Mercer

Avon Pension Fund
Managing inflation risk

November 2021

Steve Turner
Nick Page

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Managing inflation risk
Introduction

This paper is addressed to the Investment Panel ("the Panel") of the Avon Pension Fund ("the Fund") and examines the current inflationary environment and the potential impact on the Fund. It is intended to be a discussion document at this stage – there are no firm recommendations.

Given that the Fund's liabilities are linked to inflation, one of the Fund's key risks is that investment returns don't keep pace with the liabilities in an elevated and sustained inflationary scenario. If inflation rises by 1% and the assets don't keep pace, then his would be equivalent to a 30% fall in the value of the Fund's equity holdings (c. £700m funding strain).

The investment portfolio is robust to a wide range of inflationary scenarios through the direct inflation hedging within the liability driven investment (LDI) strategy, as well as allocations to real assets such as infrastructure and property that provide some inflation sensitivity. However, we believe the range of scenarios that inflation could take has widened, and it is important for the Panel to understand the risks posed and how the portfolio is positioned in these scenarios.

In this paper, we will:

- Discuss why the risk of an inflationary outcomes has increased in recent years and why inflation can be an problem for the Fund
- Present several scenarios on how the economic environment could play out over the coming years
- Qualitatively assess how these scenarios may impact individual asset classes at a high level

A next step could be to investigate further the quantitative impact of the various inflation scenarios on the current and alternative investment strategies. However, we would note that there is no silver bullet asset allocation that works all the time in all inflationary scenarios.

We look forward to discussing this paper with the Panel.

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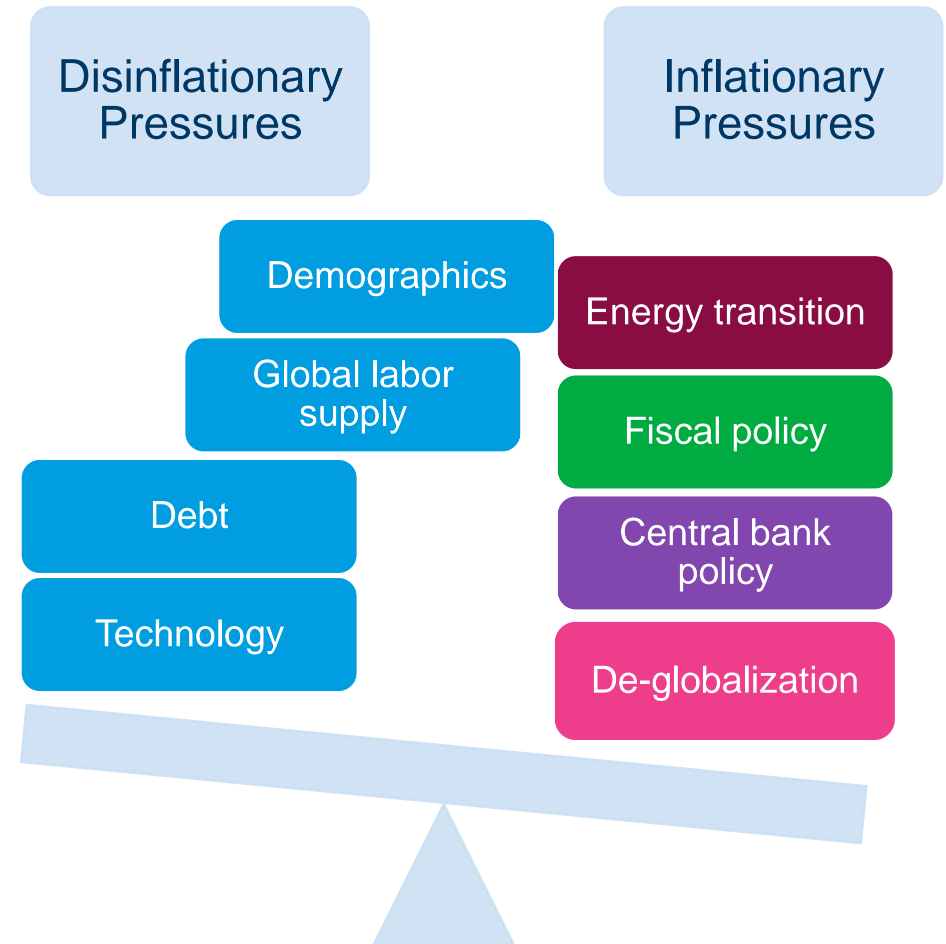
Why are we talking about inflation now?
And why is it now a problem?

1

Why are we talking about inflation now?
Introduction

- Long term secular forces driving disinflation such as globalisation could be turning the other way now.
- Direct inflation risks have also increased as a result of changed central bank philosophies and more monetary/fiscal coordination.
- Governments may prefer to reduce public debt indirectly through higher inflation rather than outright taxation.
- We believe the risk of seeing a wider range of outcomes has increased, including among them:
    - more frequent inflation regime changes
    - higher inflation volatility
    - longer periods of higher inflation levels



