Market Insights

April 2022

When interest rates rise

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Frontier has been at the forefront of institutional investment advice in Australia for over 25 years and provides advice on $600 billion of assets across the superannuation, charity, public sector, insurance and university sectors.

Frontier's purpose is to empower our clients to advance prosperity for their beneficiaries through knowledge sharing, customisation, technology solutions and an alignment and focus unconstrained by product or manager conflict.

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KC joined Frontier in 2012 and provides analytical support to clients, asset allocation advice, plus investment research. KC is a member of Frontier's Capital Markets and Asset Allocation team. KC was previously with Fairfax Media as the Head of Research and Valuation Analyst for BRW Magazine. He has also published business articles in print and online for Fairfax's various mastheads. KC also interned in the Advisory division of PricewaterhouseCoopers. KC holds a Bachelor of Commerce, majoring in Accounting and Finance at Monash University with the Dean's Commendation. He also holds a Master of Applied Finance from Monash University. KC is a CFA Charterholder.

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Paul joined Frontier in 2019 and provides investment advice to a range of clients and is part of the Capital Markets and Asset Allocation Team. Prior to joining Frontier, Paul worked as a Performance Analyst in the Performance and Risk Analytics division at National Australia Bank, he started his career as a fund accountant at Apex Fund Services (Australia) Pty Ltd. Paul graduated with a Bachelor of Commerce (Accounting and Finance) from the University of Melbourne and Paul is a Chartered Accountant and a Chartered Financial Analyst.

INTRODUCTION

When interest rates rise

In this paper, we analyse the historical performance of key economic variables and asset classes (particularly equities) over historical interest rate rising cycles. We look at the 12 months before the initial interest rate hike as well as the period when the interest rate is rising.

We have focused on the US interest rate rising cycle as it is likely the key driver for investment portfolio outcomes and has the most historic data.

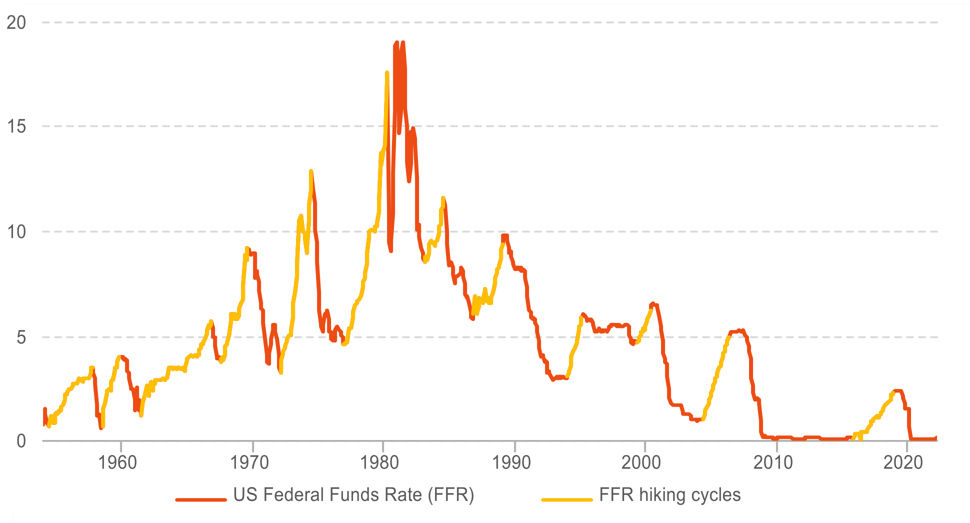
The period leading up to the current cycle has similarities to previous cycles.

- Economic growth is improving and inflation pressure is building.
- However, the US economy and inflation in the current cycle is growing at a much faster pace relative to historical cycles. This is due to the impact from the pandemic lockdowns and government support policies.
- Additionally, the Russian invasion of Ukraine and new pandemic lockdowns in China add additional pressure on inflation.

