

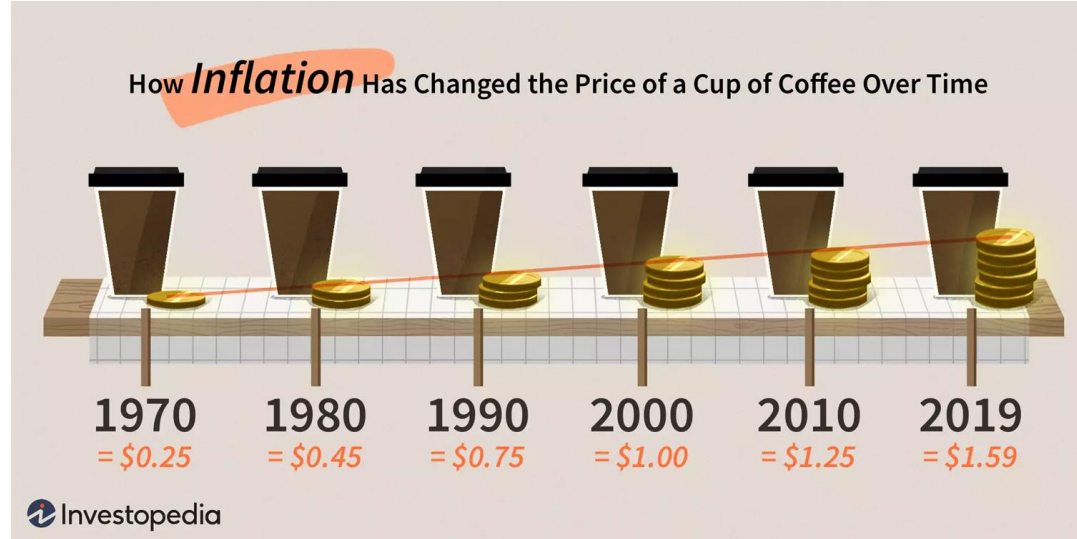


Investing Sustainably to defend against Inflationary Outcomes

Keith Guthrie, Deputy CIO

What is inflation?

Price increases of goods or services /
depreciation of fiat currency



There can be different drivers of inflation:

- Excess demand
- Insufficient supply
- Excess money creation and velocity (base or credit)



Inflation in the short term

Reopening and base effects have pushed up inflation

Most extreme in the US, peaking now

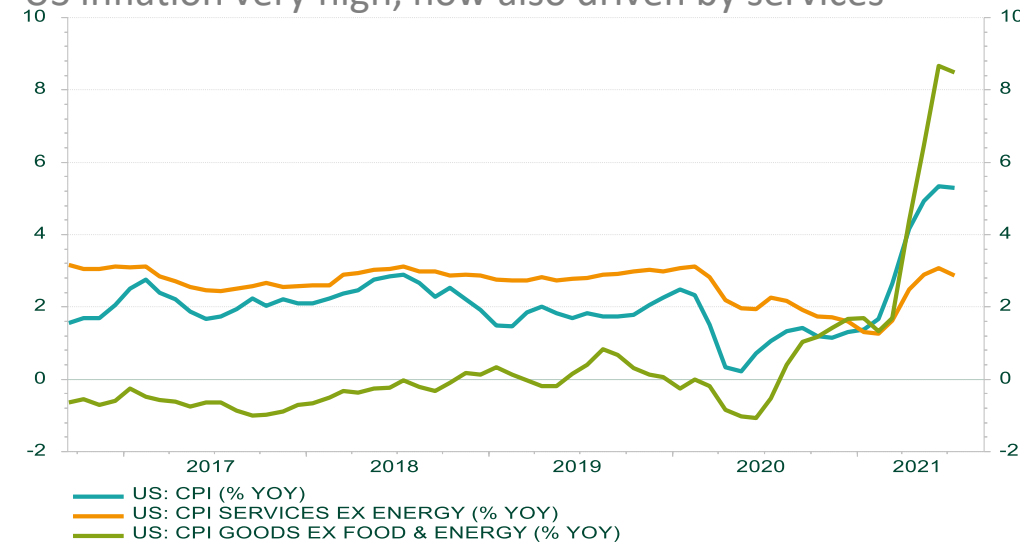
Will continue to rise into Q4 in Europe and the UK

