



Investment Newsletter – April 2023

High Rates yet high growth era ahead

Let's start this letter by taking a quick review of the markets.

Market performance

Since the beginning of 2023 until now, the Australian stock market has experienced a +6% increase, with the US market up by +8.5% and US technology stocks soaring by +17%.

Additionally, Australian shares are presently generating a robust gross income of 6% per annum, while fixed-interest investments are yielding over 3.5% per annum. Despite the prevailing uncertainty in the near term, as consumers and businesses adjust to higher interest rates, stocks are trading under fair value, thus presenting an opportunity for investors to allocate their built-up cash into the market in the coming months.

In the near term, economic conditions will be sluggish as consumption is expected to slow as the Reserve Bank of Australia (RBA) engineers a slowdown to tackle inflation. Naturally, business activity is also slowing in an overall sluggish economic environment, with overall profitability expected to remain flat in 2023 & 2024. Consequently, inflation is decreasing from its peak levels, it may still settle at moderately higher levels than what we have seen over the past decade.

Exciting Growth Ahead

Beyond the sluggish growth of the next two years, we expect economic activity to rebound due to the four key factors:

- 1) The global energy system is undergoing a once-in-a-century transition from fossil fuels to renewable energy, with trillions of dollars expected to be invested in this process.
- 2) The intensifying competition between the US and China is expected to result in high levels of investments in domestic and friendly economies.
- 3) The rapid pace of technology innovation, particularly in Artificial Intelligence (AI) and computing power, is reminiscent of the growth experienced in the 1990s, and we anticipate new industries and increased productivity.
- 4) Finally, the role of governments is expanding, particularly after rewriting the social contract by bailing out the economy in the Financial Crisis of 2008 and successfully snap-freezing the economy during the COVID-19 pandemic. As China/US competition ushers

an era of defence build-up, we can expect emboldened governments and increased expenditure (i.e., fiscal deficits) facilitated by freely minted currency and occasional tax increases, in the name of levelling the playing field between the haves and have-nots.

Simple Investment Philosophy

We continue to advocate for remaining invested in good businesses (stocks) that solve real-world problems and appeal to needs over wants and have pricing power. We will invest in companies that deliver to the 'wants' if the price is right.

We like companies that operate in industries that will grow over the long term and operate in friendly countries. We like businesses that don't borrow too much and have strong, durable cash flows. We like Management teams that have the discipline to use their net cash flows wisely, by paying healthy dividends and reinvesting for long-term growth in their businesses. We like to invest in the shares of such companies and invest in their bonds for income.

We do not accept the idea that government bonds are risk free, and we are not inclined to invest in them if they offer returns that are well below the inflation rate. We exercise caution when lending money to governments that have no intention of balancing their budgets and continue to accumulate debt. We apply the same level of prudence when dealing with unprofitable companies, so why should governments be treated any differently?

We like gold as a hedge against inflation over the long term as the value of fiat currencies will continue to come under long-term downward pressure from structural budget deficits and money printing. We like real assets and property that has utility, well located to capture occupancy, and rental income that grows in-line with inflation.

Finally, there will always be reasons to hold a negative perspective and reasons to sell. But over time, human endeavour always conquers whatever the issues are that seem so overwhelming at the time. Stay invested, stay diversified and try to be sceptical -not cynical!

In the next section, we take stock of the main economic issue of inflation & interest rates and how we see these play out in the short and medium term.

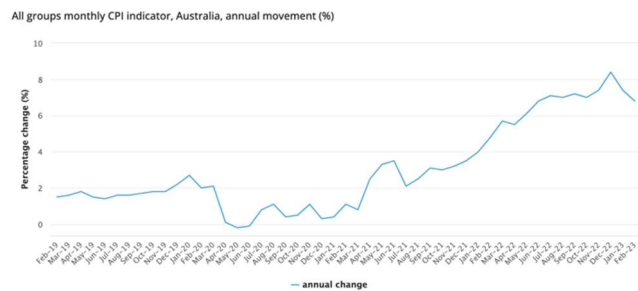
Economic conditions

Inflation continues to be the most significant topic occupying the minds of anyone who has a dollar to spend or invest, and borrow.

Inflation is easing...

The good news is that inflation looks to have peaked for now. Inflation has been decisively coming down in the US over the past year and in Australia it is just beginning to peak and should start stepping down in the months ahead.