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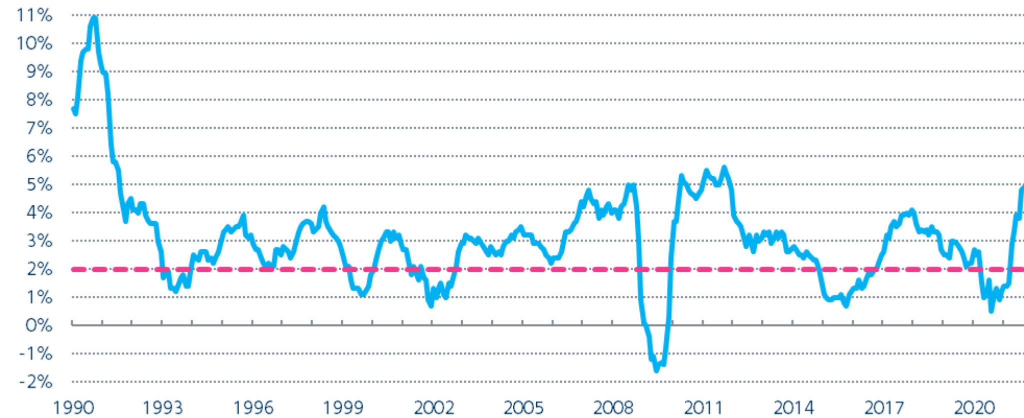
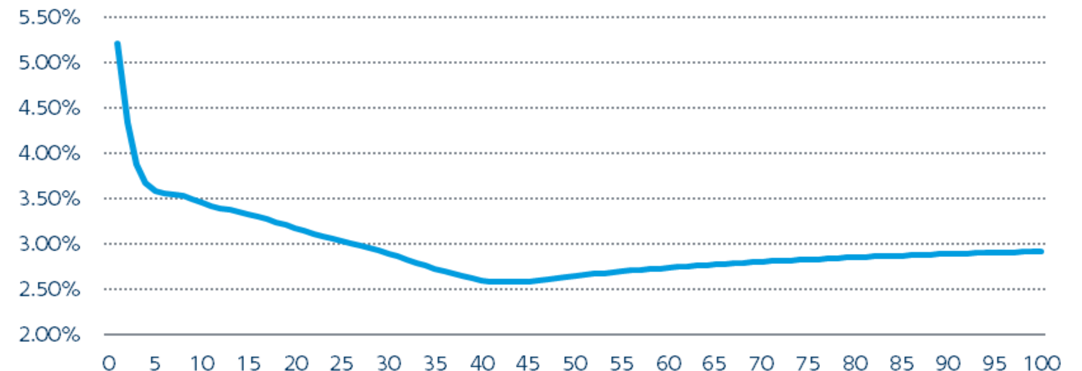
Why are we talking about inflation now?
Markets may be underestimating the risk of higher inflation

- With the recovery from the pandemic crisis, inflation levels have risen substantially in 2021 as pent up consumer demand has hit up against supply chain issues, as well as soring energy prices and frictions from Brexit.
- Inflation levels are currently well above the Bank of England's 2% p.a. target, but most central banks' current view is that this is transitory.
- The risk is that current inflation becomes more entrenched and problematic, noting higher inflation is also associated with higher volatility of inflation.
- Across the developed world, short term inflation is highest in the UK, however, we view the weakening of secular disinflationary forces is a global phenomenon.



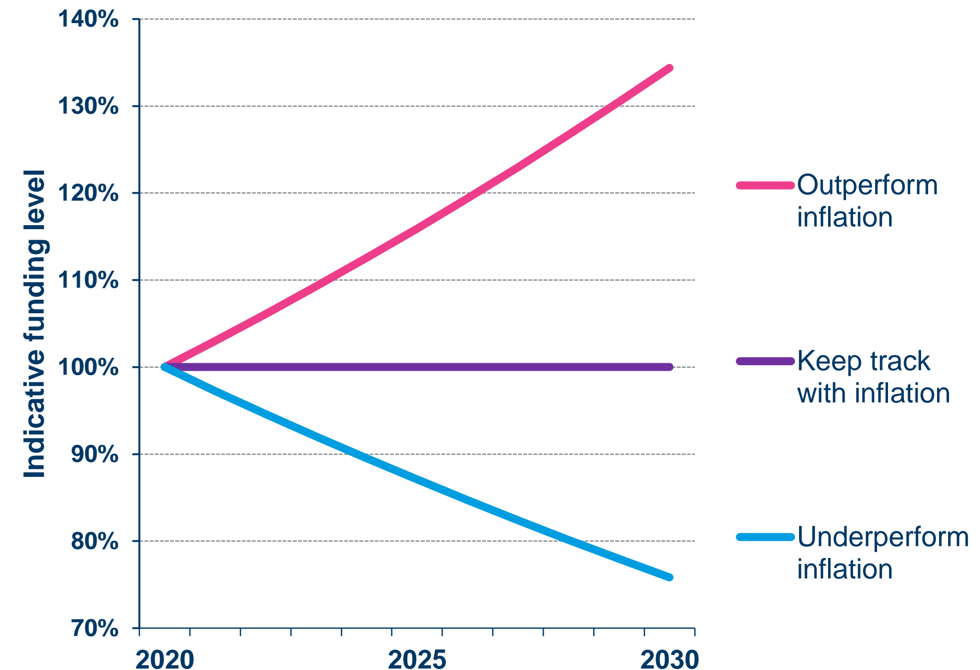
Source: ONS. Data as of October 21, 2021.



Source: Mercer, Reuters

Why are we talking about inflation now?
What's the fundamental issue with inflation?