Inflation likely to remain elevated well into 2022

- Accelerating demand
- Supply Chain disruptions everywhere
- Labour shortages
- Shelter inflation

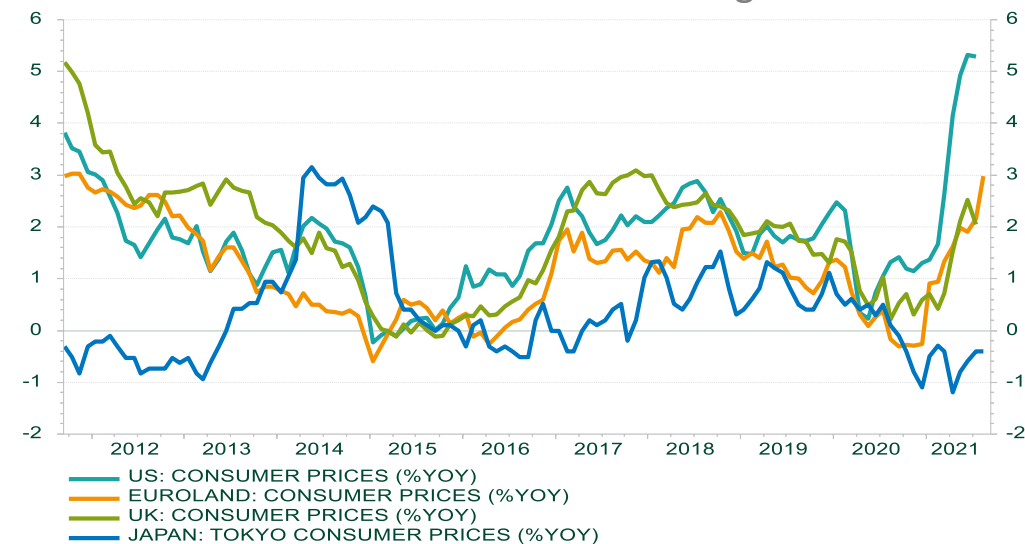
A lot of factors to keep inflation elevated

US inflation very high, now also driven by services



Source: Refinitiv Datastream

Inflation in the Eurozone and the UK rising as well



Source: Refinitiv Datastream



Long term: Why might the next 10 years be different?

What is different?

- Debt
- Monetary/Fiscal Co-ordination
- Deglobalisation
- Global Labour supply
- Green Transition

What might be the same?

- Demography – the same or does it flip?
- Automation
- Services Growth
- Money Printing



Potential Economic and Market Scenarios

Higher Inflation

Higher Nominal Growth?

Lower Real Growth or Higher Real Growth?

Market implications

- Yield Curves – what can debt markets stomach, what can borrowers bear?
- Equities
- Commodities
- Breakeven Inflation implied in Index Linked Bond markets



What does it mean for portfolios?

The key risk is rising discount rates (yield curves)