Figure 1: Australian inflation slowed to 6.8% in February 2023 after peaking in Dec 2022 at 8.4% (Source: RBA)



Source: Australian Bureau of Statistics

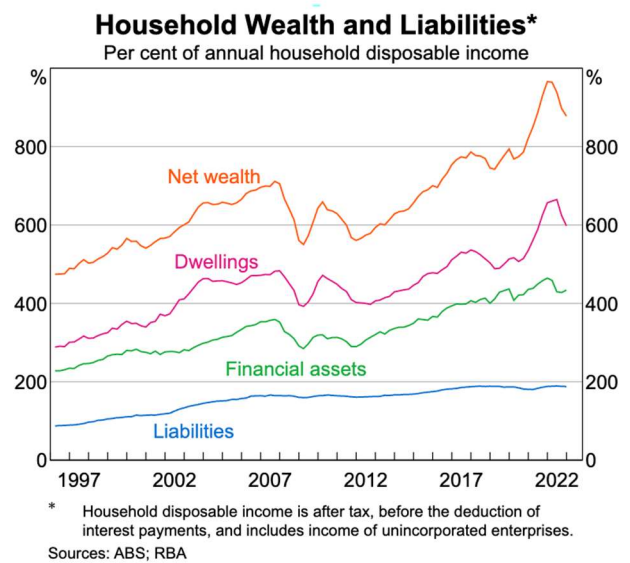
The issue behind inflation in simple terms is that there has been too much demand for goods and services in the economy and not enough supply of labour and materials. The demand is coming from consumers, the government, businesses, and people of the world who buy our commodities and services (i.e. net exports). All of these actors are drawing on the limited supply of materials and labour in our economy. All actors got plenty of fiat money to throw around funded from previously cheap borrowings + significant net wealth gains over the past decade and in the case of governments, well, they just print the stuff.

...and households are resilient to higher cost of living

The surprising resilience in the spending power of households in the current economy stems from having built-up solid net worth over the past years. This provides households with more options and flexibility to navigate economic uncertainty and higher interest rates.

Figure 2 below shows that households' net wealth has grown much faster than their liabilities over the past decade. This wealth is in real estate which has doubled in value. The wealth is also in financial assets that generated stellar returns over the decade e.g. Australian shares (+80%, ASX200), US shares (+215%, S&P500) and we are not including the dividend returns here either. Global bonds would have delivered approx. +26% over the past ten years (we have used PIMCO Global Bond fund here as a proxy) and so on.

Figure 2: Australian households have accumulated significant net wealth



Higher interest rates to persist because higher inflation will persist

For now, Australian central bank (RBA) remains dogmatically committed to bringing inflation down to the target of 2-3% p.a. by reducing consumption of households & businesses. The only tool it has on hand is to raise interest rates & continue threatening the borrowers with further interest rate increases ahead. Over the past year, the official interest rate has risen from 0.1% to 3.6% currently.

The RBA is currently on pause for further rate increases because it can see inflation is starting to come down. However, it is going to be a tall task to bring inflation down to 2-3% and importantly keep it there for reasons we explain below! So, there is a possibility that interest rates could go higher over the next two years.

Unemployment in Australia is expected to remain very low between 3.5-4% for the next two years. Provided everyone that wants a job, has a job combined with net wealth supported by largely intact asset prices it is thus going to be a tall task for the RBA to hold down consumption and bring inflation down to 2-3%.

The past fifty years of economic history suggest that the RBA in the past had to raise interest rates much, much, higher than the rate of inflation (and hold rates there for a long time) to bring inflation down. This helps to explain that despite the sharp increases in interest rates to 3.6%, we still have a situation of inflation sitting much higher at close to 7% in Australia. So, expect higher, not lower, interest rates as a base case!

Additionally, longer-term changes are currently underway in the global economy pointing to a moderately high inflationary environment in the years ahead. The pressure on the available supply of resources is set to continue (particularly the metal commodities, energy, and labour) due to the demand from the following factors:

- **Trillions of dollars to be invested in the transition to renewable energy infrastructure (which will take years)** – we understand not everyone subscribes to the climate change theory, however, there is now clear consensus amongst big capital and major governments for the need to stop climate change. The discussion now is on the speed of change and it is accelerating.

- **Infrastructure investment in re-shoring global supply chains** - The strategic competition between China/Russia on one side and US/Allies on the other will just continue to intensify. Each side will require rebuilding previously outsourced industry and upgrading domestic transport infrastructure of all manner within the orbit of each side's influence.

