UNIVERSITY OF AUCKLAND INVESTMENT CLUB

INVESTMENT BULLETIN

STUDENT WRITERS · STUDENT OPINIONS

THE LEGACY OF HARRY MARKOWITZ, THE FATHER OF MODERN PORTFOLIO THEORY

BY ISABELLA HO

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Prices as at Friday 24th July 2023
unless otherwise stated

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An Update from the fund

A RUNDOWN OF THIS WEEKS PITCHES WRITTEN BY OUR INVESTMENT COMMITTEE ANALYSTS

CODAN

Codan Ltd (ASX:CDA)

By Sam Gowen & Freddie Clementson

Codan Ltd (ASX: CDA) Is an Australian-based group of technology companies specializing in the engineering of electrical circuits, comprising products such as metal detectors, radio technology, and communication hub systems to manage extensive call networks, i.e., first responders and the military.

All three of Codan's companies, Minetech, Domo Tactical, and Zetron, are market leaders in their respective niches, with their shared focus on R&D being the driving force behind their market dominance. The main opportunity for growth has been Codan's successful acquisition model, proven through the acquisition of two US-based communication companies; Domo tactical (radio technology) and Zetron (Communication hub tech). Its communications business has proven resilient throughout covid-19 due to infrastructure like network, which are sticky in nature.

Both companies acquired cumulatively earned over 150 million in revenue in their first year under Codans management and have shown to be successful additions to the business.

The Investment Committee voted in favour of passing the pitch to the valuation stage at a consensus of 9 Yes, 3 No. The Investment Committee liked the sticky natured contracts derived from defense and law enforcement spending, foreseeing opportunity in greater defense and law enforcement contract size.

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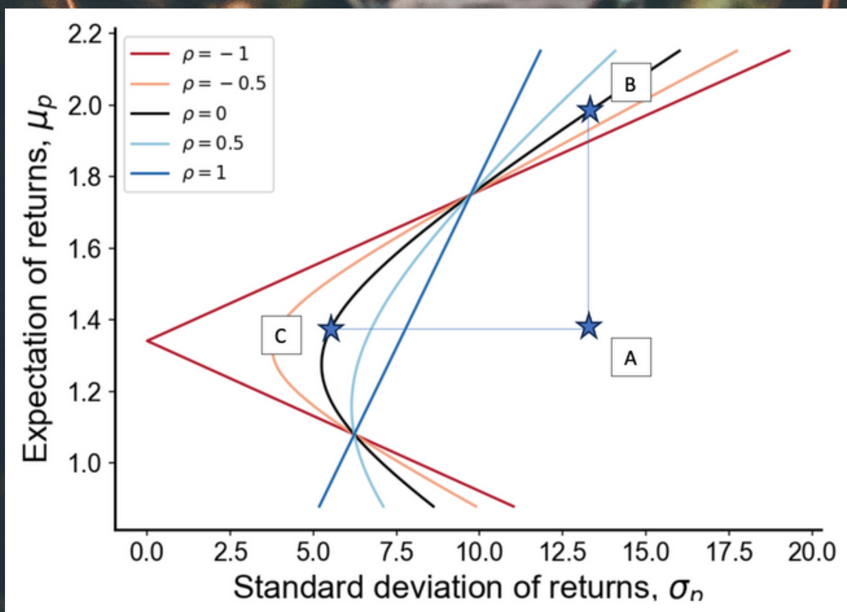
GLOBAL

The Legacy of Harry Markowitz, the father of Modern Portfolio Theory

BY ISABELLA HO

Diversification is no foreign concept to investors. If you know about risk and returns, you probably know that diversification is a risk management strategy. Last month, the passing of the Nobel laureate and economist, Harry Markowitz (1927-2023), has reminded us just how vital this concept is to modern portfolio theory. To me, the beauty of Markowitz's theory lies in its elegant expression; it begins with a simple hyperbola on a risk-return plane.