- The Fund's liabilities are directly linked to (uncapped) CPI inflation.
- A rise of inflation by 1% p.a. would increase the size of the liabilities by 20% (all else equal).
- This means that the investment strategy has to deliver an additional 1% p.a. otherwise this would lead to a funding strain putting upwards pressure on contributions.
- The Fund's discount rate for past service is currently CPI + 1.75% p.a. meaning if (CPI) inflation is higher, the Fund's investments need to return more in order to satisfy the discount rate requirements.
- Since the 2019 valuation, whilst absolute expected returns have remained broadly stable, CPI inflation expectations are 0.4% p.a. higher, meaning the probability of the investment strategy to achieve the discount rate has fallen (63% confidence of achieving CPI + 1.75% p.a. in March 2019 compared to 57% confidence in August 2021).



For illustrative purposes only. Assumes 3% p.a. out-/under-performance.

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Assessing inflation risk
… means assessing both likelihood and impact of different scenarios

- The likelihood of certain inflationary scenarios occurring has increased.
- Pre-existing, long term disinflationary forces now compete with coordinated monetary and fiscal policy and potentially less robust supply chains.

- Equity/bond dominated portfolios have performed well through the last two decades of disinflation…
- …but a transition to a more inflationary regime could negatively impact both equities and bonds.

- Rising likelihood and adverse impact means inflation exposure for the average portfolio should be reviewed to avoid taking unrewarded risk.
- This inflation risk may require a re-alignment of portfolios.

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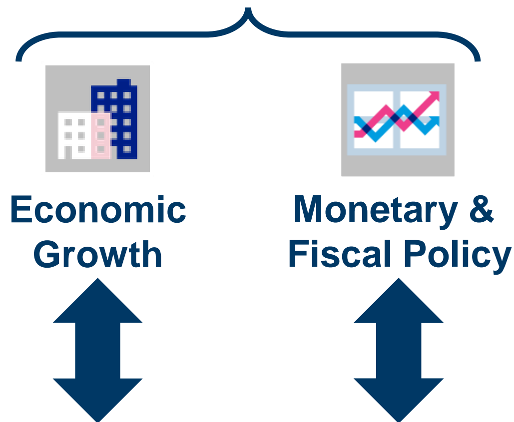
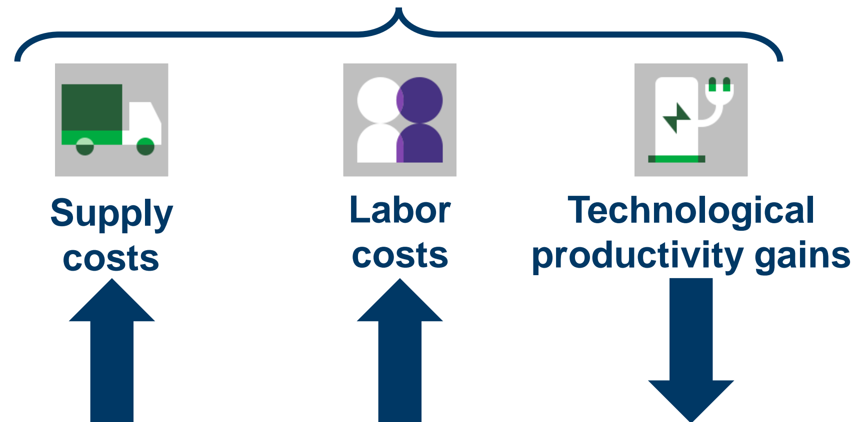
Likelihood: different future states of inflation

Assessing inflation risks

Different scenarios are shaped by different inflation drivers…

- We consider different forward-looking economic scenarios of how economies and markets could behave under different conditions resulting from different combinations of inflation drivers and other factors that interact.





Note that, on the next few slides, these are colour coded:
red = strongly inflationary,
yellow = somewhat inflationary
blue = disinflationary.
For example, monetary policy can increase inflation when too loose but reduce inflation when tightening occurs.

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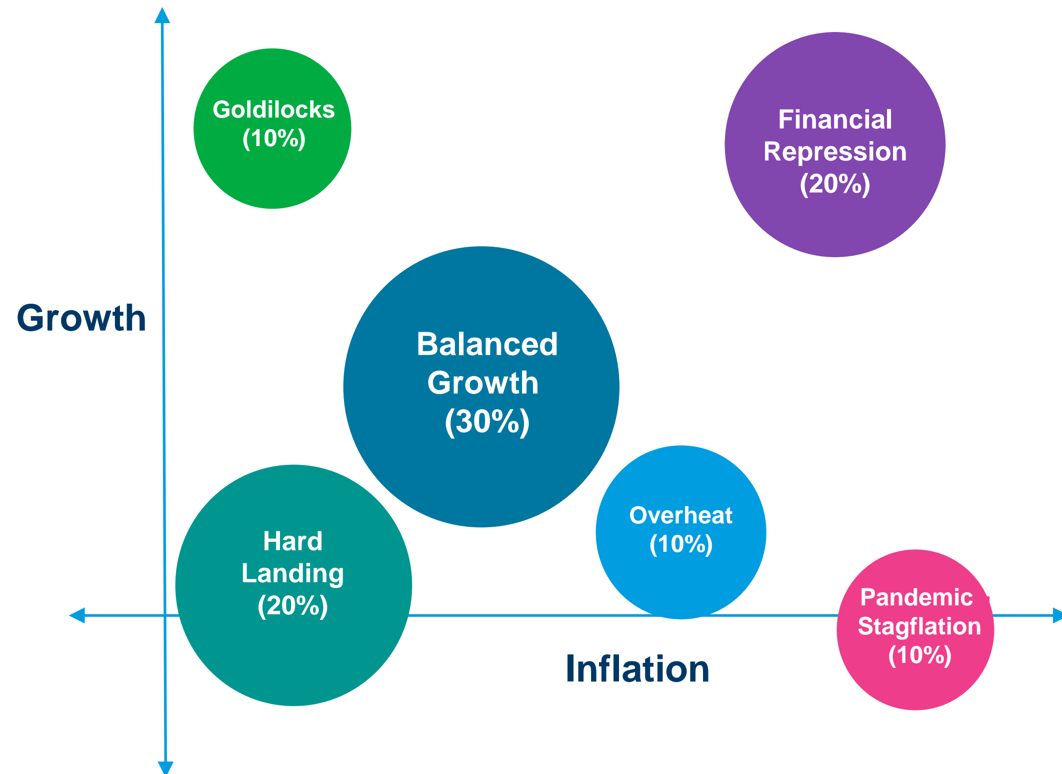
Building scenarios