- **Ageing population** – advanced economies have for years been suffering from low birth rates which are not sufficient for the replacement and growth of their population. They have had to rely on immigration for population growth. Aging demographic will require more health spending and chronic disease burden will take more people out of the full-time labour pool and affect labour productivity. The younger population saddled with the debt of the previous generations and the burden of the aging population are unlikely to settle for wage increases of 2% p.a. So, expect the services sector to continue feeling the pressure of higher wages. The resurgent labour unions are already out on the streets!

Therefore, expect inflation to persist at moderately higher levels in the years ahead as the recent past of ridiculously low interest rates is now thankfully behind us, savers can look forward to higher rates with an increasing number of income options ranging from higher yielding bank term deposits, term annuities, and attractive income returns on fixed interest securities.

GLOBAL MARKETS OVERVIEW

	Units	Month End Value	Price Performance (% Chg)			
			1-day	1-mth	6-mths	1-year
Developed Markets Equities						
ASX 200	AUD	7,178	0.78%	-1.11%	10.87%	-4.29%
ASX 200 Futures	AUD	7,191	0.71%	-0.51%	12.31%	-1.63%
Dow Jones	USD	33,274	1.26%	1.89%	15.83%	-4.05%
S&P 500	USD	4,109	1.44%	3.51%	14.61%	-9.29%
Stoxx Europe 600	EUR	458	0.66%	-0.71%	18.05%	0.43%
FTSE 100 (UK)	GBP	7,632	0.15%	-3.10%	10.70%	1.54%
DAX (Germany)	EUR	15,629	0.69%	1.72%	29.01%	8.42%
CAC (France)	EUR	7,322	0.81%	0.75%	27.07%	9.95%
Nikkei 225	JPY	28,041	0.93%	2.17%	8.11%	0.79%
Emerging Markets Equities						
MSCI Emerging Markets	USD	990	0.46%	2.73%	13.07%	-13.27%
Shanghai Composite	CNY	3,273	0.36%	-0.21%	8.22%	0.64%
South Korea	KRW	2,477	0.97%	2.65%	14.91%	-10.18%
Taiwan	TWD	15,868	0.12%	2.35%	18.20%	-10.32%
Brazil	BRL	101,882	-1.77%	-2.91%	-7.41%	-15.10%
South Africa	ZAR	70,498	-0.83%	-1.67%	22.84%	2.90%
Foreign Exchange						
AUDUSD	Currency	0.6685	-0.40%	-0.65%	4.45%	-10.65%
AUDGBP	Currency	0.5420	0.01%	-3.17%	-5.50%	-4.83%
AUDEUR	Currency	0.6166	0.18%	-3.10%	-5.59%	-8.81%
AUDCNY	Currency	4.59	-0.34%	-1.79%	0.20%	-3.44%
Commodities						
LME ALUMINUM 3MO (\$)	USD/mt	2,413	1.13%	1.69%	11.61%	-30.88%
LME COPPER 3MO (\$)	USD/mt	8,993	-0.09%	0.36%	18.96%	-13.32%
LME NICKEL 3MO (\$)	USD/mt	23,838	2.75%	-3.86%	12.94%	-25.75%
SILVER FUTURE May23	USD/oz	24.16	0.70%	14.64%	25.21%	-5.80%
ICE Newc Coal Fut Apr23	USD/mt	193.00	2.93%	-0.57%	-48.24%	-3.21%
62% Import Fine Ore in USD	USD/t	121.30	0.00%	3.79%	26.88%	-14.87%
Gold Spot \$/Oz	USD/oz	1,969	-0.56%	7.79%	18.59%	1.64%
WTI Oil	USD/bbl	75.67	1.75%	-1.97%	2.58%	-11.31%
Henry Hub	USD/mmbtu	2.10	7.69%	-16.00%	-67.19%	-61.75%
Com	USD/Bu	660.50	1.69%	4.92%	-2.51%	-11.79%
Wheat	USD/Bu	692.25	0.00%	0.11%	-24.88%	-31.19%
Fixed Interest						
10-Yr Bond Yield						
Australia	AUD	3.30%	-0.06%	-0.55%	-0.59%	+0.46%
US	USD	3.47%	-0.08%	-0.45%	-0.36%	+1.13%
Germany	EUR	2.29%	-0.08%	-0.36%	+0.18%	+1.74%
Japan	JPY	0.35%	+0.02%	-0.15%	+0.11%	+0.13%
Italy	EUR	4.10%	-0.14%	-0.38%	-0.42%	+2.06%
Australian Rates						
Cash Rate	AUD	3.60%	+0.00%	+0.25%	+1.25%	+3.50%
90-Day BBSW	AUD	3.71%	-0.01%	+0.11%	+0.65%	+3.49%
180-Day BBSW	AUD	3.80%	-0.03%	-0.16%	+0.23%	+3.09%
CBOE Options						
CBOE VIX (Volatility Index)	Index	18.70	-1.68%	-9.66%	-40.86%	-9.05%

