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### Editorial

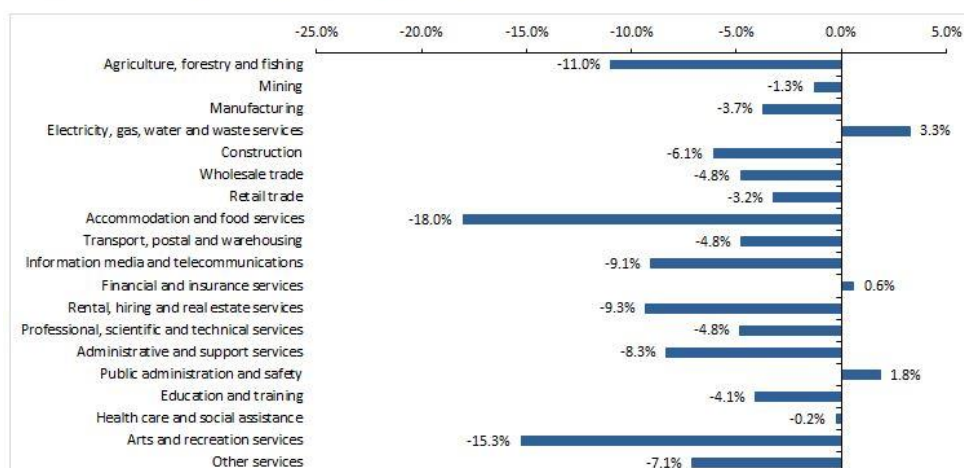
With hindsight, we are all excellent 'shoulda' investors. Looking back during the pandemic, many opportunities look obvious. Retail investors who rely on professional fund managers must hope that late March presented a once-a-decade moment for investment teams to stop watching screens and reading broker reports and contemplate a new future. Did the analysts and portfolio managers hold special meetings beyond the daily grind?

*'OK, everything is sold off, this is our opportunity. People will be working from home, improving their equipment and shopping online. So that's Kogan, JB Hi Fi, Harvey Norman, Officeworks. Woolies and Coles will do well as people cook more. Forget shopping malls but distribution centres are fine. Brazil is in trouble so buy Fortescue and BHP on the back of iron ore prices. Barber shops will close, that's Shaver Shop for home cuts. Check who's got a great online store, anything to do with e-commerce. Super Retail for camping and fixing cars. And everyone will be on social media and searching for stuff, so that's Apple, Google, Facebook.'* Etc, etc.

Is that realistic or only hindsight? It is times like these when talented managers with imagination and knowledge of businesses and trends should earn their fees, plus participate in cheap capital raisings. The 2020 performance of fund managers will show who grasped the opportunities.

The latest [ABS jobs data](#) shows winners and losers by industries. Accommodation and food services down 18.0%, arts and recreation decreased by 15.3%. These jobs and companies will not recover quickly.

Graph 1: Percentage change in payroll jobs by industry between 14 March 2020 and 8 August 2020



On the other side, one big call into e-commerce stocks, as illustrated for the US below, is all it takes for market outperformance.

### E-commerce stocks vs. S&P 500

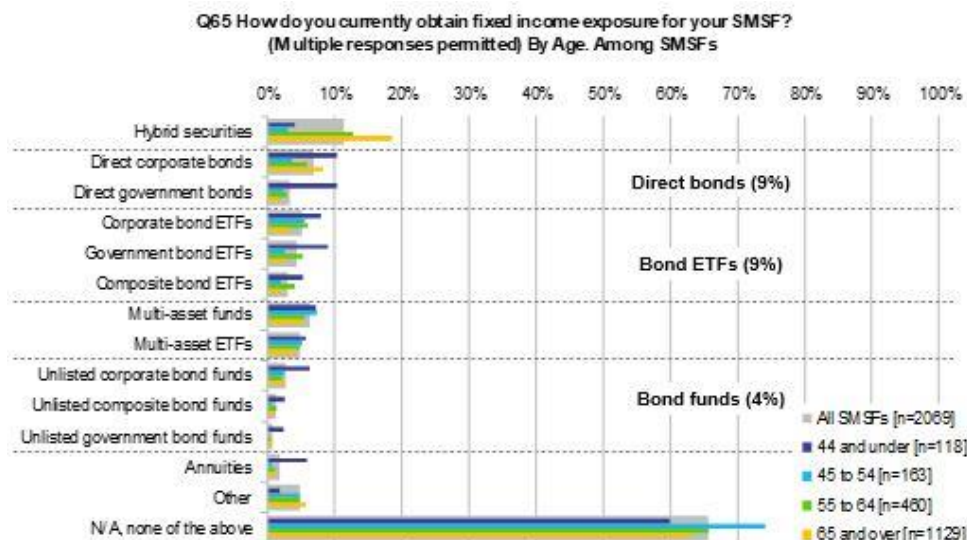


So with COVID-19 dominating our news, investments and personal actions, has the national and international response to closing borders and businesses been correct? **Phil Ruthven's** article will either impress or annoy, as he notes that 52 million people [die of other causes every year](#), so why bring economies to a standstill and lose millions of jobs for another pandemic? We have also extracted a fascinating interview by **Geraldine Doogue** on **ABC Radio** with two expert virologists who describe [how vaccines are actually produced](#), and whether Australia has the capabilities.

Every investor is managing the tradeoff between the desire for income and capital preservation. In an interview, **Will Baylis** describes his approach to the [attraction of equity returns](#) of 6% with franking versus equity volatility. Despite the market rally leaving many stocks fully-priced, **Ned Bell** sees strong opportunities in [small and mid cap \(SMID\) stocks](#), where investors have not jumped on the bandwagon of the big names.

**Deana Mitchell** then explains why many companies have [issued new capital](#) during the pandemic, and she gives examples of three issues that have delivered strong rewards and why she participated.

Bond markets are many times bigger than stock markets, yet receive a fraction of the retail investor focus. All a bit boring? The chart below from **Investment Trends/Vanguard** show even SMSFs, which are used by an older cohort, hold relatively little in fixed interest, and much of that is in the form of hybrids. Bond markets have become distorted as central banks manipulate rates. There is no 'free market price' for government bonds and no genuine risk assessment. This distorts other market prices as many assets price off the risk-free rate, and it helps equities as investors look elsewhere for returns.



With the importance of bonds in mind, **Jonathan Gregory** asks whether prices are heading for a Big Bang, a Big Crunch or a Steady State, with the possibility that [rates may be very low](#) for multiple investment cycles.

On to big picture changes, **Damien Klassen** looks at the investment implications of solar, especially when solar+battery [rewrite the energy cost curve](#). It's new-world technology versus old-world digging up stuff.

This week's White Paper is the letter sent by **Martin Currie** to their major investee companies, as discussed in the Will Baylis interview, emphasising the [importance of paying dividends](#) where possible.

And as **Afterpay** soars above \$90, those who read [my article six weeks ago](#) (now viewed 20,000 times) may be wondering what I did with my investment. Motivated by little more than FOMO, I participated in the \$66 SPP, and now **Morgan Stanley** has its target price to \$106. Spare a thought for those who sold at \$8 on 23 March. Ouch!

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## Will Baylis on dividends and accepting stock market risk

Graham Hand

*Will Baylis is a Portfolio Manager at Martin Currie, a specialist investment manager within the Franklin Templeton Group. He is lead Portfolio Manager for the Equity Income and Sustainable Equity strategies and Co-Portfolio Manager for multi-asset portfolios.*

**GH:** Martin Currie in Australia recently wrote to the chair of every major company in your income portfolios with the message, 'If your company has reasonable cashflows and a sound financial position, dividends should be paid.' What have the reactions been?

**WB:** We've had remarkably positive responses. And in many cases, the chair has taken the time to write a detailed reply rather than just an acknowledgement. One chair of a large company said he had been writing about the importance of dividends since the 1990s. Companies receive up to 20% of their dividends back in reinvestment plans, and if they're worried about cash flow, dividend reinvestment can be underwritten for a small fee.

**GH:** And franking credits are of no value on the company balance sheet.

**WB:** Yes, they're unique to Australia and they belong to shareholders. This chair has always advocated that where companies have the means and reasonable capitalisation, they should pay dividends, but that doesn't mean dividends need to go up every year.

**GH:** Any other feedback?

**WB:** Another company, a large utility, attached our letter to the board papers. They've just announced that because they have a high free cash flow, they will pay special dividends next year. So, we are pleased with the letter and they said it was very timely.

**GH:** Last week, we saw ANZ pay a dividend, although reduced, while Westpac suspended theirs. What's the difference between these banks?