Background

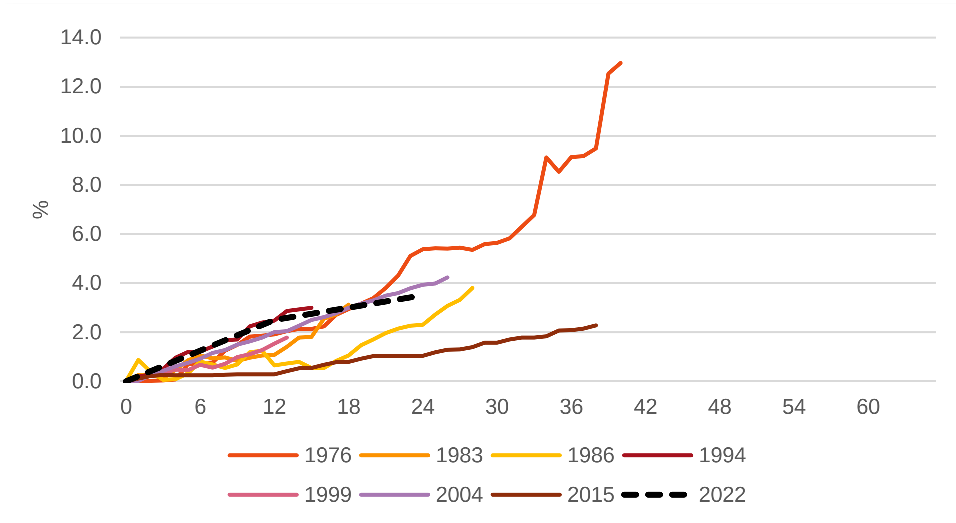
Current market expectation is for a relatively steep hiking path

Historical US Federal Funds Rate hiking cycle



Source: Refinitiv Datastream

Recent Federal Funds Rate hiking cycles



Source: Frontier, Refinitiv Datastream, Bloomberg

- The US Federal Reserve's key policy rate is the Federal Funds Rate (FFR). There have been 12 interest rate hiking cycles in the US since the 1950s.
- Historically, hiking cycles last for at least twelve months.
  - The shortest cycle was the 1999-00 episode (lasted around 12 months).
  - The longest cycle was the 1961-66 episode (lasted for more than 5 years).
- The Fed started on its latest hiking cycle in March 2022.
  - Market expectation as at early April is for the FFR to be at around 2.5% by the end of 2023. This is a steep hiking path relative to recent history, particularly relative to the most recent hiking cycle in 2015 which increased very gradually.

US economy

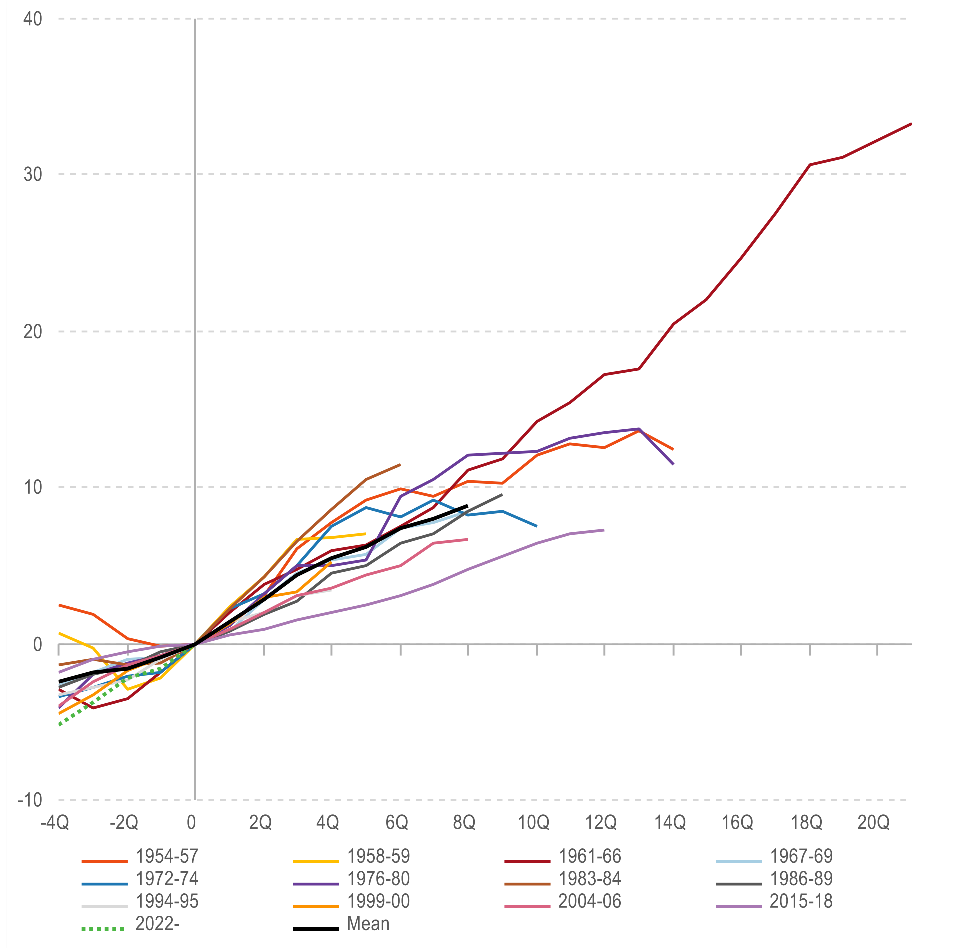
Economic growth recovering strongly relative to previous interest rate rising cycles

