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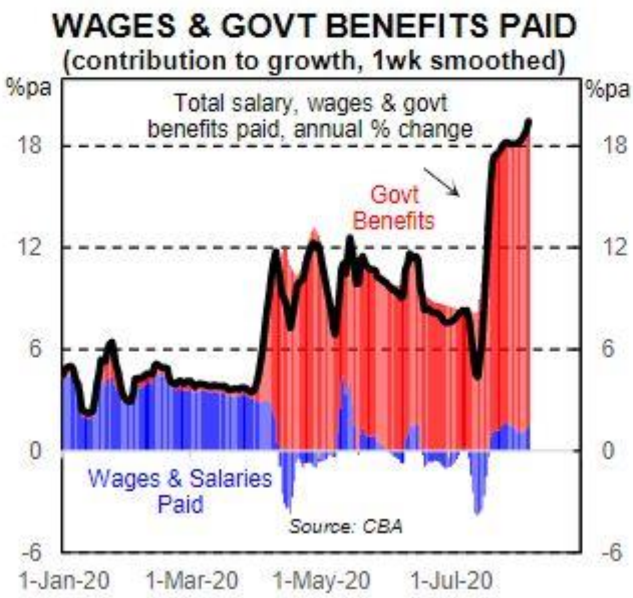
Editorial

It's easy to oscillate between vaccine optimism and pessimism depending on the most recent authoritative report. Many companies and countries have a vested interest in hyping up their treatments, but even if a convincing vaccine were discovered soon (as **Putin** and **Moscow** claim they have done), it would take most of 2021 to complete the required testing and roll it out globally. In the meantime, politicians must make tough decisions to sustain economies and manage outbreaks rather than pretending we are close to business as usual.

This chart from **CBA** shows the extraordinary extent to which the Australian economy is relying on government support, with benefit payments driving a rapid increase in household income despite poor wage growth.

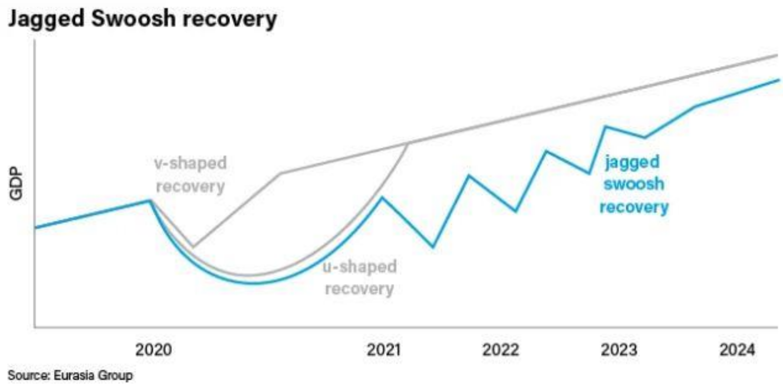


Let's check three vaccine opinions, and anyone can draw a line between them, as where the virus goes, so does the economy.

Ian Bremmer writing in [**Time Magazine**, 6 August 2020:]

"This liquidity support (along with optimism about a vaccine) has boosted financial markets and may well continue to elevate stocks. But this financial bridge isn't big enough to span the gap from past to future economic vitality because COVID-19 has created a crisis for the real economy. Both supply and demand have sustained sudden and deep damage. And it will become progressively harder politically to impose second and third lockdowns.

That's why the shape of economic recovery will be a kind of ugly 'jagged swoosh', a shape that reflects a years-long stop-start recovery process and a global economy that will inevitably reopen in stages until a vaccine is in place and distributed globally."



Even at the optimistic end, time delays are significant, as **McKinsey's** wrote on 4 August 2020:

"The world could get seven to nine vaccines over the next two years given historical vaccine success rates and the current pipeline of candidates. The outlook is even more optimistic if the full pipeline of candidates advances toward clinical trials, tripling the likely number of successful vaccines."

We should also ask, when the world masters COVID-19, what next? The **World Health Organisation** (WHO) gives a daily virus update with lots of interesting news. But on 10 August, WHO included this longer-term warning:

"We are at greater and greater risk around the world and let's face this. We live on a planet in which we're adding a billion people a decade. We are densely packed, we're exploiting pristine environments, we are creating and driving the ecologic pressure that is creating the risks that are driving the risk at the animal/human species barrier.

There are so many people out there working in the ecologic movement who are seeing this each and every day. We are pressuring the biologic system. We live in a biome, we live in a world of biology and we are actively creating the pressures that are driving the breaches of those barriers and we need to do better at managing the risks associated with that."

So this is not just about COVID-19, as there will be COVID-21 and COVID-23 unless we put far more resources into looking after our ecosystem.

This week, focussing on investing and retirement ...

We start with **Brendan Coates** and **Matt Cowgill** who question our preoccupation with superannuation for retirement incomes. Having a place to live and the role of the age pension matters more to most people.

With a lot of attention on the potential bubble of the mega-cap tech stocks, it's easy to overlook that many companies are more expensive and have far worse prospects. **Jason Ciccolallo** finds a heady 100 and US$3 trillion worth of these companies.

As companies rebuild their balance sheet with capital raisings, **Tim Canham** and **Wik Farwerck** have identified three factors which are driving their investment decisions in this new normal. Similarly, **Kent Williams** finds a sector with promising tailwinds, with local software companies delivering solutions for financial efficiency and customer-centric enhancements.

Stephen Mayne has updated his database on retail Share Purchase Plans, and he awards the 'brickbats and bouquets' for the schemes that are equitable and the ones which are downright unfair.

We regularly hear about the 'fear index', the VIX, but what is it? **Tony Dillon** explains. Is it really worth the attention it receives whenever the market spits the dummy?

Back on retirement incomes, **Arthur Naoumidis** descibes five ways to use the family home as a source of income, and why it's likely to become a more common solution in future years.

This week's White Paper from **BetaShares** is their July 2020 ETF review, where despite market runctions, Australian ETFs reached an all-time high of $67 billion. Check where the money is flowing into.