**WB:** Well, ANZ has a high level of capital and they acknowledged that they want to pay dividends, they have different types of shareholders and many rely on the dividends and have done since the GFC when interest rates have fallen from being quite meaningful to zero. Westpac has poorer trends with their bad and doubtful debts and made a balanced decision to hold back the dividend this time.

**GH:** Were you surprised that a company like BHP, which has had the benefit of strong iron ore prices, reduced its dividend a little?

**WB:** We hold BHP and we're happy that they paid a meaningful dividend. Whether it was 10% below or above consensus is not our point. BHP has enjoyed strong iron ore prices, they've got strong free cash flow and they paid what we call a meaningful dividend.

**GH:** Do you think a board should maintain a steady stream of dividends and in good years hold some back in expectation that future years might be a bit leaner?

**WB:** A board should be aware of their capex requirements for maintenance and growth and their operational costs, etc. If they retain more capital than they need, it has to be put to work. They will be measured against their weighted average cost of capital. If there is a poor marginal use of that capital by retaining it, it makes more sense to pay it to the shareholders. Retaining dividends should be linked to a greater or different purpose for that capital.

**GH:** In your income funds, what are you expecting on the income for FY2021 compared with FY2020?

**WB:** At this stage, we're expecting income on our Equity Income Fund to fall about 20% to 30 June this year. That said, the market's income is expected to fall between 30 to 40%. So we've tried to hold companies that have a higher probability of paying dividends with quality characteristics of free cash flow and strong capital positions.

**GH:** And how do you balance capital preservation with generating income?

**WB:** When you manage a strategy for income, you have two main objectives. One is to give dollar income to your investors from dividends and deliver a yield which is higher than the broader market. Our strategy is expected to deliver about 6% including the value of franking credits. So, if we can deliver that, we feel we've done a good job in minimising what we call a drawdown on income.

**GH:** Right, that's the income point of view. Is the capital outcome too difficult to predict in this market?

**WB:** We believe if we have a high-quality portfolio, with companies that have high barriers to entry, high levels of free cash flow, etc, over time it should give a lower level of capital volatility than the broader market. The Equity Income strategy has a beta since inception in 2010 of around 0.9. That is, slightly less volatility than the broader market. Rather than focusing on the total return, which is capital plus income, we find companies with a lower level of income drawdown because we feel we have more control.

**GH:** Given the pandemic has delivered winners and losers, with names like Kogan and Afterpay doing well and Flight Centre and Qantas struggling, have you made changes in the last three to six months?

**WB:** The interesting thing about owning companies in Australia with reliable dividends relative to the market is we tend not to own the Kogans and Afterpays of the world, and even CSL because it has a dividend yield of less than 1%. But we have made changes to reduce the income drawdown. We reduced exposure to energy, because we're worried about the oil price, and we exited Sydney Airport due to the closure of international borders, which we think will be a much more prolonged event than the closure of domestic borders. We've invested in some companies that have benefitted from COVID like JB Hi Fi, Coles, Woolworths and Harvey Norman. The government support and stimulus has helped some companies.

Another thing we did back in March was go through the entire universe to check which companies will have solvency issues and which will have a significant fall in revenue, because we don't want to own those companies in an income portfolio.

**GH:** What have your investors been doing in the last three to six months?

**WB:** The funds under management have been steady, we haven't seen outflows but we haven't seen significant inflows either. CBA recently reported a \$15 billion increase in their term deposits in six months. That tells you that a lot of people are accepting 1% or below. Banks are now funded substantially by their own term deposits and people are holding a lot more cash.

**GH:** Although the equity market has done surprisingly well since March.

**WB:** Yes, but a lot of the big rises have been in a few technology or health names, whereas the companies that we own in our Equity Income portfolio have not done as well because of the level of uncertainty around the outlook.

**GH:** There are many different ways that people manage income funds. Do you use derivatives?

**WB:** Not at all. If you start using call or put option strategies to either boost income, which is basically close to dividend stripping, or alternately trying to protect capital, there's a cost to that. It's like an insurance premium, which has to be paid from the client's return. We focus more on the sustainable dividend with franking credits of each company over time.

**GH:** You recently wrote [an article for Firstlinks](#) on looking through the pandemic for quality companies even if you recognise they might have some short-term problems. How does that work?

**WB:** Look at the example of Transurban. Before COVID, Transurban had a history of growing its distributions by 9% to 10% per annum, but recently, it has reduced dividends markedly because the volume of traffic on its toll roads has collapsed. But we see Transurban as a really high-quality company, the dominant owner of toll roads and exceedingly well run. So we were tolerant in knowing Transurban would reduce its distributions while we are holding it.

**GH:** What about the Australian banks which many people have relied on for income?

**WB:** Well, three of the four banks are still paying a dividend, they all have high capital buffers, we know the banks are vital to the safety and security of the Australian financial system, so again, we hold all four banks in the Equity Income strategy. We're not at index weight and we knew dividends would fall but we're happy to hold them through the crisis.

**GH:** Transurban is an example I often use in presentations. When Sydney's Eastern Distributor opened, the toll was \$3.50 and now it's \$8. That's a lot of money for some people but that's pricing power for an asset drivers want to use.

**WB:** That's true, but to their credit, they've set up a division which focuses on customer hardship. It's a genuine attempt to provide relief for customers who can't afford the tolls.

**GH:** Final question. What do you say to a retiree who wants the income from shares but is worried about capital preservation - the risk/return trade off?

**WB:** I would suggest to your readers that they contrast the risk/return around term deposits with the risk/return of owning a diversified equity portfolio. On term deposits, the capital risk and income return are both close to zero. That will be the case for the next few years but most retirees can't live on a 1% return. Contrast this with say 6% including franking on equity income with a historical volatility of about 11% on the capital. That doesn't mean that every year, investors should net off the 6% yield against an 11% decline in capital. It simply means that over time, the capital value of the portfolio is likely to move up and down by 11% a year on average.

But for investors who can accept the 11% volatility, they still receive the 6% income. So they don't need to drawdown on capital if they have sufficient income and they don't need to worry as much about the implied capital volatility of the portfolio. The income comes in every quarter through the unit trust structure. For many, a 1% return is intolerable and a 6% return with volatility of 11% should be tolerable if they can rely on the income. Investors should think long term and hope to live to a very fine age.

*Graham Hand is Managing Editor of Firstlinks. Will Baylis is a Portfolio Manager for the [Martin Currie Equity Income Fund](#). Franklin Templeton is a sponsor of Firstlinks. The information provided should not be considered a recommendation to purchase or sell any particular security. Please consider the appropriateness of this information, in light of your own objectives, financial situation or needs before making any decision.*

## COVID-19 and the madness of crowds

Phil Ruthven AO

History may well judge the 2020 COVID-19 pandemic as much an emotive and financial panic as a health crisis that led to a recession or depression. More like a GFC Mark II. In a fortnight during March, we saw \$US30 trillion (30%) wiped off world stock markets that had begun the year at around \$US100 trillion. They had recovered to be 15% below that peak in mid-August. World GDP in 2020 has been forecast to fall 5%, and even with growth in 2021, GDP would be still lower than 2019.

Having been scared witless by panicky leaders, the medical world, and 24/7 sensationalist media, the public has not been given perspective or options, so many wanted immediate 'safety' since they believed they had a high chance of catching and dying from the dreaded virus. A grossly exaggerated fear, given that the world will have lost a miniscule 0.015% of its population from COVID-19 in 2020, lower than the average respiratory death rate each year.

### Pandemic perspective

How on earth was COVID-19 allowed to panic nations and the world? The reality of death in society does not justify the madness that has evolved, as we see in the data below.



## GLOBAL PERSPECTIVE ON COVID 19

end-2020 (F)

World population	7,820,000,000	
World deaths	57,200,000	1 in 137 people
Normal respiratory disease deaths	3,200,000	1 in 18 deaths
COVID 19 deaths, 2020(E)	1,200,000	1 in 3 respiratory deaths 1 in 48 total deaths (2%) 1 in 6,500 population (0.015%)

- The GFC overshadowed the virus in 2009, now the reverse in 2020!
- Soon, the recession/depression (GFC Mark 2) will overshadow the virus
- Why this panic for a relatively small % of deaths (2%)?
- Why are the other 98+% of deaths not important enough to be in the news?
- Why publish "positive cases" when so few die from the virus (c.4%)?
- Why are we still told to be terribly afraid, and panic?
- Did governments anticipate their destruction of economies, jobs and wealth?
- Is it likely that "the cure will be worse than the complaint"?