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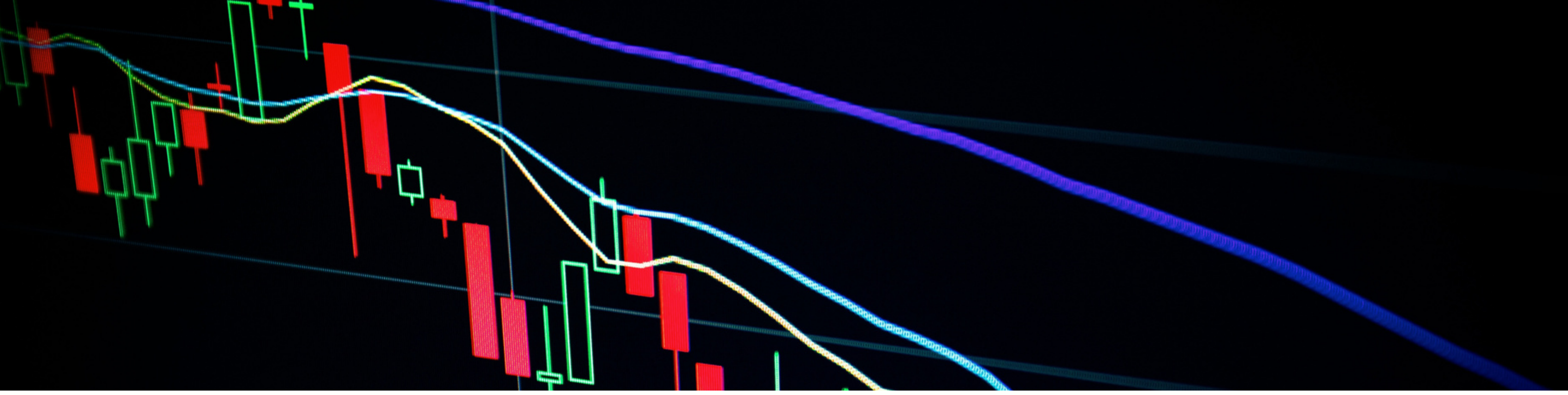

Harry Markowitz developed an early interest in physics and philosophy before pursuing economics at the University of Chicago, where he studied under the tutelage of Milton Friendman. One afternoon, when reading about stock valuations, Markowitz discovered that there was a defect in the asset selection methods at the time. That is, it considered the risk of individual assets but not the overall portfolio risk. Little did he know, this eureka moment would earn him his 1952 PHD dissertation and later, his 1990 Nobel Prize in economics.

But what does it mean to consider the overall portfolio risk? Refer to the graph above. The graph shows the relationship between a portfolio's risk and expected return. A portfolio consists of different types of assets, such as stocks and bonds. Changing the relative weight of stocks and bonds in the portfolio changes the portfolio's risk-return profile. Any point within and on the hyperbola curve represents a portfolio with a specific risk-return profile. The points on the upper curve of the hyperbola form the efficient frontier.

The efficient frontier is the best set of portfolios that could be created from the portfolio assets, says Markowitz. You would never invest in a portfolio inside the frontier, such as portfolio A. You would always choose to invest in a portfolio on the frontier, such as portfolio B and C. That makes sense. For the same risk that portfolio A has, portfolio B has higher returns. For the same return that portfolio A has, portfolio C has lower risk. In this way, the efficient frontier consists of portfolios with optimal returns for any level of risk.

Now that we know what the efficient frontier is, how does diversification play into it? For starters, diversification is the idea that it is unwise to put all your investments in one basket. Suppose that we could invest in umbrella, gumboot and sunscreen stocks. If we could only choose two types of stocks, diversification says we should choose umbrella and sunscreen stocks for our portfolio, not umbrella and gumboot stocks. That way, the increased return on umbrella stocks on a rainy day will partly offset the downturn on sunscreen stocks. Visually, a diversified portfolio makes the efficient frontier more curved (shown by graphs with smaller ρ) because for any level of portfolio return, the portfolio risk decreases.