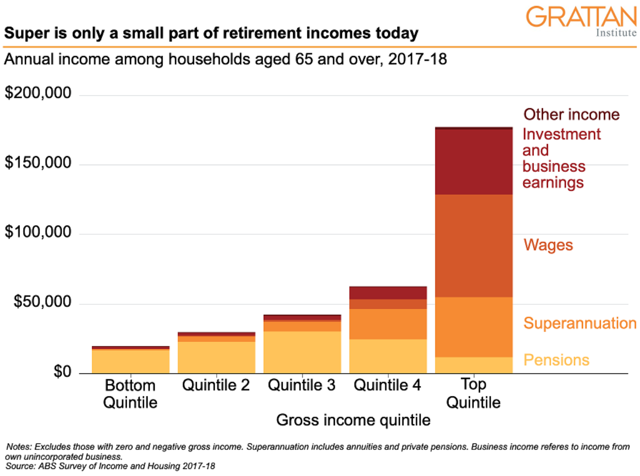
Morningstar has produced a useful calendar of the company reporting season, so you can watch for results affecting your portfolio.

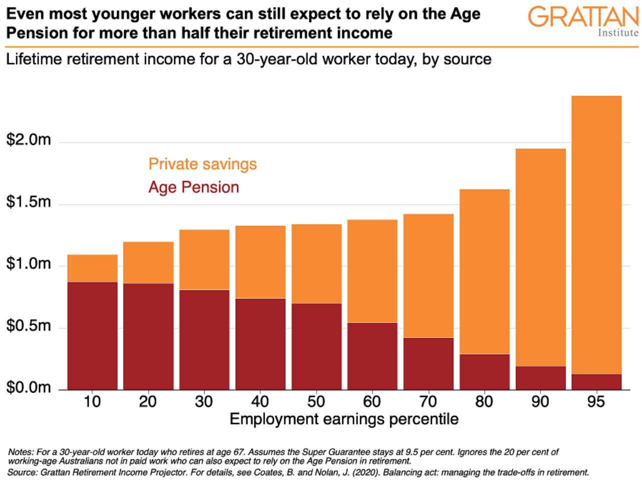
There's a lot more to retirement incomes than super

Brendan Coates, Matt Cowgill

The now-completed Retirement Income Review was asked to evaluate how the system works as a whole. But reading many submissions to the Review, you'd be forgiven for thinking there's not much more to retirement incomes than superannuation.

Grattan Institute has analysed the 125 submissions by organisations. Overall, these submissions mentioned superannuation nearly 13,000 times, but the aged pension was mentioned only 7,500 times. And other issues that affect retirees' living standards – such as aged care and rent assistance – were mentioned still less often.





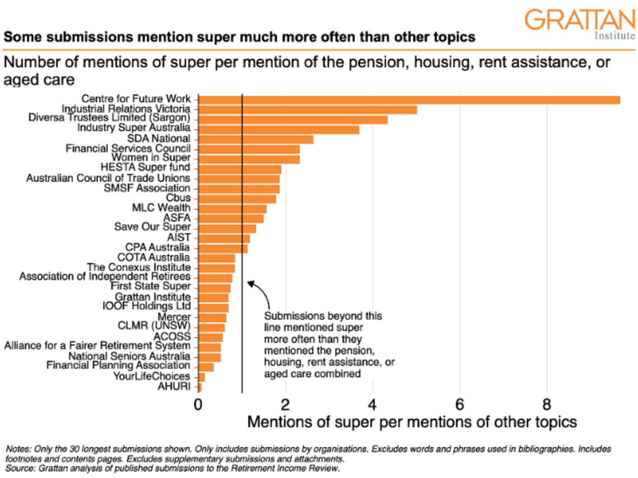
The Centre for Future Work's submission mentioned super 10 times for every mention of the pension, housing, rent assistance or aged care combined. The Victorian government's submission mentioned super five times more than these other issues combined.

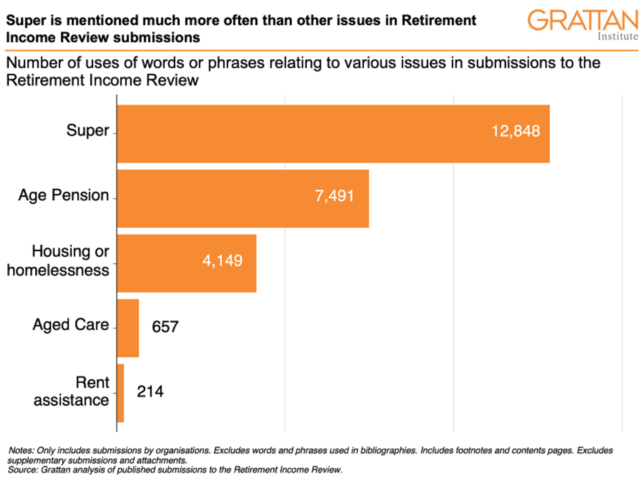
Obsessing about super unbalances the retirement incomes debate

Of course, superannuation plays an important role in helping people save enough for retirement, but it is just one part of Australia's retirement incomes system.

Retirees still draw more of their income from the age pension than from super. Most retirees own their homes, and that supports their living standards. And access to universal health and aged care services supports the living standards of all retirees.

Superannuation will account for a larger share of retirement savings as the system matures, but other sources of retirement savings will remain important. Super savings still account for only 20-to-25% of the wealth of Australian households and many younger Australians continue to save outside of super.





The age pension will remain much more than just a safety net only for the poorest Australians. In fact, most younger Australians today can expect to receive half or more of their income from the age pension when they retire in three decades' time.

An unbalanced debate can lead to poor retirement incomes policy

An unbalanced retirement incomes debate can lead to poor policy choices.

Everyone agrees Australians should be able to expect an adequate retirement income. However, some in the super industry downplay the role that the age pension plays, and will continue to play, in supporting retirement incomes for middle-income earners. They argue that not only should middle income earners have a comfortable retirement income, but that that income should come predominantly from super – and their compulsory contributions during working life should be high enough to deliver that outcome.

Yet, as Grattan research has shown, raising compulsory super from 9.5% to 12% of wages, as already legislated, would force most Australians to save for a higher living standard in retirement than they have while working. It would cost the budget more in extra super tax breaks than it saves in reduced pension spending. And it would make pensioners today worse off since the pension is benchmarked to wages, which will grow more slowly should compulsory super contributions rise.

Rather than being a sign of super's failure, the enduring importance of the age pension to the retirement incomes of middle-income Australians is a sign of a healthy retirement system. The means-tested age pension provides valuable public insurance against longevity, returns and several other risks for most retirees.

Together with the broader tax-transfer system, the pension redistributes income towards low and middle-income retirees, reducing income inequality in old age. And recent projections suggest age pension spending will decline as a share of GDP in coming decades.

An excessive focus on super has also distorted the ways in which we try to reduce poverty among retirees. Attempts to top-up the super balances of low-income earners are not the most effective way of reducing poverty in retirement.