Some additional perspective for Australia can be gained from the following facts.

- 13 people died from COVID-19 in March-August 2020, on average, each week
- 154 people die of all respiratory diseases on average each week
- 3,220 people die from all causes on average each week and every week.

Only the miniscule number of COVID-19 deaths received saturation media coverage. Only a handful of other deaths were mentioned from murder, road and other accidents and the death of somebody famous.

Didn't other deaths count or matter as much as a virus death? Is there not as much tragedy with the other 3,200 or more deaths every week in Australia?

So, why can't governments tell their citizens what tiny chances there are of dying from respiratory diseases at large, compared with all other causes of death, and even less from COVID-19 by itself? And why saturate media with 'positive cases' when it is only deaths that matter in the final analysis?

Why are we scaring people out of their minds, when the facts do not provide justification? It is almost as if mediaeval witchdoctors have taken charge of our lives and livelihoods (the economy).

### Short history of pandemics

Epidemics and pandemics are an integral part of human history, with each outbreak bearing both social and economic costs. The world has endured other outbreaks over the past century. If the early decades of this new century are a reliable indicator, we can expect to see more in the future.

The table outlines the main epidemics and pandemics that have been observed in recent history, when and where they struck and the resulting death toll.

The two standouts were the Spanish Flu and HIV/AIDS. The first, which occurred in 1918–20, resulted in over 50 million deaths (>2.5% of the population); and the second, which was first observed in the 1960s and is still present today, has resulted in 30 million deaths to date (0.6% of the average population until now).

The most recently discovered coronavirus, COVID-19, spread rapidly worldwide. The economic impact of COVID-19 on global GDP and stock markets is proving more severe than was anticipated, and we are yet to see the full extent of the damage.

### MAJOR PANDEMICS & EPIDEMICS

20<sup>th</sup> and 21<sup>st</sup> Centuries

Year(s)	Disease	Geography	Deaths
1899–23	Cholera (6 <sup>th</sup> )	Europe, Asia, Africa	80,000
1910–12	China Bubonic Plague	China	40,000
1918–20	Spanish Flu	Worldwide	50,000,000+
1957–58	Asian Flu	Worldwide	2,000,000
1968–69	Hong Kong Flu	Worldwide	1,000,000
1960–	HIV/AIDS	Worldwide	30,000,000
2002–04	SARS (Coronavirus)	Asia, Canada	<1,000
2009	Flu Pandemic	Worldwide	203,000
2020	Coronavirus (COVID-19)	Worldwide	1,200,000 ?

Note: \* 1 in 27 (<4%) of Positive Cases. 16/08/2020

Source: Ruthven Institute, 16/08/20

## Increased economic vulnerability

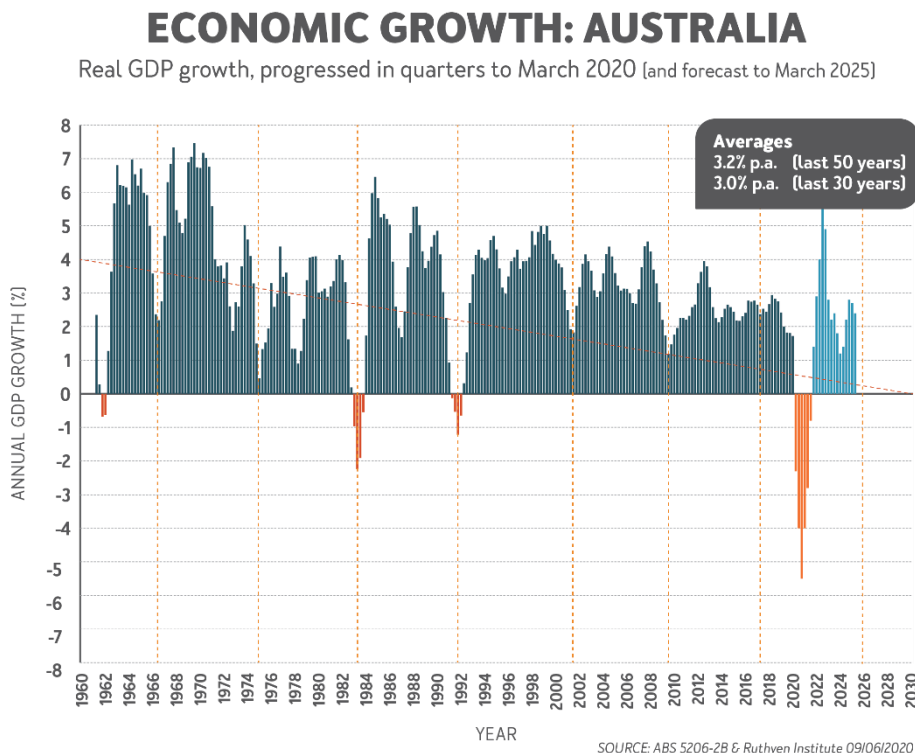
A simple statistic reveals the vulnerability of the world today: in 1950 only 1% of the population were international tourists compared to 20% in 2020. So, diseases can go pandemic more easily and more speedily. Counterbalancing this extreme risk is modern medical research which can result in vaccines and antidotes. Many countries reckon they have the response, so here's hoping.

The epicenter of the COVID-19 pandemic, China, dominates (near half) the world's manufacturing output, and that has created an unexpected problem with the supply chains of goods.

In short, the world economy now has a lot more international interdependence between economies and businesses. Exports had trebled their percentage share of the world's GDP from 10% to 30% over the past 70 years.

It is sobering to know that governments in Australia shutdown tourism (2.8% of GDP), restaurants (1%), international air travel (1.3%), entertainment (> 1%) and other direct or collaterally damaged industries (estimated 8% minimum) or around 15% of the economy. We will have lost 5-7.5% of GDP and possibly on our way to a depression (two years in succession).

The Ruthven Institute's provisional forecast over the next five years is shown below.



## The financial impact

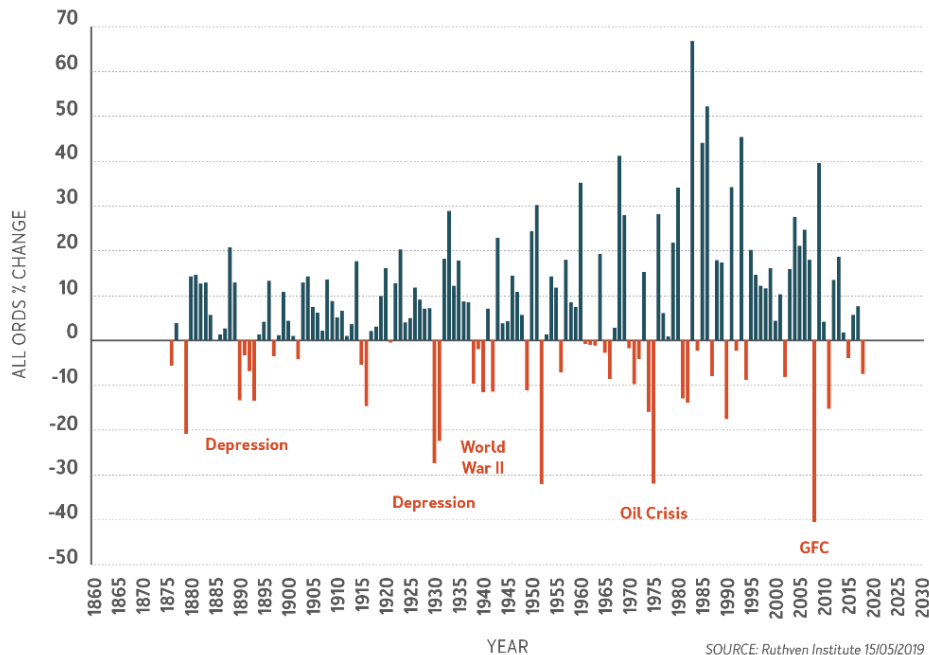
Businesses and investors can be just as spooked with emotional (populist) responses as the public is with diseases. Yet again the stock markets have gone crazy. They have a habit of exaggerating threats as well as exaggerating opportunities, as the chart below reminds us. So, we are on a wild ride, despite the actual economy (GDP) of Australia being nowhere near as volatile as these deviations.

The huge rises and falls in the stock markets are the usual madness of crowds (as expounded by Charles Mackay in his 1841 book: *Extraordinary Popular Delusions and the Madness of Crowds*).

We have been on some doozies before, including -40% in 2008. We have had four calendar years of falls of around 30% since Federation due to two World Wars, an oil crisis and the GFC.