- The US economy has typically been growing leading up to the initial interest rate hike.
  - Exceptions were the 1954 and 1958 episode.
  - As often mentioned, this chart shows the economic growth over the 2015-18 cycle was the slowest in history.
- Economic growth typically remains robust following the start of the interest rate hiking cycle, though growth starts to plateau at the end of the cycle (which is to be expected, as this is likely the cause for central banks to stop hiking rates).
- The current cycle (dotted green line) suggests the economy is growing at a much faster rate in the 12 months leading up to the initial hike relative to historical cycles.

How to read the chart:

- Each line represents a historical rate hiking cycle. The solid black line represents the average across all the historical cycles. The dotted green line represents the current cycle (i.e. started in March 2022).
- The length of each line represents the length of each hiking cycle.
- The horizontal axis represents time (quarters or months) with zero representing the first interest rate hike of each cycle. The area left of zero, represents the months leading up to a hike. To its right, are the months following the initial hike.
- The vertical axis shows the re-based performance so that each cycle starts at zero at the point of the initial rate hike.

US real GDP growth (indexed to FFR hiking cycle)



Source: Refinitiv Datastream

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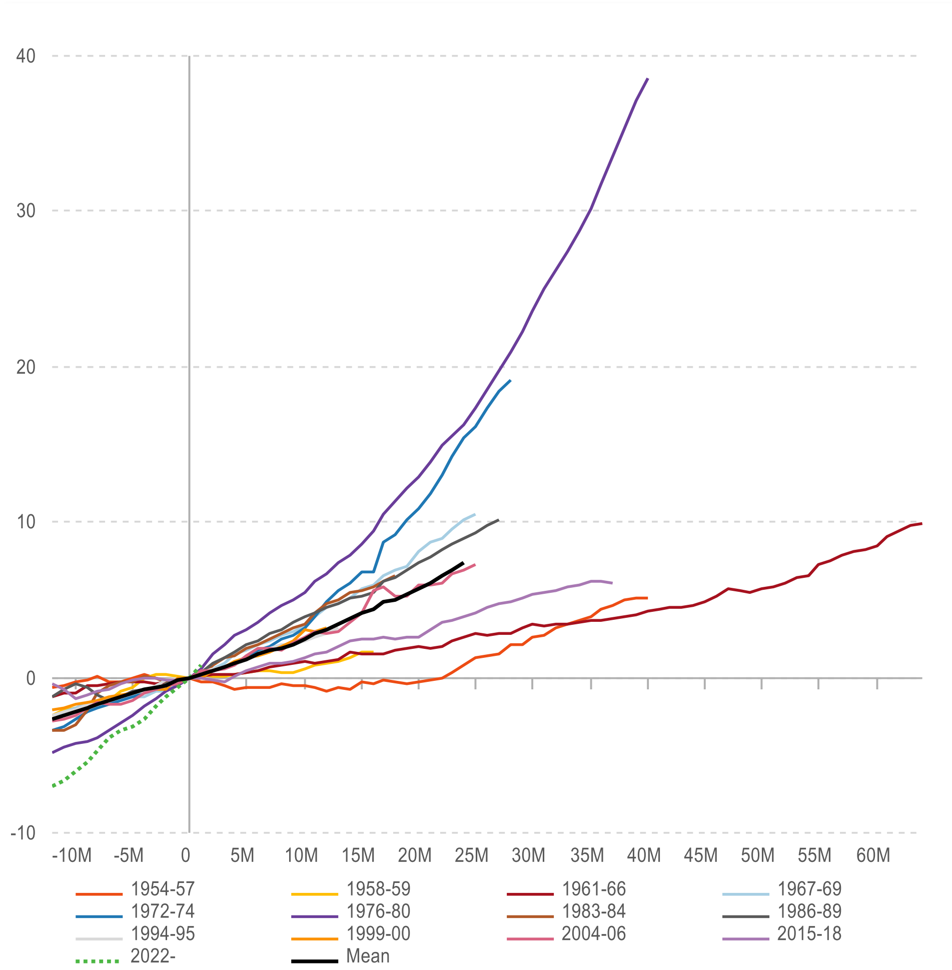
US inflation