Instead, the best tool to prevent people suffering poverty in retirement is the income support system, specifically the age pension (and Commonwealth Rent Assistance for retirees who rent).

Whereas eligibility for superannuation top ups depends only on the income of the individual making contributions, eligibility for the pension is based on the income and assets of the whole household, including those of a spouse. And by assessing eligibility at retirement, the age pension better targets retirement incomes to those who need it most, rather than guessing who may or may not face an inadequate retirement income in 30-years' time.

Home ownership also crucial

The best predictor today of poverty in retirement is whether retirees own their own homes. And the problem will get worse because young Australians on lower incomes are less likely to own homes than in the past. That's why raising Rent Assistance by 40% should be the number one priority to reduce poverty in retirement, and at the least cost, yet submissions to the review mentioned super 60 times for each one mention of Rent Assistance.

A good retirement income system depends on much more than just super.

Brendan Coates is Program Director, Household Finances and Matt Cowgill is a Senior Associate at Grattan Institute. This article is general information and does not consider the circumstances of any individual.

The 'Heady Hundred' case for unglamorous growth

Jason Ciccolallo

Imagine you are at a cocktail party in May 2012. The conversation turns to the stock market, and your friend mentions that she bought Facebook at its initial public offering that month. Then you tell everyone that you just invested in a trucking business. While your friend instantly becomes the life of the party, you spend the rest of the evening staring into your drink.

Growth is not only about tech stocks

Your friend made a good call. Facebook's share price has risen almost sevenfold since the IPO. But your investment in XPO Logistics was also pretty exciting. Its share price performance was even with Facebook's as recently as January 2020, and both companies delivered similarly strong revenue per share growth through the end of 2019. Since then, the pandemic has been considerably more painful for XPO's shares than Facebook's, so you 'only' made about 400% overall. But both stocks trounced the S&P500's 200% return.

The lesson here is that great investments come in many different shapes and sizes, and they may not always seem obvious. The obvious winners in today's environment have been the so-called FANGAM stocks – Facebook, Amazon, Netflix, Google (Alphabet), Apple, and Microsoft. One can debate their valuations, but whatever your view of these giants, there is strong evidence of truly speculative froth elsewhere.

Recent research by Verdad showed that there are 500 stocks in the US – the 'Bubble 500' – that are both more expensive than the FANGAM shares and have worse fundamentals. The vast majority of the Bubble 500 are found in areas such as software, fintech, biotech, and healthcare equipment. It's the virtual happy hour stocks of the present day. A few may turn out to be future giants, but it's extremely unlikely that all 500 will work out anywhere near that well.

A check on the worst of both worlds

Taking a global view, we ran a similar analysis of our own on the FTSE World Index. We looked for stocks with the worst of both worlds:

- higher valuations than the FANGAM stocks
- weaker margins and slower revenue growth.

We found almost 100 such companies, which we call the 'Heady Hundred'.

Unsurprisingly, software, biotech, and healthcare equipment stocks are well represented, as is the US. As shown in the table below, these companies are about 50% more expensive than the FANGAMs on a price-to-revenue basis and about 30% richer on price-to-earnings multiples yet have delivered only half the revenue growth and with lower profitability.

Astonishingly, this group of stocks carries a market value of more than $3 trillion. To put that in perspective, the Heady Hundred are worth nearly as much as the entire Japanese stockmarket.

The Heady Hundred vs the FANGAMs: higher prices, slower growth, and lower profits

Weighted median valuation and fundamental characteristics

	Total market cap	Price / revenue	Price / earnings[1]	Revenue growth[2]	Profit margin[3]
FANGAMs	$6.9trn	6.6	28	20%	29%
The Heady Hundred	$3.1trn	10.1	37	10%	20%

Source: Capital IQ, Orbis. The FANGAMs are Facebook, Amazon, Netflix, Google (Alphabet), Apple, and Microsoft. The Heady Hundred are FTSE World Index constituents with higher price-to-revenue valuations, slower revenue growth, *and* lower profit margins than the weighted medians of the FANGAMs. [1] Using Capital IQ consensus estimates for 2021 earnings. [2] Compound annualised revenue growth over the past 10 years. [3] Average operating profit margin over the past 10 years.

A preference for boring, overlooked, hated

Of course, some of these may turn out to be great investments. Prices can often race well ahead of fundamentals for rapidly growing businesses. Amazon has never once looked attractive on traditional valuation metrics, but that hasn't stopped its shareholders from earning spectacular returns over its 23 years as a public company (Amazon's recent run has been painful for us to watch, having owned it but sold it far too early.)

The problem is that prices also race well ahead of fundamentals for all the other 'exciting' businesses that go on to falter. For those who fail to live up to their Amazonian expectations, the punishment can be swift and severe.

As contrarians, we much prefer the idea of investing in businesses that are boring, overlooked, or even hated. Not only are their fundamentals usually underappreciated, but there is far less room for disappointment since there is so much less enthusiasm reflected in the price.

Besides XPO, other examples in the Orbis Funds include US health insurers, emerging market banks and conglomerates, Japanese drugstores, and even a manufacturer of farm equipment. These 'boring' businesses have delivered revenue growth in excess of 10% per annum and some can even hold their own with the FANGAMs.

Most importantly, you don't need to pay a heady premium for it.

Jason Ciccolallo is Head of Distribution for Australia at Orbis Investments, a sponsor of Firstlinks. This report contains general information only and not personal financial or investment advice. It does not take into account the specific investment objectives, financial situation or individual needs of any particular person.

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Video: Brett Moshal: Our job is to be uncomfortable

Summary points

- The dramatic rebound in the second quarter has left equity markets much more nuanced and with fewer obvious bargains compared to late March.
- Some "Growth" stocks appear attractive, while others have never been so expensive. On the other hand, some "Value" stocks appear unusually cheap, while others have been justifiably punished.
- In Japan, we are finding good companies at great prices and with particularly attractive dividend yields.
- Markets globally remain highly uncertain, but as always, our focus remains on avoiding the risk of permanent capital loss by being disciplined about the price we pay.

Share Purchase Plans brickbats and bouquets

Stephen Mayne

Introduction: Stephen Mayne is compiling the most comprehensive database of retail Share Purchase Plans (SPP), maintained on his website here. Firstlinks previously published Mayne's explanation of the inequity of many raisings, where large institutions were given the vast majority of the discounted allocation and retail investors were heavily scaled back. This week in The Eureka Report, he highlighted two stocks in the buy-now-pay-later sector.