Markowitz was a strong advocate for diversified portfolios ($\rho < 1$). He once said that without diversification, "one hundred securities whose returns rise and fall in near unison ($\rho = 1$) afford little protection than the uncertain return of a single security." This idea drastically changed the prevailing asset selection methods at the time. Back then, it was common for investors to choose assets that had the highest expected value and reasonably low risk. The danger of this is that you could choose the umbrella and gumboot combination without realising that the umbrella and sunscreen combination produces a portfolio with a superior risk-return profile. Now, Markowitz's theory tells us to consider how portfolio asset returns move in relation to each other when market conditions change.

Aside from the efficient frontier, Markowitz's legacy extends to other areas of finance. During his time at RAND Corporation in the 1950-60s, he invented Simscript, a programming language for computer simulations. After having worked for IBM and General Electric, he co-founded a computer-software company named California Analysis Center Incorporated in 1962. In 1968, he successfully managed a hedge fund, Arbitrage Management Company, based on modern portfolio theory. There is no doubt that Markowitz's legacy will be one for the books.

GLOBAL

Bombs, Blondes, and a bunch of Angry Actors

BY RILEY BOGARD-ALLAN

The UAIC Bulletin claims not to be an authority on films, but will forever be interested in the millions they, and the entertainment industry as a whole, attract. It has been a big month for Hollywood, with the simultaneous release of blockbuster's Barbie and Oppenheimer occurring amidst heightened strike action on the part of writers, actors and other media professionals. Indeed, the events are closely related. Personnel on both films, including cast members, have signalled their support for the strikes in person and via interview. Oppenheimer's London premier was marred by the cast walking out mid-screening. The film's eventual releases, a little over a week later, came in the context of picket lines and walkouts of an even greater scale. Whether you think Barbenheimer was overshadowed, or whether it served as a welcomed distraction, the largest strike action in years calls into question the future of the entertainment industry.

First, the numbers. Let's start with the good part, shall we? The two films are already resounding successes. Against a budget of $100 million, Barbie has grossed just over $500 million at the Box Office so far. Oppenheimer boasts a healthy 2.5x return against the same $100 million investment. Combined, the total worldwide gross is a handy $768 million. Not bad for a weekend's work. But, upon consideration of these numbers alone, one immediately understands the frustration of actors and writers. 'Economic fairness' is at the heart of the strikes, including a damning allegation that the Alliance of Motion Picture and Television Producers (AMPTP), made up of hundreds of television and film companies, has resolved to cut salaries to pad profits. So while the likes of A-listers Margot Robbie (Barbie), Ryan Gosling (he's just Ken) and Cillian Murphy (J. Robert Oppenheimer, destroyer of worlds) will collect their millions of dollars, the vast majority of many others in the industry are rightly angry at another instalment of this long-running franchise called corporate greed.

The Screen Actors Guild and Writers Guild of America are not only concerned about wages, but also the prospect of losing their job altogether. The rise of AI has been covered extensively, and we can find an application in the entertainment industry as well. Only contractual obligations and their own goodwill (this one is marginal) can stop executives from employing AI to write the script for their latest blockbuster. Of course, it does not stop there. If ChatGPT writes the script, any of the litter of tools that can generate images and video will carry it all out on screen. The cost is next to nothing and the product is one where consumers increasingly cannot tell the difference. And nor are we certain they want to; if AI-generated Barbie, bombs and Batman all look and sound better than the real thing, there is no incentive to go back. This is hugely concerning, not least of all for those whose livelihood is at stake.

This episode (which is a drama, horror and psychological thriller all in one) coincides with another fundamental shift taking place in the industry and society today. Covid-19 accelerated the decline of brick-and-mortar consumption, and cinemas were one of the worst hit in this respect. Exact figures are difficult to gather, but there is certainly a perception that people are heading for a night out at the movies less and less. At the same time, streaming services have increased their revenues many-fold. Convenient and offering all but endless amounts of content to consume, the trend has largely stuck. Exceptions to a night of Netflix are new releases like

Barbie and Oppenheimer, which are exclusive to theatres. But it feels that such blockbusters are few and far between nowadays, with the greatest return - or perhaps it more that they are the highest bidder, with theatres unable to compete - seen to lie in streaming services. Barbenheimer may cause a shakeup, but it will take more than one high-profile release to dislodge the growing impetus and influence of streaming services. In atomic terms, one or two drops won't do it; a nuclear winter is needed.