Current US inflation increasing at fastest rate relative to previous interest rate rising cycles

US CPI (indexed to FFR hiking cycle)



Source: Refinitiv Datastream

- Historically, the inflation environment before and after the initial interest rate hike varies broadly
  - There are periods where inflation remained relatively low even after the interest rate hiking cycle starts (e.g. the 1950s, 1960s, and 2015-18 cycle)
  - There are also periods where inflation grew at a fast pace (e.g. the 1976-80 cycle). Equity markets performed negatively in that cycle.
- The current cycle (dotted green line) shows inflation is growing at the fastest pace relative to previous cycles.
  - This is similar if we look at core inflation as well.

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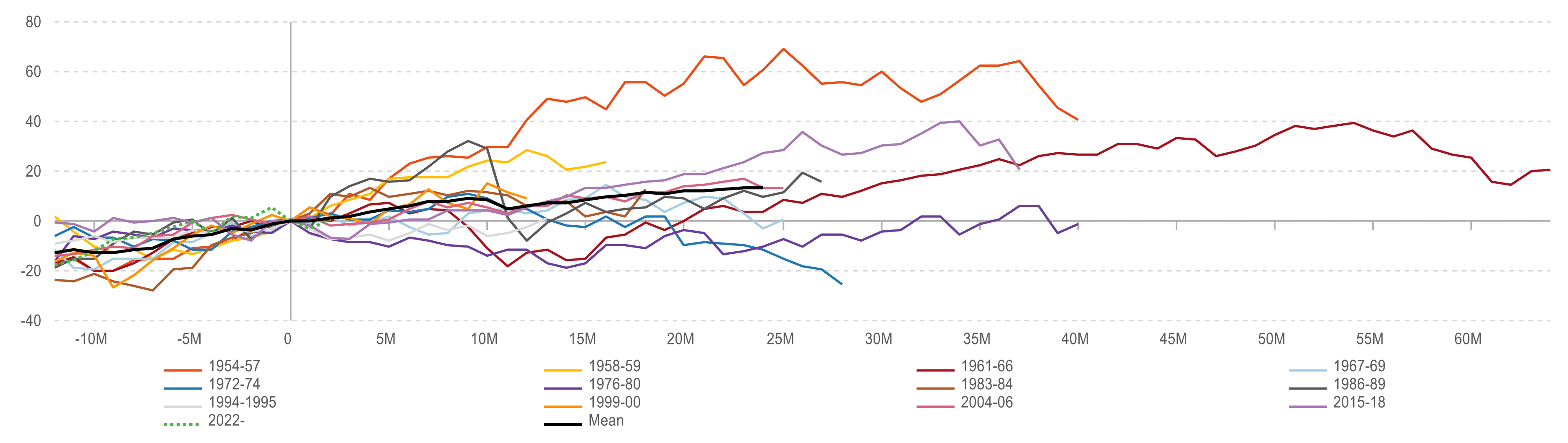
US equities

US equities typically perform positively during the initial interest rate rising period