Afterpay received $136 million in applications, which was below the $150 million cap, and the SPP outcome announcement included:

"The SPP was sent to 53,465 eligible shareholders and 10,110 valid applications were received, representing a participation rate of 19% based registered holdings. The average application was $13,300."

Retail subscribers to Afterpay's $66 SPP received full allocations, and with the stock currently above $70, it was a contrast to the previous heavy scale backs. However, Mayne called Sezzle's treatment of retail shareholders 'appalling' when it announced a $79.1 million placement at $5.30, but with a $7.2 million cap in the retail SPP. Applications worth $78.2 million were received, but they stuck with the cap and will refund $71 million or 92% of application monies. The shares closed last week at $7.42, giving the undisclosed recipients of the $79 million placement paper gains of $31.6 million or 40%.

In this summary, Mayne gives out his brickbats (criticisms) and bouquets (praise) for the ways SPPs have been managed.

Brickbats

To Mesoblast, Temple & Webster, Open Pay, Salt Lake Potash, De Grey Mining and Red 5 Mining for all conducting institutional placements exceeding $20 million during the COVID-19 pandemic without offering retail investors a chance to participate on the same terms through a Share Purchase Plan. Retail investors have collectively lost billions through capital raising dilution so far in 2020 and placements, especially at big discounts, without SPPs are the most egregious form of offering.

To Super Retail Group, Southern Cross Media, Australian Finance Group and Ooh!media which banned retail investors from applying for any 'additional shares' in their discounted non-renounceable entitlement offers, meaning that the in-the-money offers all finished under-subscribed delivering windfall gains for the institutional underwriters and further diluting retail investors.

To the following companies for refusing to lift the caps on their Share Purchase Plans despite each of them being heavily oversubscribed:

- Atlas Arteria: after a $420 million institutional placement, capped the SPP at $75 million and stuck rigidly to that cap even after receiving $180 million in applications.
- Breville: after a $94 million placement, stuck with its $10 million SPP cap despite receiving $54.7 million in applications.
- Capitol Health: after a $30 million placement, stuck rigidly to its $10 million cap, scaling everyone back to a maximum of around $16,300. Also failed to disclose total applications.

There was a larger cohort of companies which expanded their capped SPPs in the face of strong demand but still imposed heavy scale-backs. A couple deserving brickbats for very limited expansions include Megaport which expanded its SPP from $15 million to $22.5 million but still refunded 77% of all applications after $99 million came through the door. Similarly, Dicker Data only expanded its SPP from $5 million to $15 million after $53.7 million came through the door meaning that 72% of all applications were refunded.

Surely a base case for popular SPPs should be that at least half the applications are accepted.

Bouquets

To all the companies which improved disclosure to give investors greater insight into the participation rates for their Share Purchase Plans. Specifically, here are ten examples of healthy SPP participation rates above 20% which wouldn't have been previously disclosed. Annoyingly, particularly for smaller holders, all of these offers (with the exception of Next DC) were scaled back based on size of shareholding:

- Ramsay Health Care: 52% (41,877 out of 80,273 applied for the SPP)
- Next DC: 51% (8,684 out of 17,015)
- Cochlear: 45% (16,651 out of 36,724)
- Breville:25% (3,104 out of 7,015)
- Lend Lease:7% (24,700 out of 60,688)
- Atlas Arteria:7% (9,300 out of 26,000)
- Iress:4% (2,800 out of 9,200)
- NAB: 25% (155,000 out of 615,000)
- United Malt: 25% (3,273 out of 13,092)
- Newcrest Mining**:** 23% (15,574 out of 54,107)

To all the companies which cranked up the regularity and detail of their ASX disclosures to keep investors fully informed about the impact of COVID-19. Payments company Tyro was a standout, effectively releasing monthly management accounts to the ASX showing how payments were travelling. Qantas was also commendable in terms of making regular and comprehensive disclosures to the market as events unfolded. Qantas CEO Alan Joyce also deserve credits for working for free during the June quarter.

Whilst renounceable pro-rata capital raising offers are preferred, these have been few and far between during the recent deluge of offers. This means the better structured non-renounceable pro-rata raisings are those that allow retail investors to apply for an unlimited number of additional shares to take up any shortfall left by fellow retail investors. In this regard, we give bouquets to the likes of Dacian Gold, Decmil, Reece, Kathmandu and Novonix for not limiting 'overs'.

To Ingenia, ARENA REIT, Charter Hall Retail, Charter Hall Social Infrastructure and National Storage for uncapping their SPPs after receiving total applications which exceeded the capped amount disclosed in the offer document. There have been far too many heavy scale-backs in 2020, so companies which end up doing an uncapped SPP should be congratulated, particularly if it means retail shareholders collectively increase their overall ownership of the company at the expense of the normally preferred institutional investors. Kudos also to Reece and Next DC for offering uncapped SPPs, which were always going to accept all applications from the outset.

Stephen Mayne is the Founder of Crikey, and also updates data and writes at The Mayne Report. This article first appeared in the ASA's Equity Magazine of July/August 2020.

Three things we have learnt about emerging companies in 2020

Tim Canham, Wik Farwerck

As the world entered the uncharted territory of a global pandemic, so did the financial markets. Never before has there been an external shock that has been met with so much fiscal support from governments and monetary support from central banks.

There's no doubt that this is providing a cushion at a macro level, and in Australia, a swift market downturn has been followed by a relatively strong upswing. But on closer inspection, there are still many variables that need to play out before we can draw conclusions about markets.

In the article below, we discuss three lessons learnt and what to expect in the unfolding reporting season.

1. The market doesn't always reward performance

Many companies have been hit hard by the impacts of COVID-19, resulting in a rush to raise capital in an effort to create financial buffers to weather the crisis.

However, other companies appear to have resilient earnings and have not needed to undertake the discounted and sometimes heavily dilutive capital raisings that others have. Yet despite this comparative strength, some of these companies have not been rewarded by investors with a positive re-pricing, and in some cases have even experienced a sell-off.

An interesting example is IPH (ASX:IPH), a company that files patents and trademarks on a global basis. It has proven a relatively stable business over many years, has not commented on earnings during the last few months and has not raised equity.

With an expected 2021 EPS of 40c (pre-COVID, and essentially unchanged today), the stock has gone from 25x PE to around 18.5x PE. In volatile times, we would expect a higher rating for visible earnings, and while we do expect some weakness in patent filings going forward, we don't believe that it would warrant such a downward price movement.

Furthermore, we believe the broader sectors of Mining and Mining Services should be given more recognition and higher ratings than they have been given over the past few months. Commodity prices have been strong for iron ore, gold and more recently base metals such as nickel and copper. Balance sheets in the sector remain strong and earnings visibility is as high as it's been for many years.