Data as of 31 March 2023

Economic News

• **In Australia** the Reserve Bank of Australia (RBA) lifted its cash rate to 3.6%, the highest level since May 2012, while signalling a pause in its 10-month tightening cycle is in prospect for April as it expects goods inflation to moderate in coming months. Consumer confidence held

near a 30-year low in March as households fretted over mounting cost of living pressures and further policy tightening with 74% of respondents expecting rates to move higher over the next year, with 45% expecting a hike of 1% or more.

• **Global growth outlook.** OECD upgraded global growth forecasts for 2023 to +2.6% (U.S. +1.5%, Euro area +0.8%, U.K. -0.2%, Japan +1.4%, Australia +1.8%, China +5.3% and India +5.9%) and for 2024 +2.9% (U.S. +0.9%, Euro area +1.5%, U.K. +0.9%, Japan up +1.1%, Australia down +1.5%, China +4.9% and India +7.1%).



- **In US** - The US Fed increased interest rates to 4.75-5%, the highest since September 2007, projecting rates to end 2023 at about 5.1%, unchanged from their median estimate with median 2024 projection rising to 4.3% from 4.1%, while acknowledging recent banking turmoil is likely to result in tighter credit conditions for households and businesses as it downgraded 2023 GDP growth forecast by to +0.4%.

President Joe Biden unveiled a \$6.9 trillion budget proposal including \$5.5 trillion in tax increases over next decade, as the White House forecast economy expanding +0.6% in 2023 and +1.5% in 2024, inflation declining to 4.3% in 2023 and a slowdown to 2.4% in 2024, and unemployment rising to 4.3% in 2023 and 4.6% in 2024. Consumer sentiment deteriorated in March to record the biggest drop since June 2022, as assessment of both current and expected conditions worsened, despite 1-year ahead inflation expectations falling to +3.6%, lowest in nearly two years and 5-10-year inflation expectations remaining steady at +2.9%. Factory activity contracted in March by more than expected, with ISM's manufacturing gauge dropping to its lowest level since May 2020, as measures of new orders and employment retreated. According to Fed's latest Beige Book survey, U.S. economic activity increased slightly in early 2023, however, the outlook going forward remained less optimistic.

- **In China** – The central bank (PBOC) announced an unexpected cut to its reserve requirement ratio, cutting RRR for almost all banks, effective from March 27, in an effort to support lending and strengthen the economy's recovery from pandemic restrictions and a property market slump which has seen China start the year already in deficit for the first time since 2020 with the broad deficit in the budgets for all levels of government being 78.4bn in January-February. Economic recovery gathered pace in March, with manufacturing PMI staying in expansion state (albeit easing slightly over the month) and non-manufacturing PMI jumping to the highest level since May 2011, led by a surge in the construction sub-index to a record high.

- **In Europe** - The euro-area economy failed to expand at the end of 2022 as worse-than-expected performances in Germany and Ireland helped pull down initial growth readings with December Quarter 2022 GDP growth revised lower to 0% q/q and +1.8% y/y. Inflation declined in March with CPI up +6.9% y/y from +8.5% y/y in February, however, underlying inflation hit a record, with core-CPI up +5.7% y/y. Economic growth continued to pick up in March with overall rate of expansion rising to the highest level in 10 months, driven exclusively by the service sector as concerns over energy supplies recede, with manufacturing output broadly stagnating as demand continued to fall.

- **In Japan** BOJ left its negative interest rate and its cap on government debt yields untouched, as it stuck to its view that inflation at more than twice its 2% target level still isn't sustainable with BOJ Governor Haruhiko Kuroda announcing it is too early to discuss specifics for exit as inflation is expected to slow back to below the BOJ's 2% goal in mid FY2023. According to the BOJ's quarterly Tankan report, confidence among Japan's large manufacturers deteriorated to a two-year low in March Quarter 2023.