S&P500 during Fed Funds Rate rising cycles



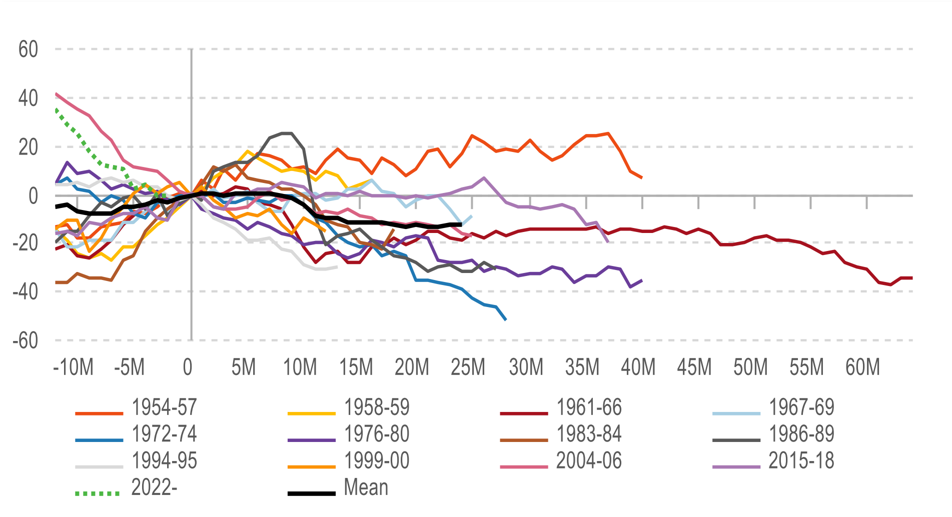
Source: Refinitiv Datastream

- In the 12 months leading up to the first interest rate hike, US equities is typically increasing.
  - Although there are a few cycles where equities were relatively flat, there have been no cycles where a hiking cycle followed a declining equity market period.
  - The current equity market (dotted green line) has delivered around the average return of previous cycles.
- This is intuitive as the Federal Reserve is raising rates because the economy is generally growing and sentiment is improving.
- Equity markets have typically performed positively during the initial interest rate rising period.
  - On average, US equities delivered a positive return during a rising rate environment.
  - There were two cycles where equity markets declined by around 20% in the first 12 months after the first interest rate hikes. These were the 1961-66 and 1976-80 cycles.

US equities

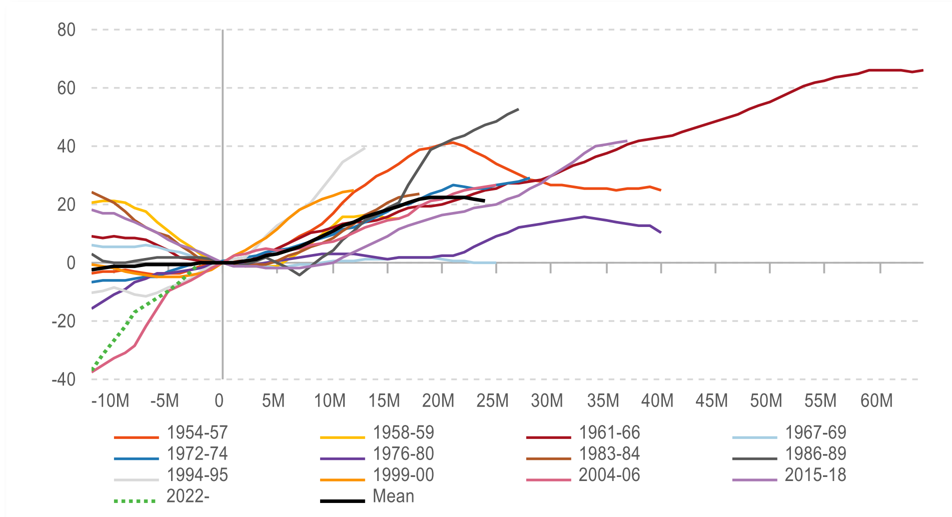
Equity returns largely driven by earnings growth in the period following the initial rate hike

S&P500 P/E ratio during Fed Funds Rate rising cycles



Source: Refinitiv Datastream

S&P500 real earnings during Fed Funds Rate rising cycles



Source: Refinitiv Datastream

- On this slide, we look at the underlying components driving equity returns, capital re-rating (as represented by the price earnings ratio (P/E ratio)) and earnings growth (EPS).
- The price earnings ratio has been mixed in the period leading up to and in the period following the initial rate hike with a number of capital re-rating and de-rating episodes. However, on average, the capital re-rating tends to occur before the initial rate hike.
- On the other hand, earnings growth has typically been mixed in the period leading up to the initial rate hike. However, earnings growth has generally been positive in the period following the initial rate hike and has tended to be the key driver of equity returns during the hiking cycle. The increase in earnings this cycle has been one of the strongest relative to history.
  - A concern is that the majority of the earnings growth has already occurred in the current cycle. However, the 2004-06 cycle (pink line) shows earnings can continue to deliver solid growth even if it already had a period of strong growth before the interest rate rising cycle.
  - Worth noting is the 1976-80 cycle where a combination of high inflation and weak earnings growth resulted in a significant valuation de-rating.