As an example, NRW Holdings (ASX:NWH) will likely meet or exceed guidance and has a strong forward order book with exposure to sectors such as infrastructure, iron ore, gold and civil construction. It has a positive outlook that should make the market notice its resilience and visibility. The stock trades on a PE of 7.3x next year – we believe it could be as low as 10x if it meets its guidance and continues to have a positive outlook.

Similarly, Independence Group (ASX:IGO), which mines nickel and gold, will show a balance sheet with $500m+ of cash and investments and has beaten production forecasts. It pays a dividend and has growth options. It is on a 10% free cash flow yield. The company trades on an EBITDA multiple of around 5x. This appears cheap for a company exposed to the fast-growing electric vehicle sector which has significant demand for high quality nickel for its batteries.

We find that many strong cash generative businesses like these are simply not resonating in the current so called 'melt-up' in shares. Investors seem more focused on customer growth and revenue growth, as opposed to free cashflows and earnings.

2. Not all technology stocks are created equal

A big theme of the year has been the impact of technology stocks on the performance of the markets, both locally and in the US. While we don't want to weigh in on whether there is a tech bubble in Australia, we do think there are pockets of investor mania in fintech and artificial intelligence, where the road to any meaningful cashflow or profit seems very far out.

The technology sector has been very strong, and we own a number of companies in this sector, but the key is to be selective. Many of these companies seem to be growing their shares on issue rather than their returns.

Subscriber numbers and Total Addressable Market (TAM) are interesting but we are wary about the 'me too' effect. Afterpay (ASX:APT) was the first significant, listed buy-now-pay-later provider and now there are seven listed providers, with more to come. There will be winners and losers in the fintech space and we focus on ensuring they have a pathway to sustainable profit and cashflow.

Another aspect to consider in the technology sector for Australia is that there are some big global peers with significant access to capital. By nature, the sector is fast moving, and as a result the barriers to entry can be quite low.

3. Institutional investors are important when times get tough

As a large institutional investor, we are often asked about the wisdom of discounted capital raises and their dilutive potential for smaller investors.

Generally, when there is a strong share price performance from a company and it is 'hot' among investors, a company will capitalise on this and raise equity. Smaller (retail) investors will flock to the raising as the share price is going up. The reverse seems to be the case when an otherwise solid company is struggling, due to external factors, and the share price is weak. Smaller investors are less inclined to participate.

Overall, by the time a company comes to raise money, a large proportion has been de-risked by institutions, hence there may in some cases be an advantage for smaller investors. When a company needs equity in a short timeframe, it is not that feasible for a company to seek retail demand: their boards want some certainty of demand and success in a matter of hours.

The recent round of capital raisings, undertaken to provide companies with a buffer in the face of the pandemic, demonstrated the important part that professional investors play in the economy.

Looking ahead: themes for coming results season

The majority of companies are maintaining or changing guidance, or completely withdrawing their outlook. Most market participants are aware that the earnings estimates are likely erroneous or simply stale.

Some sectors, such as travel and pockets of retail, remain very difficult to forecast. Companies like Flight Centre (ASX:FLT) and Webjet (ASX:WEB) face the near impossible task of predicting when international travel will resume and also when domestic travel returns to reasonable levels.

Many companies have either already strengthened their balance sheet or have stated that their capital position remains sound. The problem for both companies and investors is that balance sheets are a 'snapshot' and their level of soundness can be directly correlated to the ongoing duration of the pandemic.

It is likely that some companies raised capital with a view that the pandemic would be near over by now, and hence may be forced to come back to the market for additional debt or capital.

Some themes worth noting:

1. Companies will remain cautious so don't expect guidance or outlook statements from the majority of companies.
2. Potential ending of some fiscal stimulus measures such as JobKeeper will be at the forefront for some companies and investors.
3. Check how the company has adapted to potential longer-term implications of this crisis? Issues like supply chains, online capability, remote working arrangements, appropriate gearing levels, customer concentration, rental arrangements and travel to name a few.

So, we aren't expecting that the reporting season will be a disaster, but we do expect there will be some confronting news when investors see the actual numbers and the outlook.

Tim Canham and Wik Farwerck are Senior Portfolio Managers at First Sentier Investors (Australia), a sponsor of Firstlinks. This material contains general information only. It is not intended to provide you with financial product advice and does not take into account your objectives, financial situation or needs.

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What does the 'fear gauge' VIX really mean?

Tony Dillon

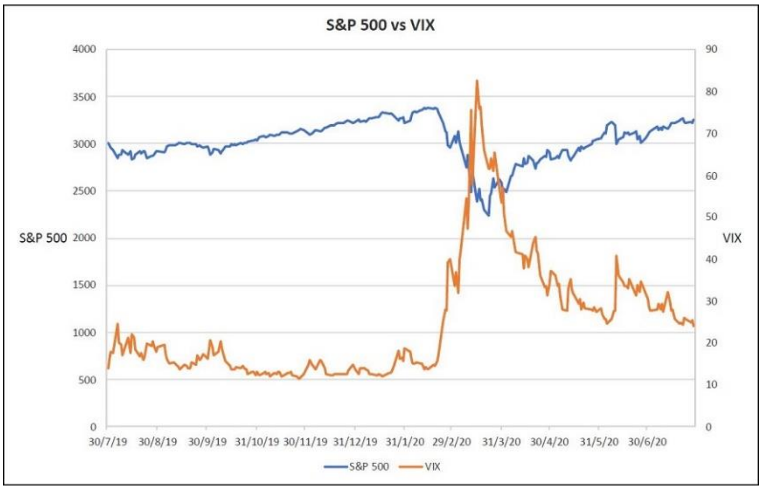
When COVID-19 unleashed itself in mid-March, the VIX exploded to a peak of about 83 points, up from just 14 when the US S&P500 index closed at a record high on 19 February. The lifetime average of the VIX is 19. But what do these values mean and how are they calculated?

The fear gauge grabs the headlines

Much has been made of the Chicago Board Options Exchange Volatility Index (VIX) in these COVID-19 times. Often referred to as the 'fear gauge', it measures volatility at a market level. Specifically, the VIX measures the market's expectation of volatility in the S&P500 index.

It regularly features in discussion in financial circles in times of market turmoil, such as when the pandemic began to wreak havoc. And while the VIX itself is well known among investors, the interpretation of it is not.