## AUSTRALIAN STOCKMARKET GROWTH

Percentage change in All Ordinaries Index, 1876–2018

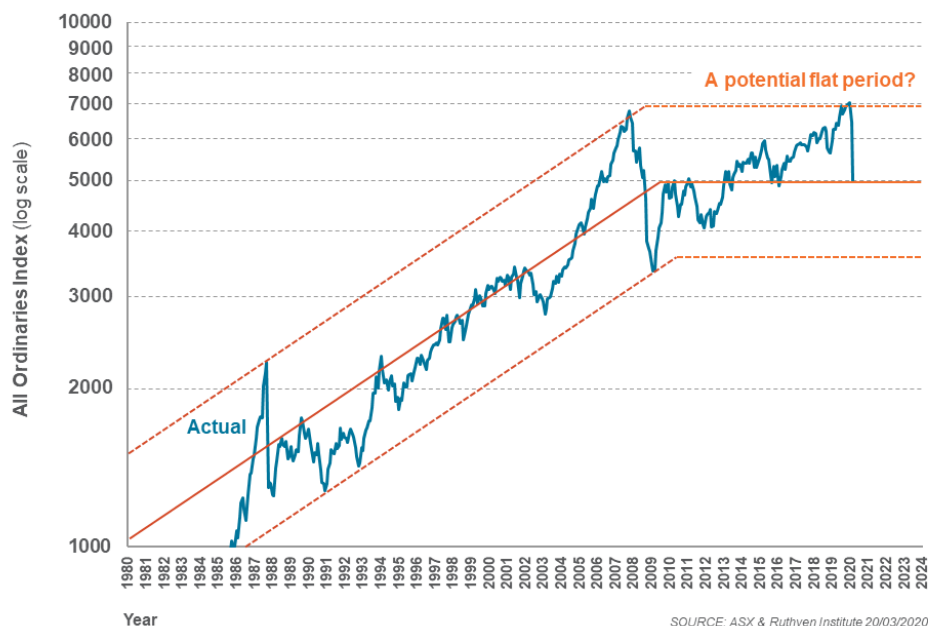


### Where to from here?

The long 'tunnel' in the chart below shows where we seemed to be heading before COVID-19 changed everything. The fall in March was -26% (and 31% from our record high in February). This was panic of the magnitude of the GFC, which was caused by sub-prime mortgages and other unethical if not also criminal behavior in financial markets. The market has recovered to be around 15% below the peak but for how long?

### Australia's Stock Market

All Ordinaries Index, to late March 2020



### So, what are the lessons learned?

Predicting future epidemics and pandemics is easy: they will continue to happen. But knowing what disease, how dangerous, and when it will strike isn't easy at all. The world has had 14 pandemics over the past 100



years to 2020, averaging seven years apart and averaging <5 % of annual deaths of the population each year. Only three were terrifying (Spanish Flu, Smallpox and AIDS).

So, it is well to remember that >95% of deaths are unrelated to pandemics. Getting panicky and frantic is no substitute for perspective, rational measures and balancing human impacts with ongoing livelihood impacts (business and the economy). Most of the COVID-19 deaths are with the elderly, meaning quarantining the under-65s that create the bulk of our wealth each year is questionable. What will probably be non-negotiable are: quarantining the most vulnerable (over 70-year-olds) and infected, social distancing and masking.

Perhaps the best news, for those prepared to take the long-term view, is that complacency in both health and interconnective trade dependencies is likely to give way to better planning, safer strategies and alliances, and contingency plans.

And perhaps another permanent change is likely to take place with more virtual workplaces, more virtual meetings and more flexibility via increased partial working from home and videoconferencing via the likes of Microsoft Teams, Zoom, Facebook et al. These practices have been in place or available for many years, but they are becoming more user-friendly, of higher quality and offering more features. They will become *de rigueur* as a result of the pandemic.

*Phil Ruthven AO is Founder of the [Ruthven Institute](#), Founder of [IBISWorld](#) and widely recognised as Australia's leading futurist.*

## A game plan for managing volatility in global equities

Ned Bell

The unfortunate reality is that we are in the late stages of an incredibly long bull market in equities, but changes to the 'growth' component of a global equity allocation may prove appropriate for investors.

### Four types of global equities

Traditionally, Australian investors have achieved growth exposure in their global portfolios by allocating to three buckets of global equities:

1. large cap growth
2. emerging markets
3. global small caps.

It's not hard to see why. For the better part of the last decade, we have seen large companies - like the FAANG stocks - proving generally to be stellar performers, while emerging markets and global small caps have also performed well for many years.

However, no one was fully prepared for how the COVID-19 pandemic exposed the multitude of risks in global markets.

For those investors who were contemplating changes in global equity portfolios earlier this year but did not act, the recent rally could present a timely opportunity to make some changes to sub-allocations within global equities.

This is where we believe global small and mid-cap (SMID) stocks play an important growth role in diversified portfolios.

Investors have previously not been as aware of this **fourth** type of asset class as of others. A lack of analyst coverage and investor attention to global SMID stocks has meant that investors have been missing out on an asset class that exhibits strong potential growth opportunity, lower valuation risk than other growth assets and diversification opportunities.

They may not be named brands, like Apple, Facebook, or Google, but what these stocks do offer is an opportunity for investors to access them during their 'sweet spot' of the business cycle.

So is it too late to enter the global SMID space for investors?

## Allocating to global SMID equities

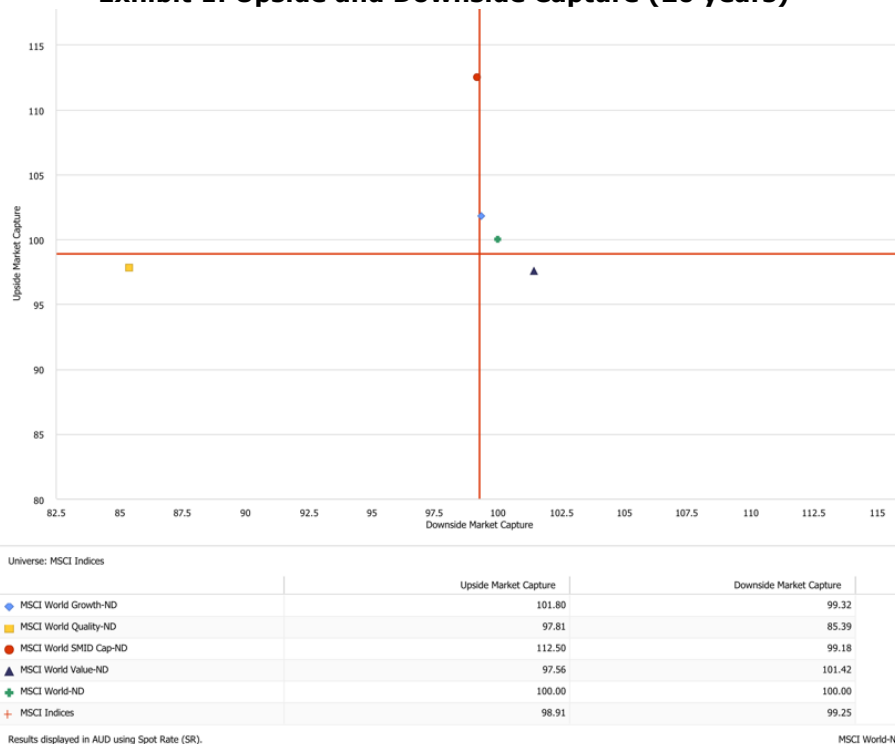
Global SMID companies can improve the risk-return profile by playing a growth role in investor portfolios over the medium term. They have less valuation risk than large cap growth, less absolute risk than emerging markets and less liquidity risk than small caps alone.

Further, global SMID companies have the best mix of upside and downside capture over 20 years when compared to other global market indices, as shown in Exhibit 1 below. This is an important metric when comparing returns and offers one way to measure expected performance during both market rallies and declines.

An upside capture ratio of greater than 100 indicates historical outperformance of the market during periods of positive returns (the MSCI World SMID Cap Index at 112.50), and a number less than 100 indicates relative underperformance.

Similarly, a downside capture ratio of greater than 100 would indicate a historical decline greater than the broader market during periods of stress, and a downside capture ratio of less than 100 (the MSCI World SMID Cap Index at 99.18), indicates that it historically has protected capital and declined less than the broader market during these negative periods.

**Exhibit 1: Upside and Downside Capture (20 years)**



Source: eVestment. MSCI Median is the median of the five indices shown in the chart. Period is for 20 years ending June 2020, run on a monthly basis. All results are in AUD terms and measured against MSCI World-ND.