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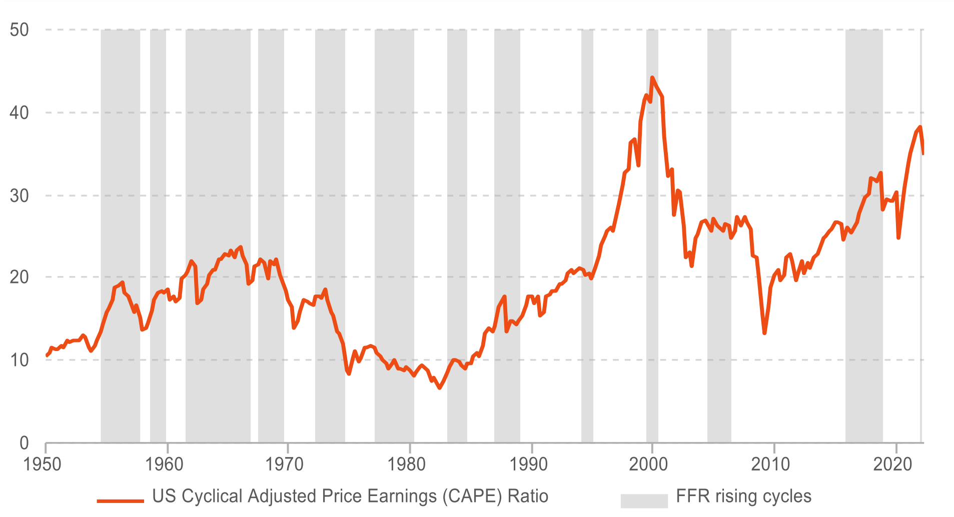
How this time could be different?

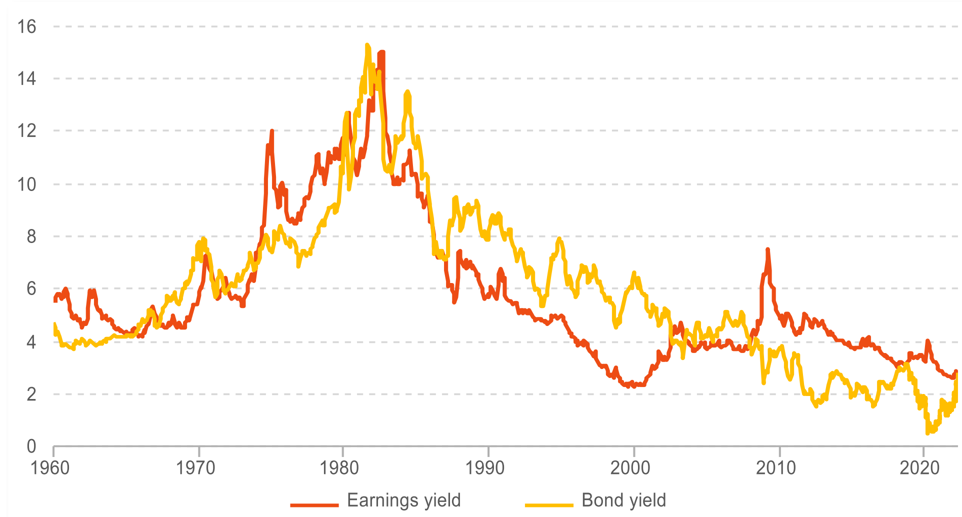
Equity valuations at high levels relative to previous rate rising cycles

US CAPE ratio during FFE rising cycles



Source: Refinitiv Datastream

US bond yield vs Shiller 10-year real earnings yield



Source: Refinitiv Datastream

- Equity markets have historically performed positively in rising interest rate environments as the boost from earnings growth has typically offset the valuation de-rating impact from higher interest rates.
- However, equity market valuations are at much higher levels today relative to previous cycles (the exception is the dotcom bubble period). As a result, as interest rates increase from their record low levels, it may lead to a much larger valuation de-rating impact.
  – Additionally, the technology sector (and growth stocks more broadly) makes up a larger proportion of the equity markets today. These stocks tend to be more sensitive to interest rate movements.