Why does this all matter? A personal concern of mine is how Covid-19 has changed the way we live our lives. More to the point, it has threatened the very fabric of society. And theatre attendance is a prime example. Few memories are fonder than watching a movie at the local cinema with friends or family. The endless box of popcorn, the tall drink, an ice-cream to boot. Streaming services may offer the same, if not better content, but have robbed the next generation of these experiences. Things come and go, and capital will always be allocated to that which offers the greatest return, but the impending downfall of brick-and-mortar cinema, save for that nuclear winter, is a worry.

Grave philosophical concerns aside, the streaming services debate is also pertinent to the Hollywood strikes. Leading the previously mentioned shift to AI are streaming services. It makes sense; companies like Netflix are known for their use and development of technology. But it means the grudge held by those on the picket lines is directed more at streaming giants than anyone else. And if Netflix and co. continues to grow, as is the prediction, their pricing power only increases while hopes for fair and equitable outcomes for actors and writers decline. All roads lead to Barbenheimer and, in this sense, its success may work both ways. On one hand, Barbenheimer may worsen the situation for strikers because big-money production companies are better geared to implement the changes they desire. On the other hand, its overnight success at the Box Office may cause the same executives to think twice before getting into bed with the same streaming services advocating most strongly for AI in entertainment.

If one thing is for sure, prosperity, in its broadest sense, cannot be realised with thousands lining the streets in protest. Let us hope the AMPTP settles the strike with media professionals sooner rather than later. Then the focus can shift to such pressing issues as AI, cinema and Barbie. However, there appears to be no easy solution. With momentum no physicist or feminist fantasy comedy can stop, the world is changing before our eyes.

GLOBAL

Inflation Revisited

BY JAMES MACLEAN

Just over two years ago, the 20th Edition of the UAIC bulletin was published. In that edition, Joshua Paul wrote an article titled "Just in time? Or not enough", in which he explored the downfall of just-in-time manufacturing and the emergence of companies stockpiling raw materials. Josh predicted that one of the symptoms of this change would be inflation, which would also be fueled by government stimulus and increasing input costs. Looking back, it's clear that he was right. New Zealand's consumer price index (CPI) hit 7.3% in June of 2022. While the rate of inflation seems to be slowing, prices have yet to cool off, with the CPI sitting at 6%, still well outside the Reserve Bank's target range of 1-3%. This raises several important questions. What is the primary cause of this record level of inflation? What has the RBNZ done in response? Lastly, If Josh could predict this inflation crisis, why is it that central bankers, whose job is to ensure price stability, could not?

In his article, Josh mentions the Friedman Doctrine, in which Milton Friedman argues the virtue of seeking profits and shareholder wealth over any other social responsibilities. However, a different idea of his comes to mind when considering the inflation problem. Friedman famously proclaimed, “Inflation is always and everywhere a monetary phenomenon, in the sense that it is and can be produced only by a more rapid increase in the quantity of money than in output.” In saying this, he implies that the blame for inflation should always be placed on the government due to quantitative easing (QE) and low interest rates intended to stimulate economic activity.

While politicians and the media have blamed the war in Ukraine and so-called “corporate greed” for inflated prices, there is little to no substance behind these claims. Oil prices are currently lower than they were pre-war, yet prices of goods and services in New Zealand continue to rise. In terms of corporate profits, these are not a cause of inflation but a symptom of it. Accusations of price gouging are equally unfounded. Businesses face higher input costs and increase prices accordingly, likely maintaining the same real margin but increasing their profit in nominal terms. Again, the problem lies with expansionary fiscal and monetary policy. When businesses attempt to pass their increased costs on to consumers due to QE, government spending and low interest rates, consumers are receptive to these price increases.

The past few years have provided significant evidence to back Friedman’s hypothesis. In New Zealand, the Reserve Bank has purchased $50B of government bonds through QE, printing new money. This is precisely the type of increase in the money supply that Friedman warned about and is what fundamentally led to our current inflation crisis. Even the ex-assistant governor of the RBNZ expressed worry over the implications of the central bank’s QE program, saying, “I think we'll reassess history and decide QE turns out to be a really bad idea, apart from [during] the really emergency settings."