Where could we go from here – growth and inflation scenarios

Goldilocks: Robust growth, driven by productivity gains, which also keeps inflation low

Balanced Growth: Economic growth and inflation moderate, consistent with consensus forecast.

Hard Landing: Growth slows sharply, as fiscal stimulus is reined in; deflation risk rises



Size of bubbles represents probability (in brackets) we attach to each scenario

Disinflationary | Inflationary

Financial Repression: Strong growth and inflation, supported long term by low central bank rates, designed to reduce debt

Overheat: Central banks pre-emptively tighten policy to avoid risk of runaway inflation

Pandemic Stagflation: Pandemic stress re-emerges. Growth slows, but supply chains drive inflation.

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Building scenarios
Incorporating *energy transition*

- A major scenario that has not been discussed so far is that of energy transition.
- We believe this is a critical consideration and needs to be considered separately from broader economic scenario analysis.
- Rather than being an economic scenario on its own, **we expect it to occur alongside many of the scenarios considered here**.
- **We believe that the effect of energy transition is more likely to be inflationary than deflationary, however, because:**
  - Replacing much of existing energy and transport infrastructure requires huge upfront investments which could be passed on to consumers
  - Eschewing cheaper and more efficient production processes and energy sources to reduce emissions could lead to a fall in productivity as increased input is not matched by higher output with higher prices balancing out reduced supply
- If it were considered as a separate scenario, the ongoing trend of energy transition would make this the most likely scenario of all
- The risks and opportunities presented by energy transition are likely to be more dependent on specific strategy selection **than higher level asset class allocation**, which means it is harder to generalise in an asset class heat-map.

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Portfolio impact: strategies for inflationary environments

Asset classes to mitigate inflationary environments
Determining our options

- We have considered the impact of each of these scenarios on a broad range of asset classes and summarised the results in a heatmap.
- The analysis highlights:
  - How exposed traditional portfolios are to certain inflation scenarios.
  - The silver bullet asset class that does well in all scenarios does not exist.
- However, we discuss a small selection of asset classes that feature strongly in the analysis as a result of their relationships with inflation:
  - Inflation-linked bonds
  - Commodities, and commodity related strategies
  - …including gold
  - Real assets
  - Hedge fund strategies
  - Private markets more broadly
- We also summarise the qualitative assessment of the different inflation scenarios on the Fund and what asset classes can be introduced to help manage a particular scenario.

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Asset classes to mitigate inflationary environments

Impact of different inflation scenarios

Asset Class/Scenario	Benchmark Allocation	Recent Recovery	Balanced Growth	Financial Repression	Hard Landing	Goldilocks	Pandemic Stagflation	Overheat
Global Equity	37.5%							
UK Government Bonds	-							
Investment Grade Credit	2%							
High Yield	MAC 6%							
Emerging Market Debt								
Floating Rate Structured Credit								
Index-linked Gilts	12%*							
Private Debt	5%							
Commodities (ex-Gold)	-							
Gold	-							
Natural Resource Equity (Listed)	-							
Natural Resource Equity (Private)	-							
REITs	-							
Property	17.5%							
Listed Infrastructure	-							
Unlisted Infrastructure	10%							
Benchmark allocation total	90%**							

*Index-linked gilts provide 10% interest rate hedge and 40% inflation hedge
** 10% allocation to DGF not explicitly stated

Worst performing ⟷ Best performing

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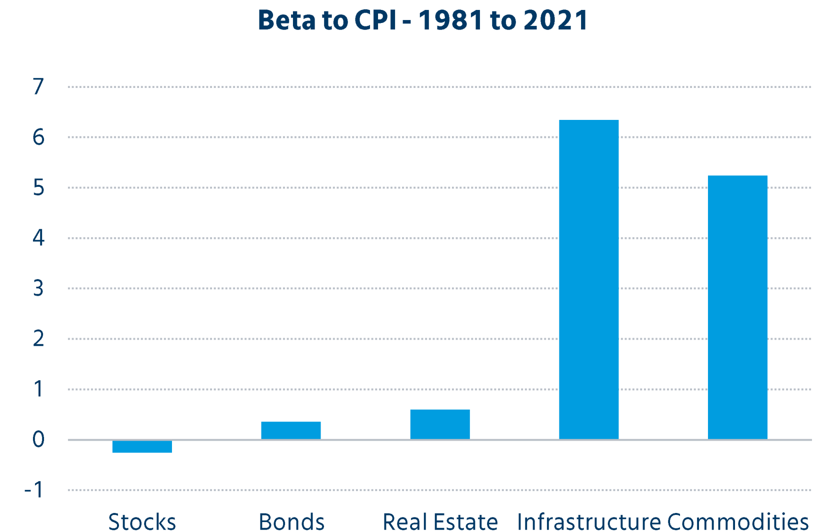
Asset classes to mitigate inflationary environments
Deeper dive (1)