The remarkable rebound in global equities following the dramatic losses in the first quarter of 2020 has caused many investors to question whether they have 'missed the boat' when it comes to investing in global stocks.

The simple answer is no. We believe the current environment makes a good case for an allocation to global SMID stocks.

## Valuations have lagged but fundamentals are strong

When we look at global equities as a whole, valuations are not that high, considering the MSCI World Index as a proxy. The current forward price-to-earnings ratio (P/E) is about 20x earnings, or in other words, an earnings yield of about 5%. In the context of a 0% interest rate environment, a 5% earnings yield is reasonable. But within these valuations there is massive dispersion, particularly between large cap growth stocks and value stocks.

Within the global SMID space, there is far less dispersion. As much as stocks have been rebounded off their lows, global SMID stocks have effectively gone sideways over the last three years, lagging the MSCI World Index by 4.2% per annum. As an asset class, they are almost back to where they were in Q3 2017.

In terms of valuations, the MSCI World SMID Cap Index is currently trading on a 2020 P/E of 23.1x, compared to 30.5x for MSCI World Growth Index. As another 'growth proxy' in global equity markets, we would argue that a 24% valuation discount is compelling. The absolute P/E of 23.1 might not sound overly cheap in an absolute sense but 2020 earnings will be well below 2019 levels.

We also think investors should acknowledge how valuations have changed over the past five years. Global SMID stocks are currently trading at a 12% premium to the broader market which is in line with its 5-year average. Global large cap growth stocks on the other hand are trading on a 43% premium to the broader market versus its 5-year average of 23%.

This discounted valuation is an attractive proposition for investors seeking diversification potential compared to large cap stocks.

And while these stocks are not predicted to grow much this year, once we come out of the other side of COVID-19, the organic growth drivers of SMID stocks should come back. The combination of corporate cost-cutting, COVID-19-related stimulus and the reopening of global economies, positions global SMID companies for a strong rebound over the next two to three years.

### **Companies poised to win in a COVID-19 world**

While many industries are suffering because of the COVID-19 pandemic, others have thrived in this environment, especially in the healthcare and consumer discretionary spaces.

The healthcare sector continues to boom, particularly towards research and development in pharmaceuticals and biotech industries. We believe dental orthodontics, which saw a negative impact in the short-term due to lockdowns, will present excellent earnings leverage in 2021.

Stocks that we are watching in the healthcare space include Align Technologies, Idexx Laboratories, and Danish medical devices maker Ambu.

Likewise, consumer discretionary has seen increased demand during COVID-19 as consumer behaviour changes materially. Opportunities include sectors such as home improvements, localised vacations and outdoor activities. However, overseas travel and the hospitality industry will continue to struggle.

Consumer discretionary stocks that we believe are poised to win include Tractor Supply, Pool Corp, O'Reilly Automotive, and YETI Holdings.

For investors looking to diversify their global large cap exposure, global SMID equities present investors with some strong opportunities in names we believe will do well over three to five years and beyond.

*Ned Bell is Chief Investment Officer and Portfolio Manager at [Bell Asset Management](#), a Channel Capital partner. Channel Capital is a sponsor of Firstlinks. This information is not advice or a recommendation in relation to purchasing or selling particular assets. It does not take into account particular investment objectives or needs.*

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## **Are bond yields lower forever or is the Big Bang coming?**

Jonathan Gregory

Look up into the night sky and the space between the stars and planets appears completely dark. But view that same sky through a radio telescope and instead see a pale background glow that fills your view. What you are seeing is in fact faint background radiation or the so-called Cosmic Microwave Background (CMB), filling all space.

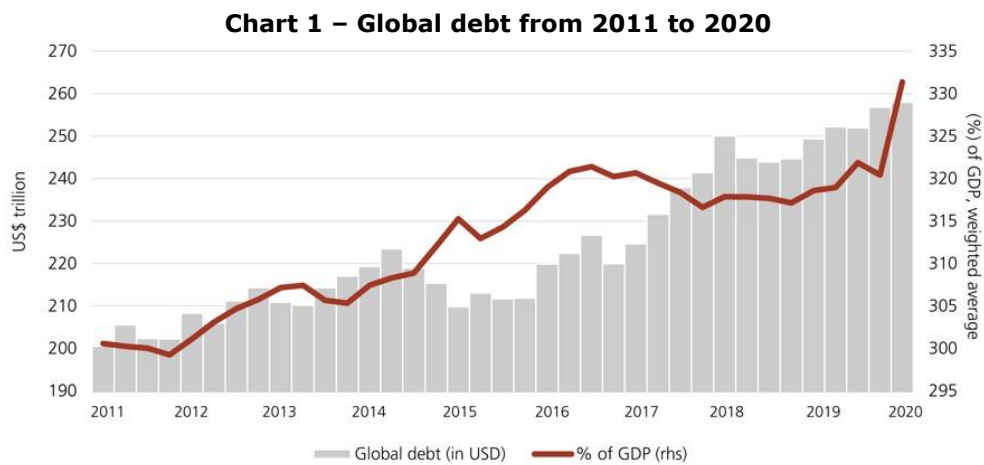
The discovery of this leftover, or remnant, radiation in 1964 was crucial evidence for the 'Big Bang' creation of the universe. The Big Bang theory itself was partially derived from the discovery that the farther away galaxies are, the faster they are moving away from the earth. Imagining this cosmic expansion running backwards in time leads to the dense and hot very early universe that is the plausible source of the CMB.

Just as the Big Bang theory is a credible hypothesis for the start of the universe, the 'Big Crunch' is the symmetric view of its ultimate fate. The density of the universe is enough to ultimately stop its expansion, triggering a collapse right back to a dimensionless 'singularity' where space and time have no meaning.

### Debt is in its own expanding universe

For better or for worse, markets too go through their own versions of the 'Big Bang' and 'Big Crunch' with a profound impact on asset returns. Successful investing is, in part, about forming views around plausible versions of the future, based on observable data today.

We certainly have our own expanding galaxy of debt on which to hypothesise. Chart 1 shows that debt levels globally hit a record high of US\$258 trillion (or 331% of global GDP) in Q1 2020.



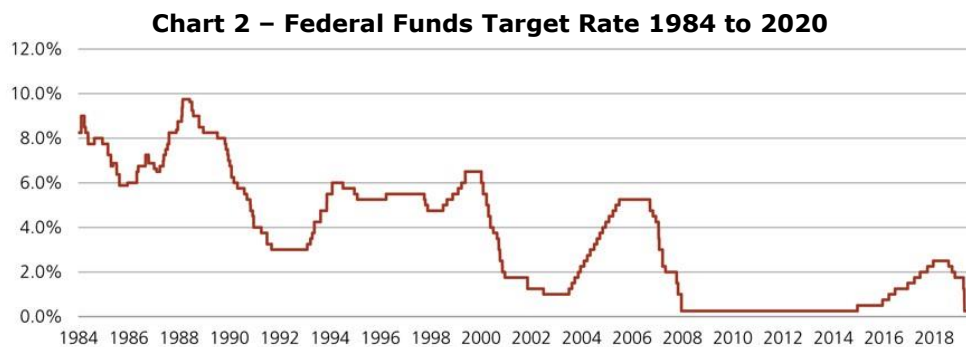
*Source: IIF, BIS, IMF, National sources, as at 31 March 2020*

Clearly, the impact of COVID-19 and the early fiscal response have had a big effect, and all the subsequent data shows this pace has accelerated since then.

But the chart reveals that the trend was already well established. Debt levels have been going up and up over time. What is also apparent is that total debt is increasing at a faster rate than growth in the global economy, so overall leverage (in this case debt relative to global output) is increasing. For a long time now, adding debt to the global economy has not been of obvious benefit to the overall growth rate.

Part of the reason is simply that, all else being equal, more debt means more spent on debt service, which itself can be a drag on growth. Certainly higher overall systemic leverage has been a factor in central banks' need to keep policy rates low.

Chart 2 shows the path of the US Federal Reserve's target rate over time. It is noticeable that, as global debt levels have risen, not only is the overall trend sharply lower, but each peak in rates is lower than the last.