As can be seen in the chart below over the last 12 months, an inverse relationship often exists between the S&P500 index and the VIX. When markets go into a tailspin, demand for portfolio hedging increases, concern mounts, and large fluctuations in daily price movements are expected and usually eventuate. So as markets plummet, volatility measures rise.



Volatility in this context, refers to the variability of a stock's price, or market index. And a typical measure of that volatility is the standard deviation of the percentage change in stock price or index level over a period.

Standard deviation in this instance refers to the variability of the stock's return around the mean of its return over a period. The greater the fluctuation, the larger the standard deviation. Hence a stock with a large standard deviation suggests that it is erratic in its performance with high variability of returns, and so it might be thought of as more risky.

Back to the VIX

The VIX is derived from exchange-traded options on the S&P500 market index, rather than the index itself. An option is a contract that gives the owner the right to buy (a 'call' option) or sell (a 'put' option) without obligation a specific security at a specified price, on or before a specified date. The underlying security may be an individual stock or a sharemarket index, like the S&P500.

Options are versatile investment instruments, used to speculate, hedge risk or derive income.

It is possible to calculate a theoretical, or fair market value, of an option using the universally-renowned options pricing tool, the Black-Scholes model. The inputs required are the option strike price, the option's expiration date, a risk-free interest rate, and critically, anticipated and constant volatility up to the expiration date. The model also assumes that the returns on the underlying stock are normally distributed.

The key point is that the option's modelled price is forward looking as far as volatility is concerned. That is, embedded in the price is *expected future volatility*, as opposed to historical volatility.

When stock or index options are traded in the open market, their price is subject to market forces, just as with any traded security. And the market price is usually different to the theoretical price due to normal supply and demand forces, liquidity, and fluctuating views underlying the option's volatility expectations.

Given the market value of an option, therefore, it is possible to work backwards and calculate the volatility implicit in that price. Investors are then able to compare the implied volatility with their own volatility expectations, to potentially exploit any mispricing.

The concept of implied volatility is really what the VIX represents. It is essentially a hypothetical, implicit volatility measure based on multiple S&P500 index options. A basket of call and put options of varying strike prices, with expiry terms centred around 30 days, feed into the calculation.

So what is the VIX, in (relatively) simple terms?

In simplified terms, the calculation is an amalgam of weighted option prices, each with implicit volatility. It determines a contribution from each option according to strike price, strike price intervals, and the option's market price. Mathematical manipulation results in a hybrid 30-day, S&P500 implied volatility measure, which is then annualised to give the final VIX value.

What does a calculated VIX value mean?

Consider the lifetime VIX average, a value of 19. This is an annualised figure for presentation. But recognising that the VIX is a 30-day volatility measure, it represents the expected range in which the S&P500 will trade over the next 30 days with a probability of 68%. That probability is the percentage of values one standard deviation (the VIX measure) either side of the mean of a normal distribution.

An annualised value of 19 converts back to a monthly value (standard deviation) of 5.5 (which for the mathematicians is $19 / \sqrt{12}$). This means that the S&P500 index is expected to trade in a range 5.5% lower than its current level to 5.5% higher, 68% of the time in the next 30 days.

It also means the index should trade between -11.0% and 11.0% of its current value over the next month, 95% of the time, being the probability of being within two standard deviations either side of its value.

That the VIX could get to a peak of 83 on 16 March, as COVID-19 was exploding, meant that the market was expecting the S&P500 to move in a range of +/-24% over the ensuing month with a probability of 68%.

That is, not an insignificant probability (32%) that it could actually trade outside those bounds. Swings of that nature are almost unheard of.

The VIX as a measure of risk has a place in equity markets in interpreting market sentiment. But it is perhaps overly simplistic to think it can represent the volatility in equities as a whole.

Tony Dillon is a freelance writer and former actuary. This article is general information and does not consider the circumstances of any investor.

Where we see growth opportunities in software stocks

Kent Williams

In the current environment, finding companies with above-market earnings growth over the medium-term backed by positive catalysts is becoming increasingly challenging. In our view, investors looking for these attributes could consider enterprise financial software companies.

Favourable investment catalysts

We believe these companies should deliver strong shareholder returns over the medium-term given numerous favourable industry tailwinds and investment attributes, including:

- Many legacy systems across the financial services industry are in need of major refreshing
- Growing demand for customer-focussed offerings within the Australian superannuation industry
- Heightened demand from customers of wealth management, pension providers and life insurance firms for mobile and digital solutions
- Highly sticky customer bases
- High degree of recurring revenue
- Extended visibility into the sales pipeline creating greater earnings certainty.

Enterprise financial software firms will benefit from two key goals, which are often interrelated:

- Migrating the middle and back office legacy systems to a current software solution as a means of improving efficiency.
- Improving the customer experience given changing consumer demands.

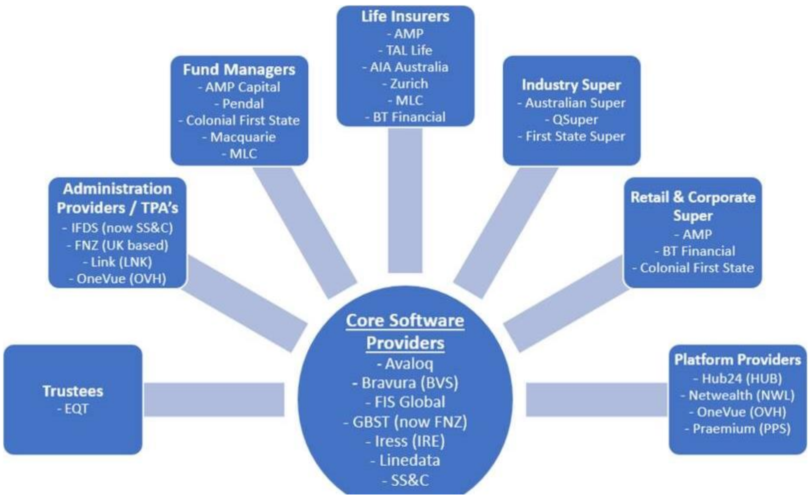
These catalysts as well as a simple framework demonstrating our approach to investing in this industry are detailed below, in addition to ways investors can gain exposure to this sector of the market.

Industry snapshot

Enterprise financial software companies provide the core operating and product systems for a range of financial institutions including wealth managers, superannuation providers, insurers and often also the associated third-party administrators (TPAs). Their software products can touch the front, middle and back offices, with the majority of software firms having customers across multiple geographies.