- **Inflation-linked gilts**
  - Despite the strong inflation linkage, on a short term (transition) basis, index-linked gilts are also exposed to changes in interest rates that may offset any protection in an inflationary scenario if monetary policy tightens quicker than expected.
- **Commodities, and commodity related strategies**
  - Commodities hedge against cost-push inflation as they tend to exhibit high 'inflation beta'. Economic transformation drives demand for commodities – urbanization and energy transition are structural forces that *could* support prices over the longer term.
- **Gold**
  - A 'fear asset' that has performed most strongly when markets are either very weak, or very nervous about high inflation. It is seen as a long term hedge against currency devaluation.
- **Real assets**
  - Reasonable relationships between real assets (e.g. infrastructure) and inflation, driven primarily by the link to the underlying cashflows.



Source: Aether Investment Partners, Mercer. Data as of January 31, 1981 to April 30, 2021. Infrastructure data as of November 30, 2002 to April 30, 2021.

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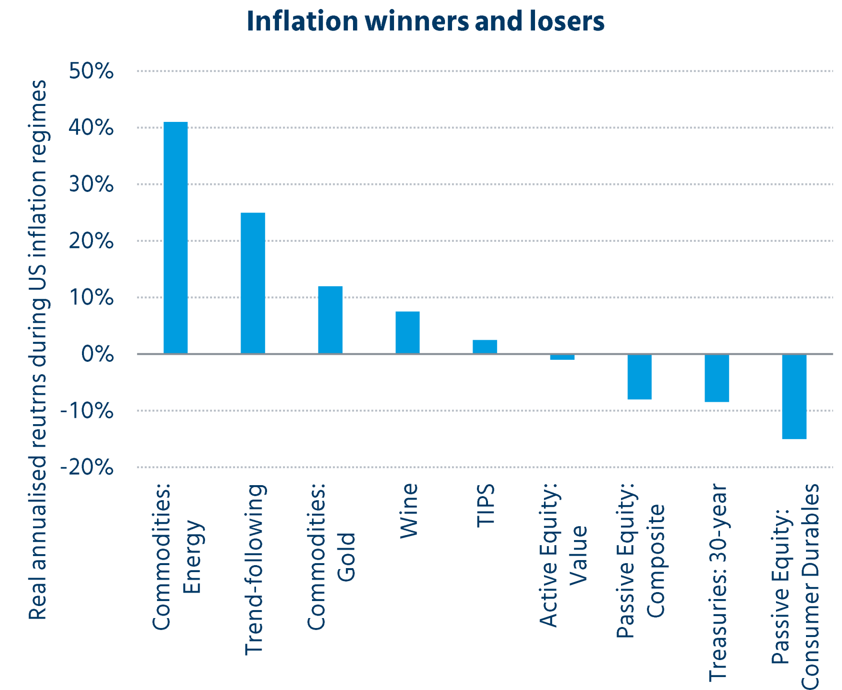
Asset classes to mitigate inflationary environments
Deeper dive (2)

- **Hedge funds**
  - **Macro strategies** may be better equipped at managing through a transitionary period than **trend-following strategies**, while anticipating and managing for a potential inflationary environment
- **Equities**
  - Long term investment best suited to high growth, low to moderate inflation environments. Can perform in rising inflation environments if supported by growth, until inflation levels rise to a level that makes markets nervous
  - Derivations of strategies which exhibit stronger inflation sensitivity than others – commodities and real assets – can be found in the equity markets: **natural resource equity, REITs and listed infrastructure**.
- **Private Debt**
  - Vast majority of cases a floating-rate asset class that provides a 'hedge' against central bank rate response to inflation.
  - Higher starting yields make them a more attractive option than listed floating rate instruments.



Source: Man, Mercer. Data as of June, 2021.

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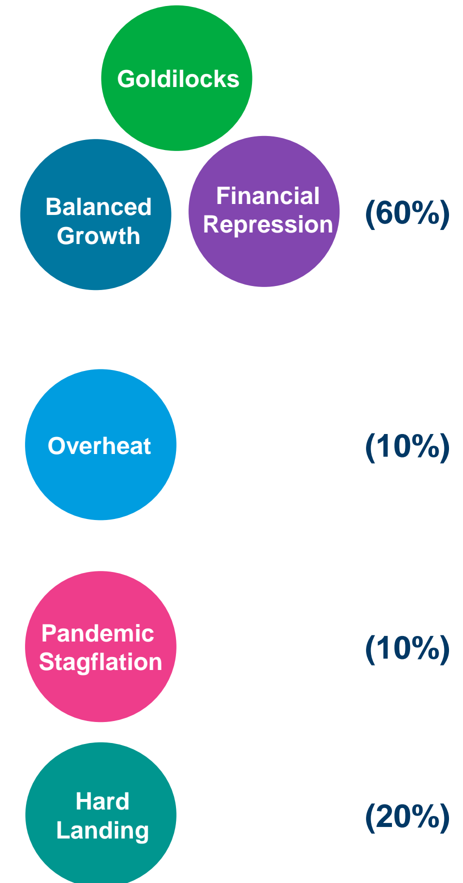
Asset classes to mitigate inflationary environments
Summary