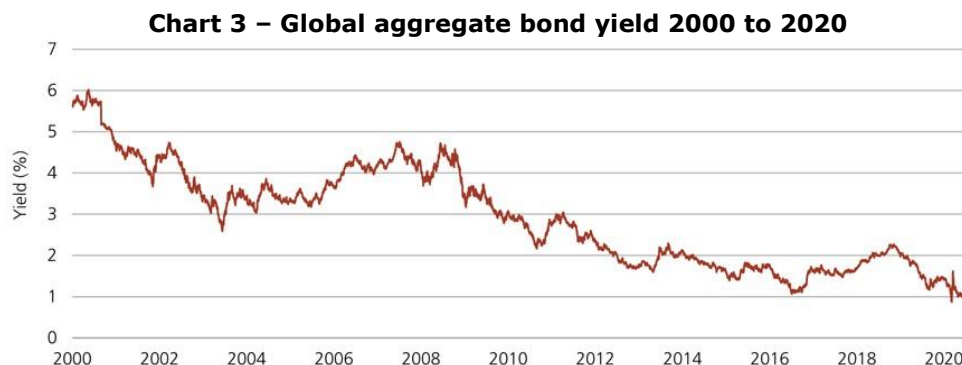


*Source: Bloomberg, as at 13 August 2020*

## Low yields have a major impact on future returns

Policy rates are the 'background radiation' that permeate the pricing of every asset class. As a consequence, exactly the same effects are observable in broader bond market yields. Chart 3 shows the yield on the Global Aggregate Bond Index (a broad global bond universe tracked by many investors) which 20 years ago yielded nearly 5.6% but at the beginning of August 2020 this year reached a record low of just 0.8%.

This falling yield has important implications for future returns. Between 2000 and the end of July 2020 the Global Aggregate Bond Index produced an annual average total return of 4.6%. Almost 85% of this return came from income (remember, the starting yield was about 5.6%). Now think again about that 0.8% yield on the bond universe today. We can see that the prospect for future broad-market bond returns over the next 20 years seems rather lower than the past 20.



*Source: Bloomberg Barclays, Bloomberg Barclays Global Aggregate Index as at 13 August 2020*

That said, it seems extremely unlikely that the trend in yields will reverse anytime soon. Many governments need rates to stay low if the positive impact of the massive fiscal expansion is not to be eroded, and central banks are more than willing to assist via asset purchases and policy rates nailed to the floor.

The key point for bond investors today is that, while overall broad market returns are likely to be lower than in the past, different sectors of the market will offer quite different risk-reward characteristics over time. So the diminishing prospective return of a passive allocation to the broad market should alert investors to the need for active styles that embrace the widest possible opportunity set.

## Three possible outcomes

What outcomes might today's world of low growth, high debt and low yields foreshadow? Broadly, at least three paths seem conceivable:

**1. The 'Big Crunch'.** Today's very low levels of growth, coupled with ever more borrowing, eventually ends in a debt deflation spiral. Low inflation or even deflation leads to high real costs of debt servicing causing companies and consumers to default on loans and mortgages which have become too large to manage. This in turn leads to pressure on the banking sector, leading to less lending and more insolvency in a downward spiral. In this environment cash and high-quality government bonds probably outperform credit.

**2. The 'Big Bang'.** A continued expansion of government spending might lead to inflation which destroys the value of debt in real terms but crushes the value of savings with it. This scenario isn't likely over at least the next year or so as the deflationary effects of COVID-19 predominate. It will become a much bigger risk if capacity constraints arise in economies where massive fiscal spending creates excess demand that ultimately forces up prices. Inflation-protected securities could do relatively well here.

**3. The 'Steady State'.** We could see policymakers prefer a 'steady state' outcome. Here the trends of the past 30 years go into reverse; global growth rates exceed the rate of expansion of global debt, real growth rates accelerate and inflation goes up, but not too much. It's perfectly possible, but it would mark a break in some very well-established trends. That said, credit and emerging market bonds would be likely winners.

As momentous as it will be, our best estimates for the end of the universe still place it billions of years away. The end of the bond bull market is probably rather nearer, even though today it might seem as enduring as time itself.



Exactly how and when it will unfold is still extremely uncertain. So investors should critically appraise their bond holdings now to ensure they have the diversification and flexibility to thrive in what will be a very challenging world!

*Jonathan Gregory is Head of Fixed Income at UBS Asset Management in the UK and the lead Portfolio Manager on all Global Aggregate, Global Credit and UK Fixed Income Strategies. [UBS](#) is a sponsor of Firstlinks. This article is general information and does not consider the circumstances of any investor.*

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## Ignore solar parity at your investing peril

Damien Klassen

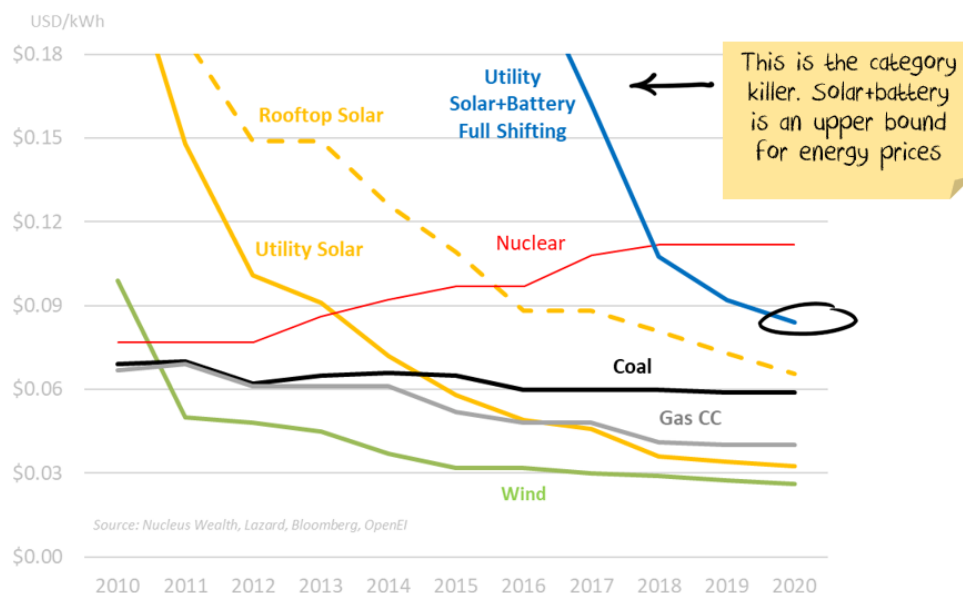
Australian energy policy is a mess. Investors should ignore the arguments. The antagonists are stuck in a perpetual time shift, prosecuting cases from five to ten years ago, ignorant of the incoming change in solar economics.

Five years ago, coal and gas were the cheapest sources of energy in most countries. Now wind and solar are.

"But but but, gas and solar are intermittent. YOU NEED BASELOAD!!!" cry the fossil fuel defenders.

### The more solar we develop, the cheaper it becomes

Sure, battery + solar is currently more expensive than baseload coal. The problem is you don't have to look too far forward to see that it won't be like that for long. Coal, gas and oil have economics based on a scarcity curve: the more we use, the deeper we need to dig and the more expensive it is to extract. Solar and battery power is on a [technology curve](#), the more the world produces, the cheaper it becomes:



Solar + batteries are the 'killer app'. They are extremely scalable once they reach an acceptable cost. All the current trends point to energy parity soon for electricity.

### Relative cost of energy

The figures in the table below are USD/kWh for international comparability. We use levelised cost of energy, which adjusts for the up-front cost of building power plants or solar arrays, asset life and tax issues. These numbers are approximate, rely on a lot of assumptions and vary by country and region. In general, the numbers are for new installations with recent technology.

Levelized Costs (USD/kWh)	Levelised Cost Ex Fuel	Fuel	Total	
Onshore Wind	\$ 0.03		\$ 0.03	Utility solar and wind the cheapest option
Utility Solar	\$ 0.04		\$ 0.04	
Natural Gas @\$3/mmBtu	\$ 0.02	\$ 0.02	\$ 0.04	
Natural Gas @\$6/mmBtu	\$ 0.02	\$ 0.04	\$ 0.06	
Coal @ \$50/Ton	\$ 0.04	\$ 0.02	\$ 0.06	
Coal @ \$75/Ton	\$ 0.04	\$ 0.02	\$ 0.07	
Utility Solar + partial battery	\$ 0.07		\$ 0.07	And adding a partial battery to offset the evening load is now at parity with other costs
Coal @ \$100/Ton	\$ 0.04	\$ 0.03	\$ 0.07	
Natural Gas @\$9/mmBtu	\$ 0.02	\$ 0.06	\$ 0.08	
Utility Solar + full battery	\$ 0.09		\$ 0.09	
Offshore Wind	\$ 0.10		\$ 0.10	
Nuclear	\$ 0.10	\$ 0.01	\$ 0.10	

Source: Nucleus Wealth, Lazard, Bloomberg, Open EI

### Gas is no longer a transition fuel

Note the fuel cost of natural gas in the table above. Electricity prices from gas are more sensitive to fuel prices than other technologies. Fifteen years ago, there was a push in Australia to use gas as a transition fuel from coal to renewables. And gas was viable. But 15 years later, solar + battery option has fallen so much that gas is no longer feasible across Australia.