It's the software providers that allow financial services firms to deliver new products with unique customer-focused propositions aligned to the constantly evolving regulatory landscape. These critical elements are either costly to manage or prohibitive to achieve on internally developed or legacy systems. New technology solutions allow financial services firms to focus on their core business and to compete more effectively against their peers.

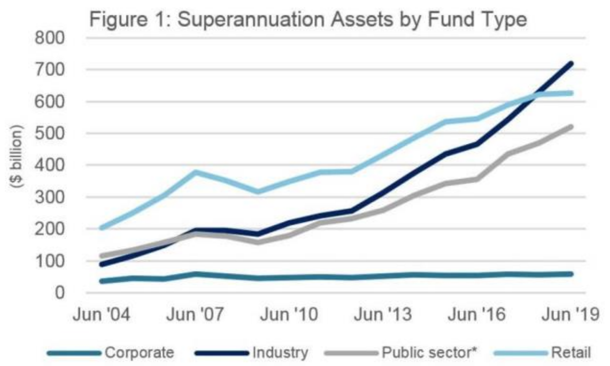
The following diagram highlights the wide-reaching nature of the enterprise financial software providers within the Australian financial industry. This industry breadth and depth is a key value driver, and it's almost certain you have had a customer experience that was powered by these (mostly unknown) software firms.

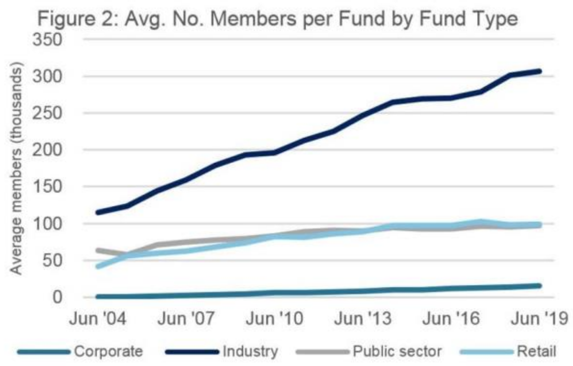


Source: AMP Capital

Australian superannuation industry growth

Figures 1 and 2 below highlight the growth in superannuation where industry funds now have more assets and members than any other fund type. The average number of members per industry fund also far exceeds any other fund type, driving an increasing need for technology to manage scale and provide an improved customer experience, particularly as mobile savvy millennials become a larger portion of the member pool.





**Public sector assets have been restated to remove the adoption of AASB1056 for comparison purposes. Past performance is not a reliable indicator of future performance. Source: APRA June 2019*

With this ongoing growth, super funds need improved customer service with a deeper, more targeted offering typically utilising technology via mobile oriented solutions. This provides an opportunity for super funds to adopt a technology enabled in-house model as opposed to utilising TPA’s or heavily manual processes.

A recent example of this occurring is the Iress (ASX:IRE) and ESSSuper agreement, where ESSSuper will transition to the Automated Super Admin product offered by Iress.

Such operating models enable super funds to more closely own the customer relationship, which will become even more important as the industry continues to scale and to offer broader, more compelling customer-focused products.

Customer centricity

Many large firms both in Australia and offshore (particularly the UK) operate on legacy systems cobbled together from multiple acquisitions. Such systems prohibit a deep level of customer focus, typically resulting in customers being under-served relative to other industries. With heightened regulatory requirements, these legacy systems are an increasing cost burden on firms to stay relevant to new regulatory requirements.

A best-in-class technology creates the potential for wealth managers, pension providers and life insurers to regain control of the customer relationship. Achieving this should create long-term benefits through building a deeper and more meaningful relationship with the end customer, while also reducing the regulatory burden on firms.

A useful diagram contextualising this was provided in an ASX release from Bravura Solutions (ASX:BVS) and shown below.

Source: ASX Announcement (BVS) 20 February 2020

Manual processes unable to scale

Firms with heavily manual processes are under increasing pressure to find solutions that overcome issues with fluctuations in demand. This has recently been witnessed during COVID-19, where firms across multiple industries with heavily manual processes were unable to provide a consistent level of service in peak customer demand periods. We see this as a catalyst for financial services firms to revisit their business processes and believe technology will almost certainly be at the forefront of any solution that enables scale.

How we think about investing in this sector

The decision for a business to change its core technology is by no means a small one. Costs are extremely high – generally upwards of $100 million on large deals – and unsurprisingly, it's not straightforward to migrate to a new system, with new implementations typically taking up to 36 months. Cases of failed implementations are also not unheard of, although none relating to ASX-listed companies that we are aware of. Given these dynamics, there is a high degree of inertia with customers reluctant to migrate their technology.

Keeping the above factors in mind, our investment analysis within this industry is focused on answering two key questions:

1. Are there significant reasons for financial services firms to review and migrate the core IT ecosystem? Put another way: What is the sales pipeline and how likely are these leads to convert into revenue?
2. Which software provider appears to have the best-in-class technology offering?

These questions may seem simplistic, however when assessing an investment where opportunities for new sales could be lumpy but very significant when they come, it is important to clearly understand which software provider is likely to be the biggest beneficiary of an increased sales pipeline within the industry.

Furthermore, we are also mindful of valuations across the sector particularly as it relates to the earnings growth the company is expected to deliver over the medium term.

How we are gaining exposure

In our view, Bravura Solutions and Iress Ltd provide exposure to the market opportunities mentioned above. Both have an overlapping product suite, with Iress having a larger market share in the financial planning space and Bravura having a deeper offering and more customers in the enterprise financial software space.

We believe that both companies share similar characteristics with reasonable balance sheets providing the optionality for further acquisitions (Bravura more so), offshore exposure, high degree of recurring revenue and valuations that look reasonable in the current market environment. Bravura is likely to deliver mid-teens earnings growth over the medium term.

In summary, enterprise financial software companies have favourable attributes and industry tailwinds that may see investors rewarded over the medium term.

Kent Williams is a Small Caps Analyst at AMP Capital, a sponsor of Firstlinks. This document has been prepared for the purpose of providing general information, without taking account of any particular investor's objectives, financial situation or needs.

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Five ways to use the family home for retirement income

Arthur Naoumidis

The family home is set to become a more integral part of many people's retirement income strategies. There are myriad reasons for this to happen but three stand out:

1. Inadequate superannuation balances

The federal government is still doing the heavy lifting in supporting most people in retirement via a part or full pension, despite Australia having compulsory superannuation for nearly 30 years. Most people will remain eligible for a pension at retirement.

It's not hard to understand why. One of superannuation's commonly quoted benchmarks, the APRA Retirement Standard, maintains that for a couple to enjoy a comfortable retirement they need an annual income of $62,000. Nothing lavish, but comfortable.