Very big gap between inflation and nominal rates

High valuations

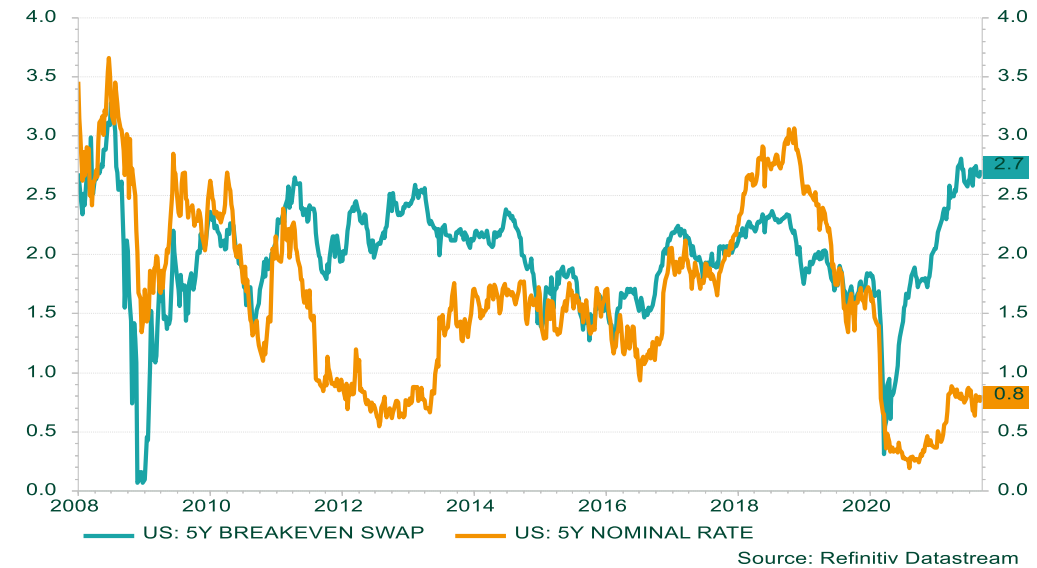
Any rapid rise in yields can negatively impact equities as valuations are high

- When inflation rises, this can be bad for equities and bonds

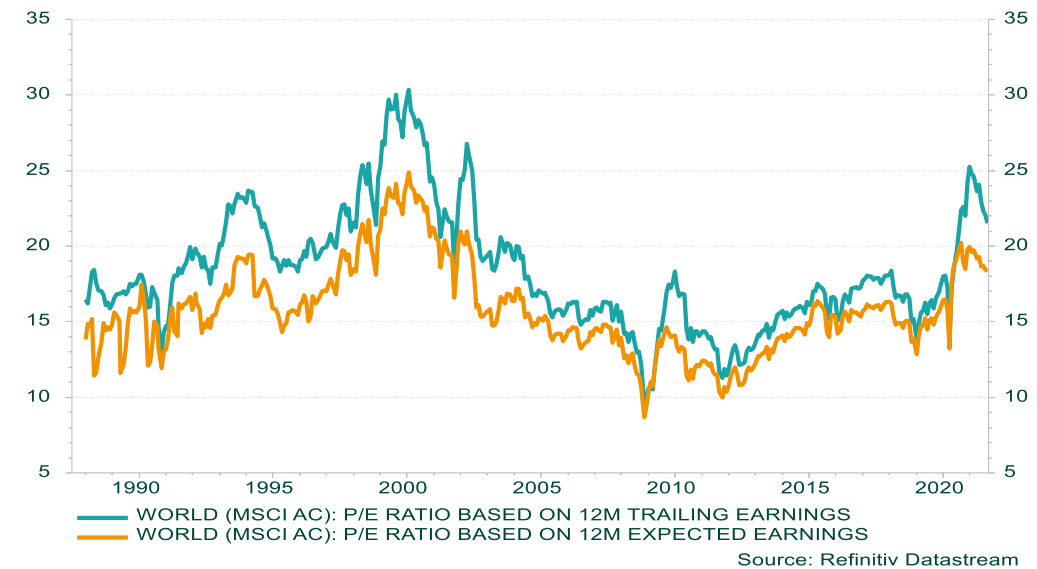
Owning inflation sensitive assets can be a diversifier

- For UK pension fund liabilities, hedge UK inflation
- But for global growth portfolio own assets that diversify against all forms of inflation