- **South Korea** Export slump extended through March, declining -13.6% y/y, which combined with -6.4% y/y decline in imports resulted in a trade deficit of \$4.62bn, the smallest in 6-months, leading to BOK warning that the economic impact of its monetary tightening cycle will intensify in 2023.

Global Markets

US markets. US markets were stronger in the month, with the Dow Jones up +1.9% and S&P500 up +3.5%. The ASX200 declined -1.1%.

In the month of April, WTI surged after OPEC+ announced a surprise oil production cut.

THE LONG READ

The leap to quantum computing is nigh

First Comes Data...

The real world around us is rapidly being digitalised. Consider for a minute the notion that our environment is a living system with infinite characteristics that we can measure, and capture and store the data on. The captured data can then be processed into information to help us have a greater understanding of our environment so we can better manage our lives e.g. predicting adverse weather, climate change & its impacts, pollution etc.

Similarly, consider industry and commerce which are also dynamic and living systems in which people trade, machines produce, business systems and processes are forever being developed and improved to transform raw inputs into finished goods and services.

The characteristics of these systems are also infinite and the more characteristics we measure in these systems through data capture the more we understand, predict, control and optimise industry and commerce to serve us better. Examples are endless; for instance, in a manufacturing plant, dynamically measuring the wear and tear of machine tools through continuous output of data assists in running the machines with most uptime and doing preventative maintenance just before they break down, this will minimise losses in production output and expensive emergency repair.

Then Come Gigantic Datasets...

The scope of data gathering is growing apace in all walks of life. Consumer sectors including games, finance, health, consumer goods & services, and more are identifying new ways to acquire user data. Let me specifically touch on the emergent bio-economy which promises to shape the future of such sectors as medicine and health care delivery. It relies on massive harvesting of biodata— DNA, health statistics, disease symptoms, and additional insights generated by our bodies.

Analysts estimate that the market for the health data collected through connected wearable fitness and medical devices, namely Internet of Things (IoT), will be at least US\$300 billion by 2025. These practices gather the building blocks of life and develop massive and ever-growing health data sets. These data sets present an opportunity for doctors to gather reliable, long-term patient insights to develop more targeted treatment plans. Individuals can monitor themselves health wise to log, for example, their blood pressure or blood sugar; cardiac and diabetic patients can thereby track their well-being.

These large volumes of data-sets at personal level and aggregated at society level will unlock immense and to-date unimaginable possibilities for improving our health, improving quality of life, and extending average age. Imagine doctors being able to receive real-time reporting of the effects of different drugs on a patient and using

this information to modify and optimize treatment plan rather than waiting on imprecise verbal feedback from patients and time-consuming and costly follow-up diagnostics and blood tests.

Given the widening scope of data being captured in the world, it should thus not come as a surprise to you that the amount of data that we are creating is rising exponentially. The world created 2 zetabytes of data (big number! it has 21 zeros) in 2010 and by 2025 we will create 181 zettabytes. That is an unimaginable volume of data which would have been ok if it just posed a storage challenge, but, the real emerging issue for companies like Google and Amazon, and countries like US and China is the immense amount of computing power required to retrieve and allow consumers, companies, and governments to convert this data into increasingly innovative and wide-ranging information for making decisions.

Then comes the power of knowledge from connecting these gigantic datasets and extracting insightful information. Human generated algorithms process data to create information...

Data itself is meaningless but once you start mapping data using algorithms, you convert data into meaningful information which is powerful for improving the accuracy of predictions and decision making. This applies to governments, industry, and individuals. Algorithms are set of computer coded rules that are applied on stored data with an objective of solving real-world problems and information is presented as solutions.

For example, my doctor can use my health data measured via my wearable fitness device(s) to identify correlations between my physical activity levels and heart health or weight management. Based on the analysis, the doctor can generate personalized recommendations for improving health outcomes. This may include exercise plans, nutrition recommendations, or medication changes.

Then comes computer generated algorithms...

Computer algorithms to date have been generated by humans to analyse data, however, with the advent of Artificial Intelligence (AI), computers can generate their own algorithms, analyse the data, and make recommendations to humans for actioning or if we allow the computers then algorithms will act themselves.

It is a powerful and transformative technology and yes there is a lot of paranoia around how AI could potentially be destructive for humans, however, I am going to leave that debate for another article and focus here on the positives.