- We have discussed a number of asset classes that can enhance the portfolio's robustness to inflation risks. As we have seen in the heat maps, however, **no single asset class gives universal inflation protection to all scenarios** – we need to invest across a selection of strategies to help broaden the protection and the Fund has many of the building blocks already.
  - The Fund is well positioned for growth scenarios where inflation moderately exceeds central bank targets (**balanced growth**) or where central banks force nominal yields below inflation (**financial repression**) – **equities and traditional real assets** such as property and infrastructure can provide what we feel to be sufficient protection.
  - The Fund is vulnerable to the **overheat** scenario where inflation spins out of control and central banks need to respond. Where they scramble to rein it in, rate risk may become more significant than inflation risk, and **floating rate strategies** such as **private debt** may soften the blow. Long nominal bonds (gilts and corporate bonds) are very exposed in these scenarios, suggesting maintaining a low interest rate hedge ratio.
  - Under the **pandemic stagflation** scenario where growth and inflation pull the central bank in different directions, the addition of **gold or commodities** can help protect against tail inflation risks but these present governance and operational difficulties.
  - Under the **hard landing** scenario, downside protection that worked in the past such as government bonds will be of limited use for valuation reasons. The **equity protection downside strategy** will help manage downside risk and **introducing gold** could be considered as an alternative to government bonds.



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Conclusion

Conclusion and next steps
Managing inflation risk

- In our view, whilst the outlook is uncertain, there is an increased risk of higher inflation scenarios.
- The Fund is well positioned against **growth-oriented and/or long term inflation scenarios**
  - Outright inflation protection through the LDI portfolio but with a low interest rate hedge ratio, as well as allocations to equities, infrastructure and real estate with inflation sensitivity
- **Higher inflation scenarios and where inflation is met with an aggressive rate response** present different problems that may require portfolio re-alignment.
- A next step for the Fund could be to review the level of inflation protection **at a portfolio level** across the different inflationary scenarios and the impact of different investment strategies. This would look to asses direct and indirect sensitivities.
- The Panel could look to increase the inflation hedge ratio (for example, by 10%, up to the current maximum permitted under the risk management framework) via the BlackRock LDI mandate, which could be implemented quickly, however there are practical considerations around the level of collateral required to implement this change. The FRMG will be considering whether the hedge ratios remain appropriate in more detail.
- A higher allocation to real assets (infrastructure and property) is another portfolio change that could be made, however given the drawdown process, this would take longer to fully implement.
- However, it should be noted that:
  - Inflation can manifest in different ways, and the risk posed by different scenarios evolves over time
  - There is no silver bullet strategy that works all the time, and across all scenarios
- A diversified exposure across a range of assets is a pragmatic solution to help the Fund mitigate various inflationary scenarios.

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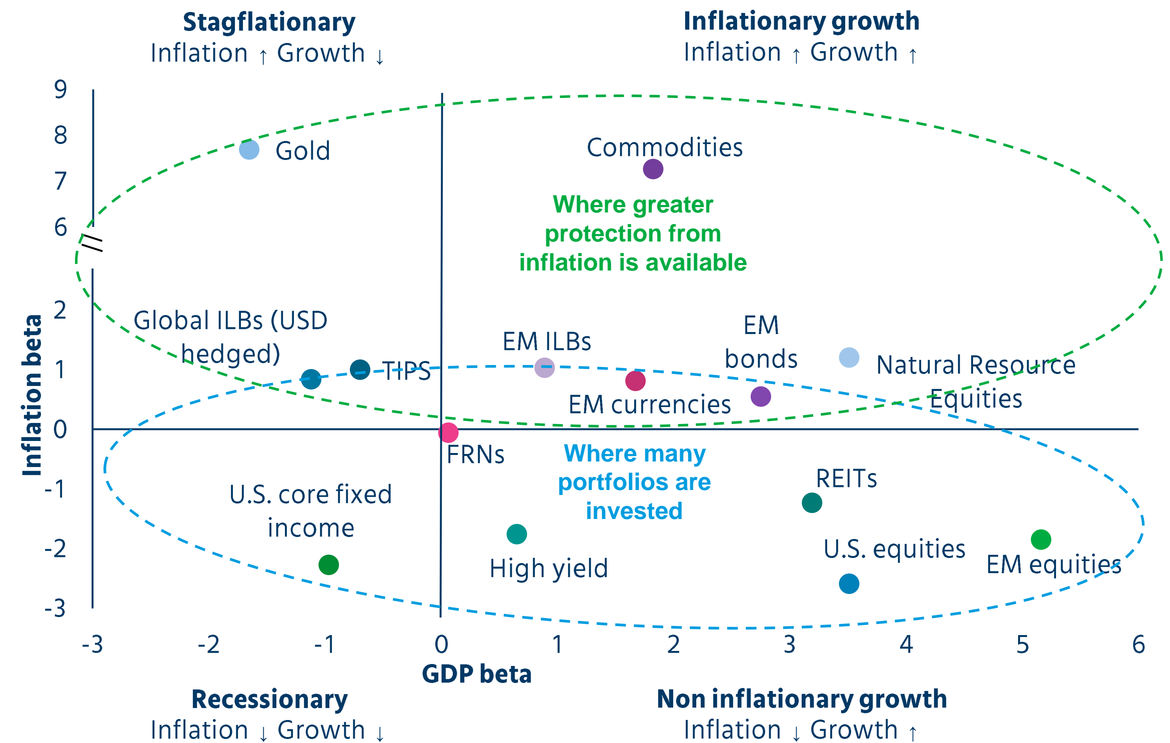
Appendix

Why are we talking about inflation now?
Portfolios are typically not structured for it

- The Fund has performed well during the past disinflationary environment, seeing equity and bond valuations sore.
- A regime shift to a more inflationary environment could negatively impact both equities and bonds.
- The correlation between equities and bonds has been negative through this period but could become positive.
- Investors may need to consider asset classes that exhibit higher ‘inflation beta’ to improve the robustness for different inflation scenarios.