If you live in a country (say the US) or state (say Western Australia) with lots of gas and domestic reservation, then gas is still a viable option. Prices are US\$3 per mmBtu or lower.

Energy companies have co-opted energy policy in the rest of Australia. Narrabri coal seam gas, the centre of a current battle in NSW, at best will be around \$6 per mmBtu. As you can see from the table above, solar + partial battery is almost cost-competitive at that price.

### Future prices

In the last 10 years, solar costs have fallen around 20% per year. Given how low solar costs are, the critical assumption is battery prices. A 20% fall in battery prices will have a much larger impact than a 20% fall in the cost of solar. I suspect this will slow a little, but if it doesn't the impact will be immense:

Prices if solar+battery costs fall 20% p.a. for 5 years (USD/kWh)				
	Levelised Cost Ex Fuel	Fuel	Total	
Utility Solar	\$ 0.01		\$ 0.01	If costs decline at 20% per annum (like they have for the last ten years) then in five years time, the cost of running new solar will be cheaper than the fuel cost of an existing power plant
Utility Solar + partial battery	\$ 0.02		\$ 0.02	
Onshore Wind	\$ 0.03		\$ 0.03	
Utility Solar + full battery	\$ 0.03		\$ 0.03	
Natural Gas @\$3/mmBtu	\$ 0.02	\$ 0.02	\$ 0.04	
Natural Gas @\$6/mmBtu	\$ 0.02	\$ 0.04	\$ 0.06	
Coal @ \$50/Ton	\$ 0.04	\$ 0.02	\$ 0.06	
Coal @ \$75/Ton	\$ 0.04	\$ 0.02	\$ 0.07	
Coal @ \$100/Ton	\$ 0.04	\$ 0.03	\$ 0.07	
Natural Gas @\$9/mmBtu	\$ 0.02	\$ 0.06	\$ 0.08	
Offshore Wind	\$ 0.10		\$ 0.10	
Nuclear	\$ 0.10	\$ 0.01	\$ 0.10	

Source: Nucleus Wealth, Lazard, Bloomberg, Open EI

### Rooftop solar

I have deliberately left rooftop solar out of the above tables, as it is less comparable than might be expected. Rooftop solar has costs of around \$0.13 assessed on the same basis as above.

But that is not important. Rooftop solar is not competing with a coal plant, it is competing with grid power + grid infrastructure, which is an important distinction.

I don't care whether my rooftop solar produces energy cheaper than the local coal-fired power station. I care whether it produces at a cheaper rate than I pay for power – and it does:

#### Retail Electricity Prices (USD/kWh)

China, India

Rooftop Solar (8% discount rate)

US

Japan

Australia

Rooftop Solar + partial battery

European Average

Rooftop Solar + full battery

Germany

Source: Nucleus Wealth, Lazard, Bloomberg, Open EI

#### Total

\$ 0.08

\$ 0.13

\$ 0.15

\$ 0.28

\$0.20-0.30

\$ 0.28

\$ 0.30

\$ 0.35

\$ 0.37

Rooftop solar the  
cheapest option  
during the day

And closing fast, if  
you add a battery,  
on retail prices

But my panels provide power during the day when everyone else's panels are also producing electricity. At \$0.28 for partial shifting (i.e. generating enough power to get you through the evening peak) having some battery capacity is profitable in the right climate, but the return is low.

Looking at the 20% cost reduction scenarios again:

#### Prices if solar+battery costs fall 20% p.a. for 5 years (USD/kWh)

Rooftop Solar (8% discount rate)

Rooftop Solar + partial battery

Rooftop Solar + full battery

US

Japan

Australia

European Average

Germany

Source: Nucleus Wealth, Lazard, Bloomberg, Open EI, Global Petrol Prices

#### Retail Electricity

\$ 0.04

\$ 0.09

\$ 0.12

\$ 0.15

\$ 0.28

\$0.20-0.30

\$ 0.30

\$ 0.37

If costs decline at 20% per  
annum then there will be  
major disruptions in retail  
electricity markets

There are lots of questions that the above table raises. If everyone starts going off-grid, who pays for the poles and wires? Do we end up in a 'death spiral' where more people leave the grid, raising the cost for those who remain, which means more people leave and so on?

My best bet is that it is going to be a battle of vested interests. Wealthier people will leave the grid when it becomes economic as they can afford the upfront cost. This leaves renters and the poor left paying higher bills to account for the transmission assets. Governments will have three options:

1. Prevent retail electricity price rises, support the rights of the many over the few and make the asset owners pay the cost of their mistaken investment.
2. Socialise the losses and bail out the transmission asset owners.
3. Let the asset owners raise prices, shift the cost of adjustment onto the poor.

While option 1 would be my preferred choice, the cynic notes option 3 will be the path of least resistance. The lobbyists will no doubt be hard at work on option 2 in case any government has the fortitude to explore option 1.

### Investment outlook

Battery costs are the primary determinant at this point. If the rate of improvement slows significantly, then it may take 10 years. My base case is that battery improvement will be sustained, but it is far from a given.

The US is not the market to watch. Energy costs are lower there than almost any other developed market. A better indicator of the future will be developments in Europe.

### Key investment sectors and opportunities

- **Coal/gas:** I'm not saying that coal and gas will cease to be used when we hit parity. However, the price will be limited to no more than solar + battery, and that cost will fall year after year. Any investment in these companies should be made with falling commodity price expectations – i.e. value them in run-off. There may be short-term shortages and price spikes, but these are selling opportunities. Increases in electric car penetration may limit the downward trend for a few years.

- **Solar companies:** Solar manufacturers are difficult. The technology is moving too fast to work out if there will be a 'winner takes all'. Service providers to the solar industry are probably a better investment if you can find one that's not already very expensive. We have made a few profitable investments in semi-conductor stocks that manufacture 'commodity-type' parts for solar companies. It is not a sexy area of the market with thin margins, but at the right price, some of these stocks are interesting.
- **Industrials:** Companies that have high electricity bills during the daytime (or can shift costs to the daytime) will benefit. There are many European materials and refining companies that struggle to compete with US companies because of the lower-cost US energy in recent years.
- **Oil:** At the margin, less diesel will be used for power generation in remote areas. Expect this to continue. It is not a large part of the oil market, but it will mean oil demand will be weaker than they would have otherwise been.
- **Electricity transmission:** Will these companies get bailed out? Will increased prices to offset falling customers be allowed? Or will companies take the pain of the 'death spiral'? It is a country-by-country decision with lots of risk in this trade.
- **Electricity production:** The toughest thing about an investment today is that the company which builds a solar array next year will have lower costs than the one who built last year. Plus there's the regulatory risks from the 'death spiral'. Another risky trade.

*Damien Klassen is Head of Investments at [Nucleus Wealth](#). This article is general information and does not consider the circumstances of any investor.*

## Why are companies raising capital during COVID?

Deana Mitchell

The uncertainty about the impact of the pandemic on the business operating environment sparked many capital raisings on stock exchanges around the world. Australia led the world with [more than \\$30 billion raised](#) from the beginning of the year to 4 August 2020. The change to ASX listing rule 7.1, which increased the amount of capital companies could raise in institutional placements from 15% to 25% of issued capital, was a significant measure to provide additional flexibility for ASX-listed companies to efficiently raise capital. The ASX has since extended its [temporary capital raising relief](#) to 30 November 2020.

### Investors have done well from new issues

Overall, participating in capital raises during the COVID period has yielded strong returns for investors. Recent [data by fintech Fresh Equities](#) showed that the average non-weighted return for the 205 placements completed in May and June was 59% to 1 August 2020.

So why are companies seeking to raise capital in the middle of a global pandemic? Some examples include:

- To boost liquidity as revenue streams temporarily dried up during the pandemic
- To shore up balance sheets or to help companies bolster their regulatory capital positions, and
- To pursue opportunities for potential new business ventures or acquisitions that may arise.

During the market downturn in the first half of 2020 investors helped recapitalise companies that were affected by the pandemic. Since the beginning of 2020, Australian Ethical has participated in more than 30 capital raisings with over \$60 million in new capital invested. Overall, we have helped recapitalise around 30% of the ASX-listed companies that we own in our actively managed portfolios, with about half of that capital going to companies in the healthcare and IT sectors (areas we are overweight as a result of our Charter).