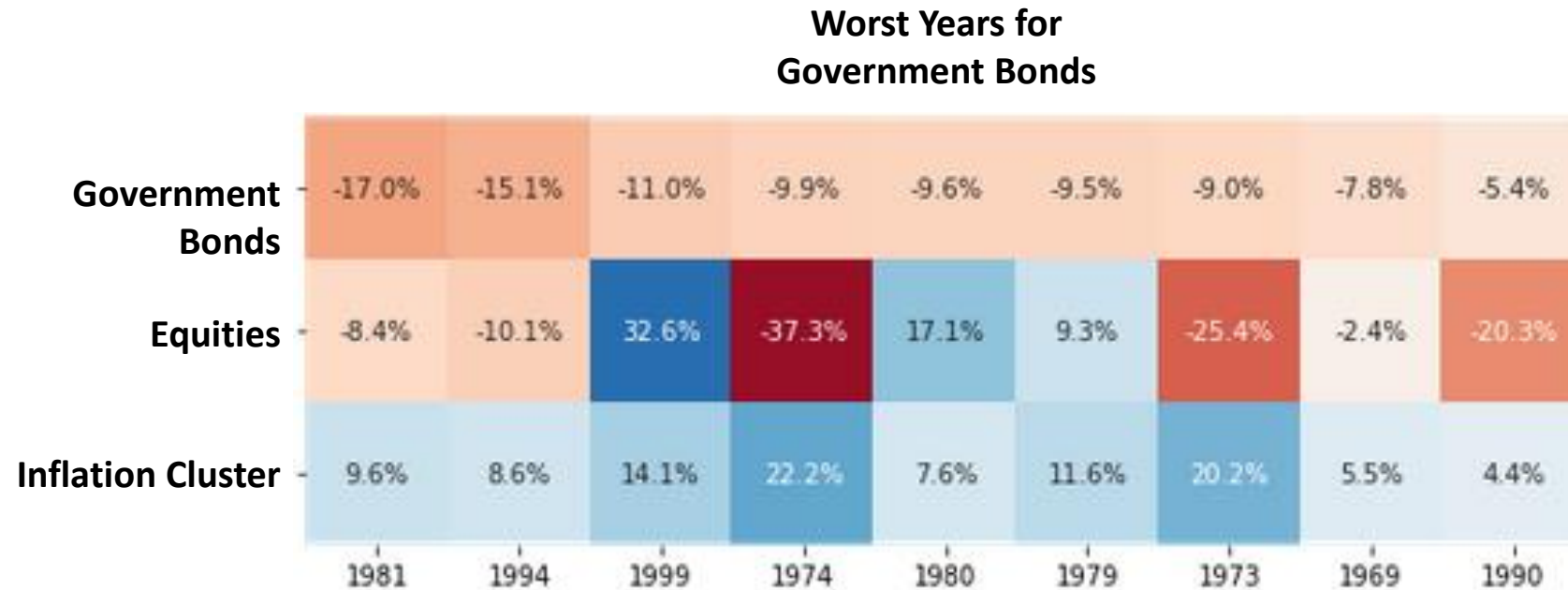
Big gap between inflation and nominal rates



High equity valuations



Using inflation assets as an offset



Source: Cardano mix of global assets, Bridgewater

Conclusion

In poor periods for government bonds equity performance can be mixed.
Inflation sensitive assets have been consistently positive.
A sizeable exposure to a cluster of Inflation sensitive assets is diversifying