Source: PIMCO. Data as of March 31, 2021.

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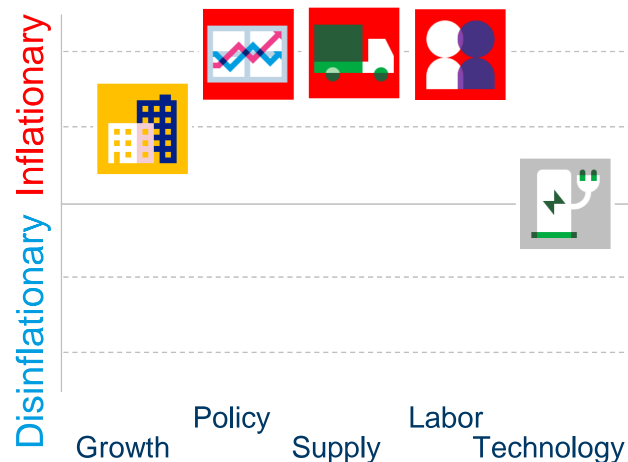
Building scenarios
(Relatively) recent history of inflation

- The 1970s inflation breakout resulted from a combination of strong (1960s) growth, loose policy, oil shocks, and a union-heavy labor market.
- Whilst a repeat of the 1970s has felt like a remote possibility in recent decades, supply chain issues and labor shortages are now combining with pressure on energy prices which leads many to re-assess the risk of stagflation.

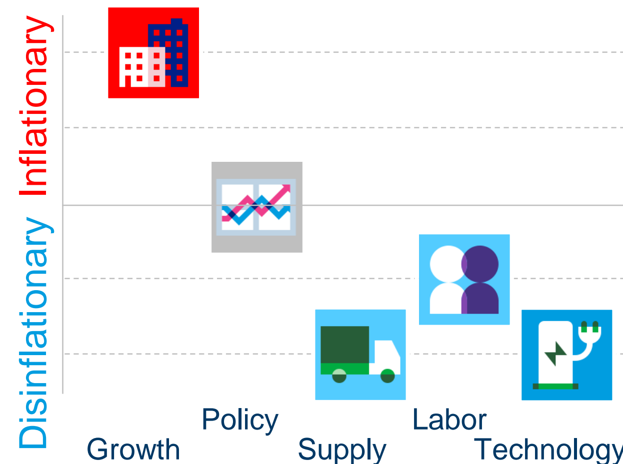
- The 1980s and early 90s saw a change to a disinflationary regime as CB independence increased and inflation fighting became their main focus.
- Other drivers were globalisation of supply chains, and extraordinary technology gains, including the launch of the internet. Wage growth was also moderate in developed markets.

- The disinflationary forces of technology, ageing demographics and high debt remain.
- However, these are now plotted against a number of inflationary forces emerging or already in play: uncertain outlook for global trade, amid high China/US tensions; shifts in inflation targeting by central banks; infrastructure spend required for energy transition.

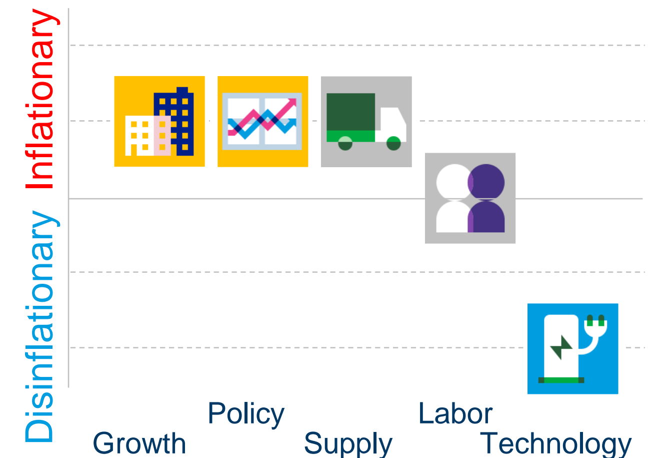
1970s Stagflation



1980-2020 Disinflation



2020s…?