We also underwrote some capital raises, which meant that if a company was looking to raise \$5 million (for example) and only raised \$4 million, we agreed to make up the shortfall.

Here are three companies we helped recapitalise in 2020 and their purposes for issuing.

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### Somnomed – short-term liquidity

Somnomed manufactures and sells devices for the oral treatment of sleep-related disorders in Australia and overseas. The company's revenue was negatively impacted during lockdown because the diagnosis and referral of patients for its sleep apnoea product was disrupted. Somnomed raised capital to boost its short-term liquidity during the lockdown period and as a long-term holder of the stock, we were happy to participate in the institutional placement.

### NAB – balance sheet repair

We [invest in two of the major banks](#), NAB and Westpac. On balance, we believe responsible and well-regulated banks can do good. For instance, while both NAB and Westpac make loans to the fossil fuel industry, they are also significant funders of renewable energy. More than 75% of Westpac's lending to the electricity sector goes to renewable projects and for NAB the figure is 69%.

We currently assess that Westpac and NAB are implementing their commitment to lend in line with the economic transition our society needs to limit global warming to 2°C. We participated in NAB's institutional placement of \$3 billion announced in April after the bank revealed nearly \$1 billion in loan impairments, largely attributable to the COVID crisis.

### Janison – new opportunities

Janison is an 'ed-tech' company that provides digital learning and assessment platforms that are designed to replace pen and paper. Janison's technology enables students to take exams at home or on a device in a classroom, positioning it well for the surge in demand for online test taking. We helped the company raise additional capital to pursue new opportunities overseas and at home in Australia, where Janison has [recently been selected](#) by the NSW Department of Education to deliver the state's selective school tests.

As an ethical fund manager, we invest in sustainable companies with good growth prospects that we believe will provide long-term benefits to society. Participating in capital raises is one way we achieve that goal.

*Deana Mitchell is an equities analyst at [Australian Ethical](#), a sponsor of Firstlinks. This article is for general information and does not consider the circumstances of any investor.*

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## How are vaccines actually produced?

Graham Hand

This article is an edited transcript from ABC Radio with perspectives on vaccines and COVID-19 rarely discussed. How are vaccines actually produced? Can they be contract manufactured in Australia? What new facilities are needed? Are vaccines like drugs, made from mixing chemicals?

The source is ABC RN's *Saturday Extra* programme, hosted by Geraldine Doogue (**GD**). She interviewed two of the world's top virologists on 22 August 2020. Professor Emeritus Ian Gust (**IG**) is from the Faculty of Medicine at the University of Melbourne and a former Head of Research at CSL. He developed the vaccine for hepatitis A. Dr Jerome Kim (**JK**) is Director General at the International Vaccine Institute. It has the mission to discover vaccines and deliver them to developing countries.

**GD:** Ian, let's just for the sake of simplicity, assume that Oxford University has cracked the code and has found a vaccine. And it's on to stage three trials so let's assume that they're successful. What happens next?

**IG:** Well, what's happening at the moment is unprecedented. What would happen in a normal situation is that as you proceed through phase one-phase two-phase three studies, and you get greater confidence that you've got a product that is likely to be successful, you then try to develop the manufacturing capability to produce the vaccine at scale. Which means designing, building and validating a new production facility. But because of the urgency with COVID and because the financial risks that companies normally take are replaced by governments and philanthropic organisations, these things are happening in parallel. So we've got a very truncated process.

**GD:** Why do we need new facilities?



**IG:** You've got to build a factory to produce the vaccine in very large quantities. And you've got to be able to demonstrate that you can produce it reliably every time.

**GD:** Jerome, one of the things I have come to understand is that you need specialised vaccine production labs or facilities. They're not just drug company facilities, there's a difference, isn't there?

**JK:** Vaccines are a little different from drugs. A drug is a chemical, a vaccine as a biological product, which means that the systems that they come from are living organisms, at least in the beginning. Or they come from living organisms. Some of the hepatitis vaccines are now made from cells but they start with a biological product which is inherently more complex. It requires a degree of attention to quality and attention to the final configuration of the product that is a little bit different from manufacturing a drug and showing that it has the right chemical formula.

In this case, you're actually making something from a living product, and then purifying it and subjecting it to all the kinds of quality controls that are necessary before you put a biological product into human being. So it is a much more complicated process, and that's in part why it takes five to 10 years under normal circumstances to get from start to finish.

**GD:** So all vaccines are effectively living products as opposed to just a collection of drugs.

**JK:** There is one exception now, and that is the RNA vaccines similar to the one being made by Moderna and one by Pfizer. RNA vaccines can be made chemically but it's complex, it's never really been done before at scale. And we don't have a good idea, at least I don't, of the final cost.

So we could chemically create this long molecule called RNA, then you have to pay for every step, you have to pay for all the chemicals. Some people would argue it's easier for us to characterise a chemical compound than it is a biological compound. Others would say it's easier and cheaper and faster for us to just make it biologically and purify it. Right now, we don't know which process is quicker, faster, cheaper, and safer.

**GD:** Can I check this with both of you. Basically, there are two types of vaccines. One confers sterilising immunity. This means the immune system is able to stop a pathogen, including viruses, from replicating, like measles is a classic example. And the other reduces its seriousness but not eradicating it. Is that it?

**IG:** The essential issue that could play a big factor with the COVID vaccine is that we have some extremely effective vaccines against organisms that circulate in the blood. Neutralising antibodies will completely prevent disease occurring. But we have other diseases where the infection occurs at the mucosal surfaces in the respiratory tract and in the gut. And there the vaccines that we've developed are much less effective. Think of typhoid and cholera and even rotavirus and flu. They give between 30% and 70% protective efficacy whereas with measles, mumps, rubella, tetanus, diphtheria and so forth are 95% and upwards effective.

COVID is a pathogen which affects mucosal surfaces. So the thinking is that this vaccine is more likely to have the protective efficacy of say a flu vaccine than for example the polio vaccine. The regulatory agencies, especially the FDA, have said that provided a vaccine will protect 50% of people who receive it from getting the disease, they are prepared to license it for widespread use.

**GD:** Could you explain about the mechanics, Jerome, of producing this. The idea that you can just scale up suddenly is something that I don't think has been fully discussed.

**JK:** Different organisations have different capacities. There are some companies that specialise in manufacturing vaccines for other people. We call them contract manufacturers. And so, the United States government has made deals, as part of Operation Warp speed, with three different contract manufacturers. These are companies that specialise in making things for other people.

For instance, Emergent Biosolutions has the ability to rapidly switch equipment. They use disposable equipment rather than these giant stainless steel vats and stainless steel pipes. They try to do everything disposably which gives them a lot more flexibility to reconfigure rooms to meet the required standards for manufacturing and production. Their turnaround times are a lot faster and they can switch from one vaccine to the next vaccine. Not all companies have that capability. Some companies may make a polio vaccine under a certain level of biosafety. You could potentially with small modifications design the factory to make one of the Chinese vaccines which is a 'whole inactivated vaccine' that's an old form of vaccine. If you have the right kind of facility, you can quickly manufacture huge numbers of doses. Hundreds of millions of doses.

In this case, a whole inactivated vaccine presents the entire virus to your body's defense or immune system that allows you to make responses against not only the little spikes that people see on the models with the

coronavirus spike, but also the other proteins in the other parts of the virus particle that may actually give you a better type of protection. The one complication for COVID-19 is that the vaccine has to be made under what we call 'BSL3 conditions', it's a very high level of biosafety in case the virus were to escape.

Not all countries have a BSL3 factory that's available, and it would take special construction and special permits and the process of proving that the factory can in fact do this safely is more extensive. If you don't have the preexisting capacity, it's much more difficult.

**GD:** Okay, the final word to Ian Gust. So where is CSL, what sort of vaccine would it be happy to produce, do you know the answer?

**IG:** No, there's a kind of a misconception that just because you've got a plant in the country which makes vaccines, you can make any vaccine. That's not true because for most vaccines, the manufacturing process is unique for that particular project, and that particular product. CSL is a very large producer of influenza vaccines. It produces those mainly in eggs and in cell culture, but many of the vaccines that are candidate vaccines for the coronavirus infection are produced by other technologies, so it would mean CSL basically starting the whole thing from scratch again.

What seems to me more likely, at least in the short term, is that if an overseas manufacturer entered into a relationship with CSL, the overseas company would produce it in bulk in their production plant, ship the bulk to CSL who would then finish it and distribute it locally.

*[The full 14-minute version from ABC's Radio National can be found here.](#) This article is general information only.*

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