That number is based on assumptions such as a couple owning their own house, but it excludes savings and investments outside super and having no other sources of income in retirement.

So how much money is needed at retirement to fund this annual income? According to *SuperGuide*, to earn $62,000 for 25 years, a couple's required savings spans from $410,000 (assuming a 7% return) to $1,020,000 (assuming a 2% annual return).

With the cash rate at 0.25% and volatile markets, assumptions about investment returns should probably tend towards the more conservative end of the spectrum. But even at a generous 4%, $700,000 is required.

Yet that sum of $700,000 falls well short of the average balance at retirement, estimated to be about $450,000 for men and $375,000 for women. These people will go on to a part pension, at least. And that's not about to change, with the Productivity Commission's 2018 report showing an average fund member enjoying the Super Guarantee all their working lives will still fall short of this target.

These numbers were also compiled before COVID-19, and this tragic pandemic is already having an impact on its assumptions in one obvious way: the government's decision to allow people to make early withdrawals of up $20,000 from superannuation for the 2019-20 and 2020-21 financial years. A 30-year-old who withdraws the $20,000 is sacrificing an estimated $43,000 on retirement at age 67.

2. Longevity and demographics

The flip side of superannuation balances falling short is demographics. Some couples will live longer in retirement than 25 years. In 2017, there were 3.8 million Australians aged 65 plus or 15% of the population, a figure that is projected to grow to 8.8 million by 2057.

Looked at another way, 57% of seniors were aged 65-74 in 2017 and 13% aged over 85. By 2047, 20% will be over 85, with all the fiscal ramifications that implies. This ageing population will remain fitter and healthier for longer in retirement, ensuring bigger demands on their retirement savings.

3. Fiscal limitations

The federal government's stimulus packages to counter COVID-19 means Australia is experiencing its biggest budget deficit since World War II and future governments will need to rebuild the country's balance sheet. It would be naïve to think that future treasurers will not cast an envious eye over the super honey pot that is approaching $3 trillion.

At the last election, Labor signalled its intention to limit the claiming of franking credits on Australian equity dividends. Although that proved politically unpalatable, the country is now in a far more fraught fiscal position. Tough times could demand tough measures.

There are at least two other tax options: increasing the headline super tax rate of 15% and reducing the capital gains concession from the current one-third. Although the latter would have minimal fiscal impact, the former could do some heavy lifting.

But robbing Peter (Australians in the accumulation phase) to pay Paul (the deficit) would come at a high cost to the former, with research showing that lifting the tax rate to 25% would cut $150,448 off the retirement savings of someone retiring at 67 on $682,146 (the Productivity Commission's projected figure).

Five ways to use the family home for retirement income

The coalescing of these three factors suggests future governments will want the home to play a bigger role in people's retirement income strategies. It would surprise if the pending Retirement Income Review did not take a close look at how this asset can be better utilised as part of a retirement income strategy instead of simply being an inheritance for the children or grandchildren. The median house price in Sydney is about $1.1 million and in Melbourne $900,000.

Currently, there are five ways the family home can be used to generate income, and they all come with pros and cons. In the future I would expect there will be greater sophistication about how this asset can be used for an ageing population with limited superannuation and governments needing to rein in the deficit. But this is what's on offer now, with some benefits and costs:

1. Downsizing

- Depending on the state of the property market and seller's price ambitions, sale time can be relatively quick.
- Good option for those seeking a sea change, tree change or simply smaller accommodation.
- The cost of selling and relocating can be prohibitive, including agent's fee, advertising, stamp duty on new property, any modifications and relocating expenses. The costs eat into the gain.
- The emotional stress of being unable to afford to relocate in the same area and having to move away from family, friends and familiar surroundings.
- The potential ability of the over-65s to put some proceeds into superannuation.

2. Reverse mortgage

- Equity release product allows access some of the capital in the house.
- Minimum age to participate is 60.
- Typically, mortgage limited to 15-20% of the equity, minimum loan $10,000.
- Choice of regular payments, lump sum or both.
- Better suited for those without dependents.
- A credit product so financial planners need an Australian Credit Licence (ACL) to offer advice.
- Only available in selected postcodes.
- Interest rates fluctuate and can move against borrower, with the consequence of reducing equity in the property, so the final outcome is unknown.
- Take-up of this product has declined, in part because people, having paid off their house, are reluctant to create another debt over it.
- Interest owing on the debt is capitalised, increasing the debt burden.

3. Government Pension Loans Scheme

- Government reverse mortgage offering regular income stream, can be short-term or indefinite period.
- No lump sum payments.
- Regular payments cannot exceed 150% of the pension payment.
- Loan can be repaid in full or part at any time.
- The full amount of the loan plus interest owed at the time of the death of the person will be recovered from the person's estate.
- Current interest is 4.5% with eligibility requirements.

4. Wealth release

- Offered by Homesafe Solutions, a joint venture between the Szabo Group and Bendigo Bank.
- Launched 10 years ago to provide a debt-free equity release solution for older Australians.
- Unlike a reverse mortgage, Homesafe buys a share of the future sale value of a house. The homeowner retains the title deed.
- Homesafe calculates the payout based on (a) the future share of the house to be sold (b) homeowner's age (c) house value today. The payout can range from $25,000 to $1 million.
- In return for a lump sum up front, Homesafe receives an agreed percentage of the future sale proceeds of the house. There is no time limit on any sale.
- Homeowners can buy back their share at any time.
- Homeowners can still rent out the property and retain the income.
- It is a real estate product. Financial planners cannot offer advice on it.

5. Fractional senior equity release

- Currently only offered by fractional investment manager DomaCom.
- Equity-based not debt.
- Accessed exclusively through licensed financial planners requiring seniors to obtain advice first.
- Investors get a fixed rental income and a share of the property's capital gain at the time of sale.
- Investors can include family and friends and may be able to use their superannuation to invest.
- Base service fee is 4.4% p.a. fixed for life of the contract.
- Seniors have permanent right of abode.
- Some of the equity released is used to pay rent on the 'fraction' of the property released.
- If the homeowner chooses, they can rent the property out and keep the rent.
- Choice of lump sum or a regular payment.

- Maintenance, repairs and insurance are shared with investors.
- On selling, seniors and investors each get their percentage of the sale price.

In future, expect the government to demand the family home pay a greater role in financing retirement, with borrowers needing to assess the wide range of products available for their unique circumstances.

Arthur Naoumidis is CEO of DomaCom. This article is general information and does not consider the circumstances of any investor.

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