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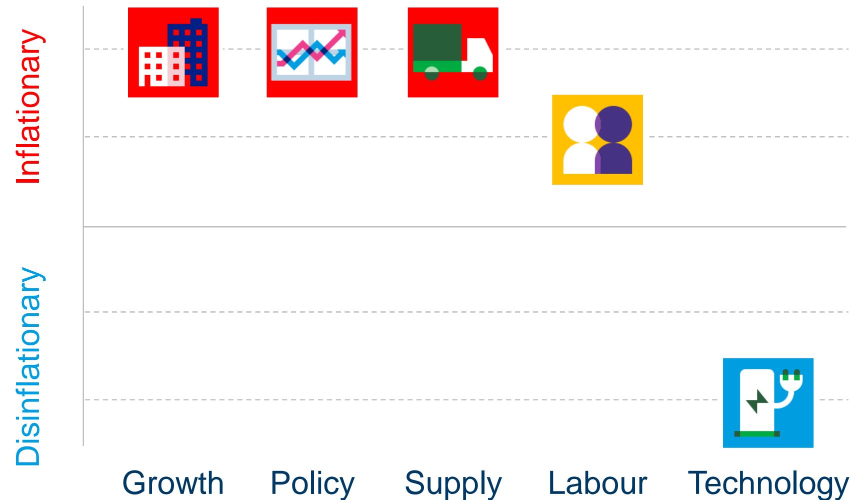
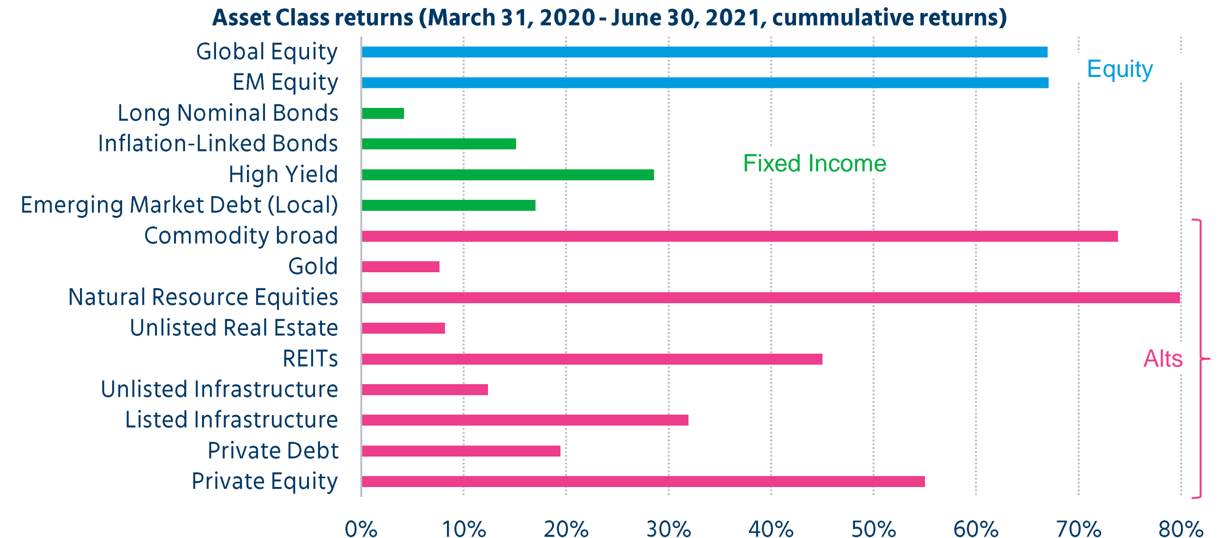
Building scenarios
Very recent history – strong growth, higher inflation, policy support

- **Macroeconomic Backdrop**
  - COVID-19 continues to hold back some regions, while other economies have reopened, as vaccines are rolled out
  - Economic growth is high, albeit off a low base, with demand supported by unprecedented levels of stimulus
  - Supply chains are stretched and bottlenecks have driven the inflationary rebound to a significant degree. Central banks keep the party going under the assumption that inflationary pressure is just transitory…



- **Impact on Assets**
  - Equities have surged forward, particularly cyclicals
  - Long nominal yields, break-evens, and real yields have risen but only moderately, suggesting that markets buy into the 'transitory inflation' narrative for now
  - Real assets and commodities have risen sharply, particularly industrial metals and energy; precious metals (including gold) have seen more moderate returns amid rising real yields and risk-on market sentiment



Source: Thomson Reuters Datastream, Burgiss, Mercer. All returns in USD.

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Strategies to mitigate inflationary environments
Positioning for different scenarios

Scenario	Strategy Selection implications
Balanced Growth	Growth asset classes do well in this optimistic scenario and the gradual pace of policy normalization means that duration assets will not be hurt either. Traditional portfolios are well positioned for this.
Financial Repression	Monetary expansion in a strong growth scenario is a deliberate policy to inflate away debt. All asset classes do well in nominal terms but in real terms, fixed income will suffer – the principal rationale of financial repression! Portfolios need to position towards real cashflows (real estate/infrastructure and equities with pricing power) especially if they need to meet real liabilities.
Goldilocks	A more optimistic version of balanced growth, with greater productivity gains suppressing inflation, and a return to normal for supply chains. A scenario for which traditional portfolios are well positioned.
Pandemic Stagflation	A portfolio meltdown that spares few asset classes, including all those contained in traditional portfolios. Commodities and gold are the only reliable hedges against these tail risks in the short term. Should conditions develop into a protracted stagflation environment, inflation linked bonds would be expected to provide protection.
Hard Landing	In a disinflationary recession, whether driven by the return of austerity or not, nominal assets will do well. High valuations for government bonds limit their upside however, so alternative downside protection strategies should be considered for portfolios, such as gold and hedge fund solutions.
Overheat	When central banks hit the brake because inflation is getting out of control, the majority of asset classes do poorly. This includes gold and nominal bonds due to the rise in real yields – floating rate assets are preferred. Commodity exposure could still provide support as inflation remains at elevated levels, depending on sentiment.

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