australian businesses did not receive wage subsidies for their short-term hourly or foreign employees, unlike American businesses. These people make up around 15% of the Australian workforce, so the effect could be substantial. Another possibility is that more adverse economic conditions made it more likely for American businesses to close permanently and thus drop out of the sample, with average layoffs and hours reductions lower among those that remained.

5. A lesson from the crisis for the future

The two wage subsidies both have advantages and disadvantages. The PPP offered the potential for immediacy, while JobKeeper is far simpler. The PPP loan forgiveness process is yet to commence, but is sure to be fraught. The PPP was insufficiently targeted, but inadequate for many that received it. JobKeeper better targeted those in need, but will likely

³ Chetty et al. (2020) present evidence that employment fell just as much among smaller firms as among larger firms. But in the absence of the PPP, employment reductions due to COVID-19 are likely to differ by firm size. If we expected small businesses to be harder hit, but with PPP they were no harder hit, the program might in fact be rightly viewed as successful. Moreover, the ERC was available only to firms that did not receive the PPP, so disproportionately went to larger firms, which could confound any difference in the effect of the PPP by firm size. Humphries et al. (2020) offer evidence that, among those who applied for a PPP, those who received funding had better outcomes. But among applicants, approval is not randomly assigned, with the approved potentially differing from the rejected in the absence of approval.

give support to some businesses long after it's required. And it more poorly matched the actual costs businesses need to cover. Both programs lacked flexibility, being incapable of responding to changes in the economic outlook, but in opposite directions.

Ultimately, neither scheme quite measures up to what a modern, developed nation with strong state capacity should be capable of delivering. The Employee Retention Credit showed promise—a targeted wage subsidy administered by the IRS and open to every affected business in America. But to address short-term liquidity, the IRS expected businesses in the first instance to draw on their tax withholdings to fund the subsidy, which tightly caps available liquidity. If a business wanted an advance, they had to fill out and submit a form to the IRS. It would have been impractical to manage a very large volume of such requests.

The IRS is arguably the largest financial institution in the world, collecting more than \$3 trillion in revenue each year from hundreds of millions of people and businesses. Through under- and over-withholding, the IRS makes and takes out hundreds of millions of short-term loans every year. The IRS holds the banking and other details of all of its clients. With the right infrastructure, the IRS is uniquely suited to implementing a large-scale wage subsidy program and providing immediate liquidity to American businesses.

Ideally, the IRS would have switched business tax withholding (which is implicit saving) into reverse, paying every small business 2.5 months of prior-year payroll up front (which is implicit lending). The IRS would then have assessed the forgiveness terms—worker retention and pay—over the relevant 8-week period. Any non-forgiveness could be reconciled at tax time—the amount not used for payroll could simply be taxed back through the ordinary business tax filing process.

In principle, this is what the SBA did with the PPP, just via the banks as middle men. But the unique role of the IRS is not merely a matter of efficiency in administration, important as that is. A key difference between the private banks or the SBA and the IRS is that the latter is far better placed to overcome the information asymmetries that make it difficult to assess loan forgiveness. Much of this information is related to the standard tax collection activities of the IRS. And obtaining the necessary information on an ongoing basis would allow the IRS only to better serve its mission. Moreover, the IRS is far better placed to enforce the loan forgiveness terms.

But building this capability will require a massive and sustained investment in IRS infrastructure. The IRS's budget woes as it is are well known. The COVID-19 crisis provides yet another reminder that we must move on from a naïve preoccupation with starving the beast toward a pragmatic advocacy of investment in state capacity.

In many other countries—as in Australia—payroll information for every employee in the country is transmitted to the tax authority in real time. The IRS should develop this capability. In the long run, this investment will pay dividends by expanding its capacity to collect revenue (enabling *lower* tax rates for a given amount of revenue collected), lowering compliance costs for businesses and taxpayers, and supporting our ability to respond—as any modern, developed nation should be capable of—to future unexpected crises.

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