The fact is that AI technology is going to become mainstream from hereon in all facets of our lives and we need to understand what that means and where we can participate in this trend as investors.

Then comes the hitting of the wall of computing capacity as we know it today to process all the data in the world...

With gargantuan volume of data and algorithms to process, the focus is shifting to whether or not computing power as we know it today can keep up with the demand for processing information.

The current staple of supercomputers that run our internet are built on the fundamentals of classic computing which involves storing data in binary bits (1s & 0s) and then running sequential processing (one after the other) to generate information from the stored data.

In the coming years, classical computers are going to hit a wall in how much they can be stretched in their finite capabilities to handle the relentless avalanche of data and information processing needs.

Specifically, there is the issue of processing capacity of classical computers hitting the wall in the coming years. See, classical computers are made of microchips (we have written about microchips previously) that use transistors to store and process information. The size of these transistors has been shrinking over the past decades, which has allowed for an exponential increase in computing power. However, there is a physical limit to how small these transistors can become before they are no longer functional due to quantum mechanical effects, which basically means transistors become so small (smaller than atoms) that they start to lose their physical nature and start to be defined in terms of wave(energy)-particle duality.

This limit is commonly known as the “end of Gordon Moore’s Law” - the founder of Intel who predicted in 1965 that the number of transistors on a microchip would double every 18-24 months, leading to an exponential increase in computing power, which has certainly been the case.

However, scientists and tech insiders like Mark Bohr of Intel and Jamie Goldstein of Harvard are predicting the theory of end of Moore’s Law within the next decade or so. When this happens, it will become increasingly difficult to continue shrinking the size of transistors and increasing the number of transistors on a microchip, which has been the driving force behind the exponential increase in computing power over the past few decades.

So, what will be the solution for continuing the expansion of computing power in line with demand for data and information processing and avoid hitting the wall?

Then comes the biggest of all inflection points through the shift to quantum computing to super charge data processing...

Enter Quantum Computing

There is growing interest in an alternative computing processing power that can provide a new solution to the limitations of classical computing.

Quantum computers use quantum bits (qubits) instead of classical bits (0s & 1s), and they are not limited by the same physical constraints as classical computers, allowing for exponential increases in computing power.

In a classical computer, a bit can be in one of two states: 0 or 1. This can be represented physically by a switch that is either off (0) or on (1). Information is stored in the combination of multiple bits, with each bit representing a binary digit (or bits) of the overall value.

In a quantum computer, a qubit can exist in multiple states simultaneously, which is called a superposition. This means that a qubit can be in a state that is a combination of 0 and 1 at the same time. This is like having a switch that can be in two different positions at once. I won’t explain any further as it will confuse the readers, but suffice to say that if you view 0 & 1 as two ends of a continuous spectrum of data storage then qubits allow exponentially more amounts of data to be stored along this spectrum instead of being stored only at either end of the spectrum as 0 or a 1, as in classical computing.

This fundamentally changes the way computers process information, allowing them to perform calculations much faster than traditional systems.

Imagine the world where a computer can perform calculations that would take current systems millions of years to complete in mere seconds. For example, one way to describe the power of quantum computing is imagine having a toy box with lots of toys and trying to find your favourite toy. With a regular computer, you might have to look at each toy one at a time until you find the one you want. But with a quantum computer, you could look at all the toys at once and find your favourite toy much faster!

This is the world that quantum computing promises to create. With this incredible processing power, quantum computing will enable breakthroughs in many fields and handle the gargantuan increases of data that will need to be processed.

Quantum computing is poised to revolutionize the world of computing as we know it.

There are a number of companies ranging from IBM, Google, Microsoft, Intel, and Honeywell racing to develop their own quantum computers. These vendors will offer quantum computing to power cloud systems like Amazon AWS server, Google's cloud platform where myriad of applications will flourish to extract information from large and disparate data sets. Chat GPT is the latest example which is currently running on huge datasets fed into it but still it is being powered by classical computing, however at some stage it will move to quantum computing processors and will become unimaginably predictable, wise, and dare I say beneficial to us humans!

The investment returns for semiconductor stocks (as measured by VanEck Semiconductor ETF) over the past five years and one year have been streets ahead of the Nasdaq composite index, S&P500 index, and Australian Stock Index 200.

My sense is we will be seeing similar returns for quantum computing ETF/stocks in the next five years and beyond.

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