Summary of economic indicators

Performance of economic indicators during US Federal Funds Rate hiking cycles

Economic indicators	Feb-72 to Jul-74 (%)	Dec-76 to Apr-80 (%)	Feb-83 to Aug-84 (%)	Nov-86 to Feb-89 (%)	Jan-94 to Feb-95 (%)	May-99 to May-00 (%)	May-04 to Jun-06 (%)	Nov-15 to Dec-18 (%)	Feb-22 to Current (%)	Median (%)
Length of hiking cycle (months)	29	40	18	27	13	12	25	37		**26**
12 Months prior to the first rate hike										
US GDP	3.5	4.3	1.4	2.9	3.4	4.7	4.2	1.9	5.5	**3.5**
Core PCE	3.7	5.9	5.9	3.3	2.2	1.2	2.0	1.2	5.4	**2.8**
CPI	3.8	5.0	3.5	1.3	2.5	2.1	2.9	0.4	7.9	**2.7**
Brent crude oil	43.9	16.9	-6.8	-51.0	-19.8	3.4	38.2	-38.7	53.2	**-1.7**
US 10yr gov. bond yield (change)	-0.1	-1.0	-3.5	-2.5	-0.7	-0.0	+1.3	-0.0	+0.6	**-0.4**
AUD/USD (exchange rate)	1.19	1.09	0.95	0.65	0.71	0.65	0.71	0.72	0.73	**0.72**
AUD/USD (change)	6.3	-13.4	-11.1	-5.1	4.4	3.6	9.5	-15.1	-6.3	**-0.8**
Performance during the rate hiking cycle										
US GDP	2.9	3.1	7.5	4.1	3.5	5.2	3.3	2.3	-	**3.4**
Core PCE	5.4	7.4	4.2	4.1	2.3	1.7	2.3	1.8	-	**3.2**
CPI	7.5	10.3	4.3	4.4	2.9	3.1	3.4	1.9	-	**3.9**
Brent crude oil	60.4	36.4	-1.7	7.7	15.8	91.3	38.5	6.2	-	**26.1**
US Funds Rate (start)	3.3	4.7	8.5	6.0	3.0	4.7	1.0	0.1	0.1	**4.0**
US Funds Rate (end)	12.3	15.1	11.5	9.4	5.9	6.5	5.0	2.4	-	**8.0**
US Funds Rate (change)	+9.0	+10.5	+3.0	+3.4	+3.0	+1.8	+4.0	+2.3	-	**+3.2**
US 10year gov. bond yield (change)	+1.7	+4.1	+2.4	+2.2	+1.6	+0.9	+0.5	+0.5	-	**+1.7**