Around the world, failure to control inflation has been a common theme. The federal reserve in the United States has also faced criticism for its QE and late reaction to rising prices. In the UK, similar criticisms have been levied against the Bank of England, with the country seeing inflation as high as 11%. Across the ditch, Australia's Reserve Bank governor Phillip Lowe has been replaced. He earlier faced calls to resign after he slashed rates and kept them at near zero well into 2022, then forcing the bank to hike rates in nine consecutive meetings.

The common theme among these central banks is their adherence to modern monetary theory (MMT), which suggests that governments can print as much money as they want without consequences. Proponents of this theory usually dismiss inflation as an unlikely result of quantitative easing and extreme government spending. They suggest that if inflation were to happen, it could be easily combatted by tightening monetary policy. This clearly proved not to be the case, with the reserve bank keeping rates too low for too long. In most countries, this led to a series of more severe rate hikes late into the inflationary cycle. Leaving these rate hikes too late was a crucial mistake. Since many mortgages remain fixed for a period of several years, the impact of a higher OCR is not felt by consumers straight away. This means consumers have, and will have to refix their mortgages at much higher jumps from their original payments.

While the RBNZ decided to pause their rate hikes at their last meeting, inflationary pressure has remained present in the economy. New Zealand has seen an influx of migration and expects to see a budget deficit of $7.6 billion in the 2023/24 fiscal year. Professor of Economics at UoA, Robert MacCulloch, has also been sceptical of Orr's performance. In his blog, he compares the RBNZ's rhetoric to that of the Fed in the US, pointing out that despite inflation being significantly lower in the US than in New Zealand, US officials have still signalled that further rate increases may be necessary.

Relative to other central banks, the RBNZ hiked rates higher and earlier. Despite the aggressive tactics, prices continue to rise. This proves that even the most proactive central banks can't dampen the inflationary effect of QE and further demonstrates that monetary policy is not as effective as it is presented to be. Once more, the reserve bank has become a politicised institution. They now appear to prioritise enabling expansionary and irresponsible fiscal policy rather than controlling prices. The turning point seems to have been Labour's introduction of a dual mandate, asking them to achieve "maximum sustainable employment" as well as control prices. These two objectives are currently in direct opposition. If price stability were still the bank's sole mandate, perhaps we would've seen a more hawkish approach to interest rates and a more conservative approach to QE. It's clear that our current cost of living crisis was as predictable as it was avoidable. The blame lies with the RBNZ and those politicians who co-opted it to enable their irresponsible spending.

MYOB Column

Mid-market construction sector investing to future-proof for industry change

A new survey of mid-sized construction firms reveals that the effects of inflation are weighing heavily on many in the sector and with business leaders anticipating more headwinds over the coming months, attention now turns to investing in innovation to strengthen performance and drive growth.

According to MYOB's Mid-market Construction Snapshot - a survey of 100 leaders and decision-makers of local (NZ) mid-sized construction firms - while 45% polled saw year-on-year revenue increase and 38% saw it remain the same, rising costs spurred by inflationary pressures are hampering profitability.

The business leaders surveyed reported seeing an average increase in the cost of construction materials and goods of 18.5% over the past year. As a result of these rising prices, almost half (49%) of the decision-makers surveyed said their business has had to absorb some additional costs, while 42% have had to reduce their margins.

Read the full report here

Forsyth Barr FOCUS

Cracks in the Kiwi Nest Egg

New Zealand recorded its largest ever current account deficit over 2022. The current account is the balance between what we as a country earn and what we spend. In fact, over the 35-year period that we have been measuring the current account we've only had deficits — we are a net (and increasing) borrower from the rest of the world. In the short-term this isn't much of an issue — overseas investors remain happy to lend us money or buy our assets. Over the long-term, however, it does pose economic risks to the country and is another reason why diversifying investments beyond New Zealand is a good idea.

Read the full article here.


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