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Summary of asset classes

Performance of asset classes during US Federal Funds Rate hiking cycles

Asset classes	Feb-72 to Jul-74 (%)	Dec-76 to Apr-80 (%)	Feb-83 to Aug-84 (%)	Nov-86 to Feb-89 (%)	Jan-94 to Feb-95 (%)	May-99 to May-00 (%)	May-04 to Jun-06 (%)	Nov-15 to Dec-18 (%)	Feb-22 to Current (%)	Median (%)
Length of hiking cycle (months)	29	40	18	27	13	12	25	37		**26**
12 months prior to the first rate hike										
MSCI Australia	3.0	3.8	11.8	41.0	49.5	11.4	19.5	0.7	9.9	**11.6**
MSCI World (LC)	18.2	15.4	29.6	35.2	27.8	13.5	20.7	4.1	13.3	**19.5**
MSCI EM (LC)	-	-	-	-	196.6	14.2	36.3	-6.8	-8.5	**25.2**
S&P 500	10.1	19.1	30.9	23.3	9.8	19.3	16.3	0.6	14.8	**17.7**
S&P 500 earnings growth	11.2	24.5	-16.7	-1.4	14.6	2.5	65.3	-15.1	110.2	**6.9**
S&P 500 price/earnings (start)	-	13.0	7.8	12.1	20.0	24.3	21.5	19.0	32.2	**19.0**
S&P 500 price/earnings (end)	-	11.9	11.4	14.6	20.4	30.4	20.2	20.5	22.0	**20.2**
Listed Australian property	-	-	14.6	31.3	32.6	-1.1	12.6	14.9	24.9	**14.7**
Unlisted Australian property	-	-	20.6	16.6	-2.5	9.8	12.3	12.5	13.1	**12.4**
Listed US property	-	47.6	28.5	24.7	15.7	-8.1	26.1	3.2	24.1	**24.7**
Unlisted US property	-	-	9.4	9.5	1.4	14.9	9.7	12.8	18.6	**9.6**
Listed infrastructure	-	-	-	-	-	-	8.6	5.9	15.2	**7.3**
Unlisted infrastructure	-	-	-	-	-	15.6	10.7	12.2	-	**12.2**
US Treasuries	-	11.8	28.2	19.0	9.9	4.4	-2.6	1.2	-2.1	**9.9**
US investment grade credit	-	19.3	41.3	19.3	11.7	3.2	-0.4	0.2	-3.4	**11.7**
US high yield credit	-	-	-	22.2	16.3	0.2	11.9	-3.4	0.6	**11.9**
Leveraged loans	-	-	-	-	12.2	4.3	8.3	-0.5	3.2	**6.3**
Performance during the rate hiking cycle										
MSCI Australia	-18.9	24.7	34.8	10.8	-9.4	8.5	26.6	7.7	-	**9.7**
MSCI World (LC)	-8.1	7.3	17.3	14.1	-6.7	16.2	13.8	5.8	-	**10.6**
MSCI EM (LC)	-	-	-	-	4.5	22.0	29.1	8.6	-	**15.3**
S&P 500	-11.5	-0.3	8.2	6.8	1.1	9.1	6.2	6.2	-	**6.2**
S&P 500 earnings growth	19.4	13.6	20.1	26.0	40.0	28.5	15.9	14.2	-	**19.7**
S&P 500 price/earnings (start)	-	11.9	11.4	14.6	20.4	30.4	20.2	20.5	22.0	**20.2**
S&P 500 price/earnings (end)	11.3	7.4	9.7	12.0	16.0	28.2	16.7	18.7	-	**14.0**
Listed Australian property	-	-	38.7	9.8	-4.2	10.6	18.1	8.7	-	**10.2**
Unlisted Australian property	-	-	14.9	24.0	13.8	10.5	15.5	12.4	-	**14.4**
Listed US property	-9.4	18.2	21.8	4.1	0.4	-1.2	26.3	3.4	-	**3.7**
Unlisted US property	-	-	13.3	9.0	5.9	10.9	17.7	8.1	-	**10.0**
Listed infrastructure	-	-	-	-	-	-	23.3	7.8	-	**15.5**
Unlisted infrastructure	-	-	-	-	-	14.1	19.1	12.2	-	**14.1**
US Treasuries	-	4.2	6.2	4.2	-0.8	3.3	2.7	1.3	-	**3.3**
US investment grade credit	-	0.2	6.5	6.0	-0.9	0.0	2.9	2.9	-	**2.9**
US high yield credit	-	-	-	8.5	1.4	-3.2	8.2	6.1	-	**6.1**
Leveraged loans	-	-	-	-	9.5	3.9	5.9	4.6	-	**5.2**

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Conclusion

Historically, equity markets typically perform positively during the initial period of an interest rate rising cycle. Although most of the valuation re-rating typically occurs before the interest rate rising cycle begins, earnings growth tends to be the key driver for continued equity performance during the rate hiking cycle.

A risk for equities in this cycle is that potentially the majority of the economic and earnings growth has already occurred ahead of the interest rate rising period and inflation remains persistently high (due to it being supply-side driven). Significant selloffs in equity markets have tended to occur in periods where inflation is high and earnings growth is weak.

The current cycle also has differences relative to history as equity market valuations (as measured by the cyclical adjusted price earnings (CAPE) ratio) are elevated compared to previous rate rising cycles (the exception is the dotcom period). This may make the valuation de-rating impact larger relative to history.

Want to learn more?

Please reach out to Frontier if you have any questions or visit frontieradvisors.com.au for more information

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