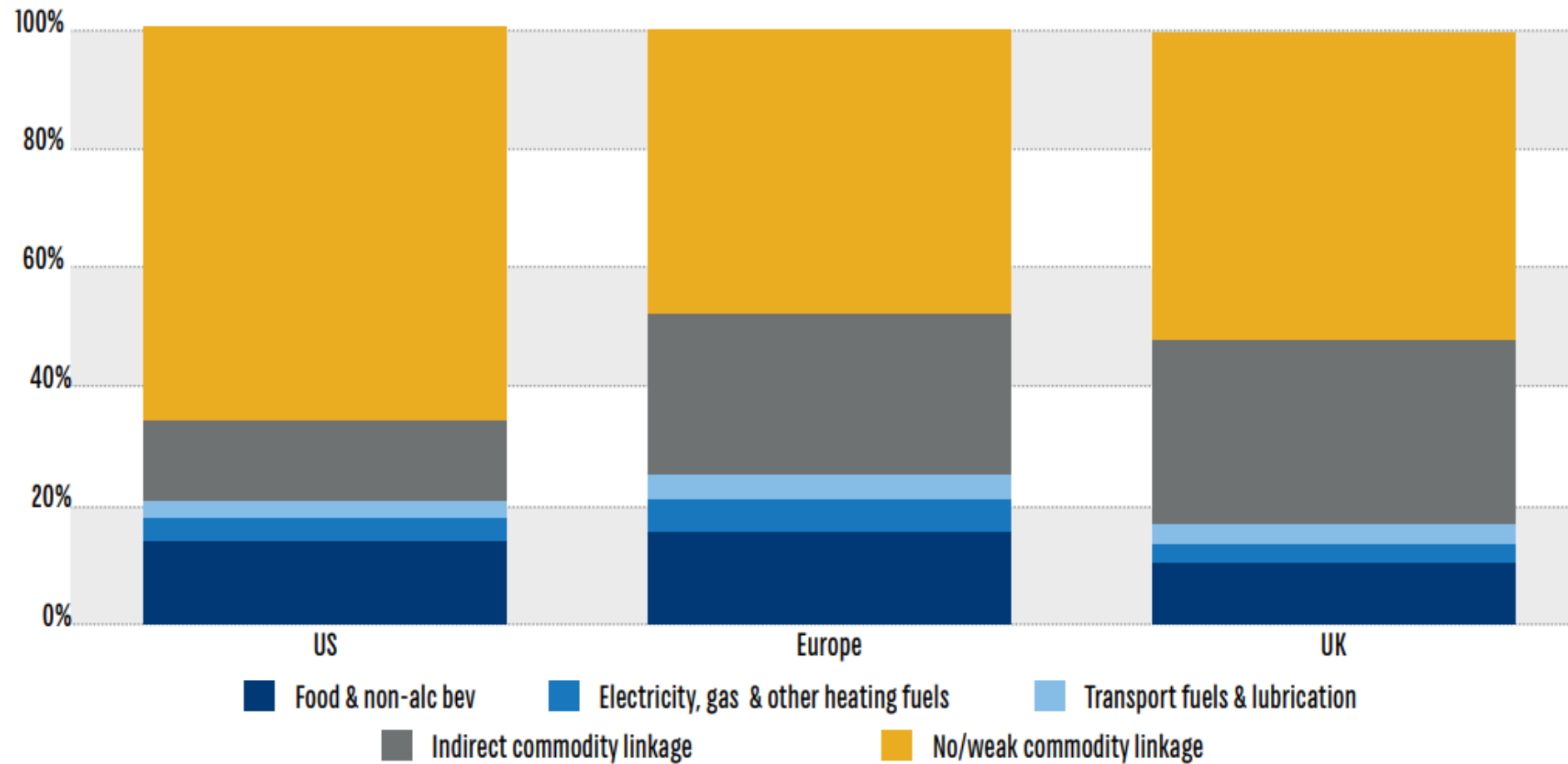
What are the best inflation sensitive assets from first principles? Which are Sustainable?

- Breakeven Inflation
 - Inflation Linked Bonds?
- Gold
 - Crypto??
- Commodities
 - Fossil Fuel Commodities: Oil, Nat Gas
 - Base and other metals: Iron, Copper, Nickle, ranium, Nickle, Cobalt, Silver
 - Agricultural commodities: Agricultural, Livestock
 - Green transition commodities: Carbon, Lithium, Hydrogen, Uranium
- Real Assets
 - Land, Buildings
 - Infrastructure
 - Timber, Forestry
- FX



The case for commodities

Figure 3: Commodities account for a big part of headline consumer price indices



Source: US Bureau of Labor Statistics, European Central Bank, UK Office for National Statistics, Schrodgers, data correct as at 30 June 2016.



Trade-offs between different commodity sub-sectors

BCOM indices	R ² vs US CPI	R ² vs MSCI World	R ² vs US10Yr BEI
Energy	41%	3%	23%
Agriculture	13%	7%	17%
Industrial metals	12%	27%	50%
Precious metals	4%	2%	11%
Livestock	11%	12%	3%

As measured over the period 1992 to 2020, from beginning of BCOM series.

BEI from 2008 due shorter history of inflation swap data.

Source: Cardano

Energy Commodities are the best short term inflation hedge

- But Sustainability is poor and vulnerable to transition

Industrial metals provide good long term inflation linkage and will become increasingly important with the green transition

- but they are also highly growth sensitive so may be less diversifying in a portfolio

Precious Metals, specifically Gold, performs best in extremes of Deflation, Stagflation and money printing (real rates linkage)

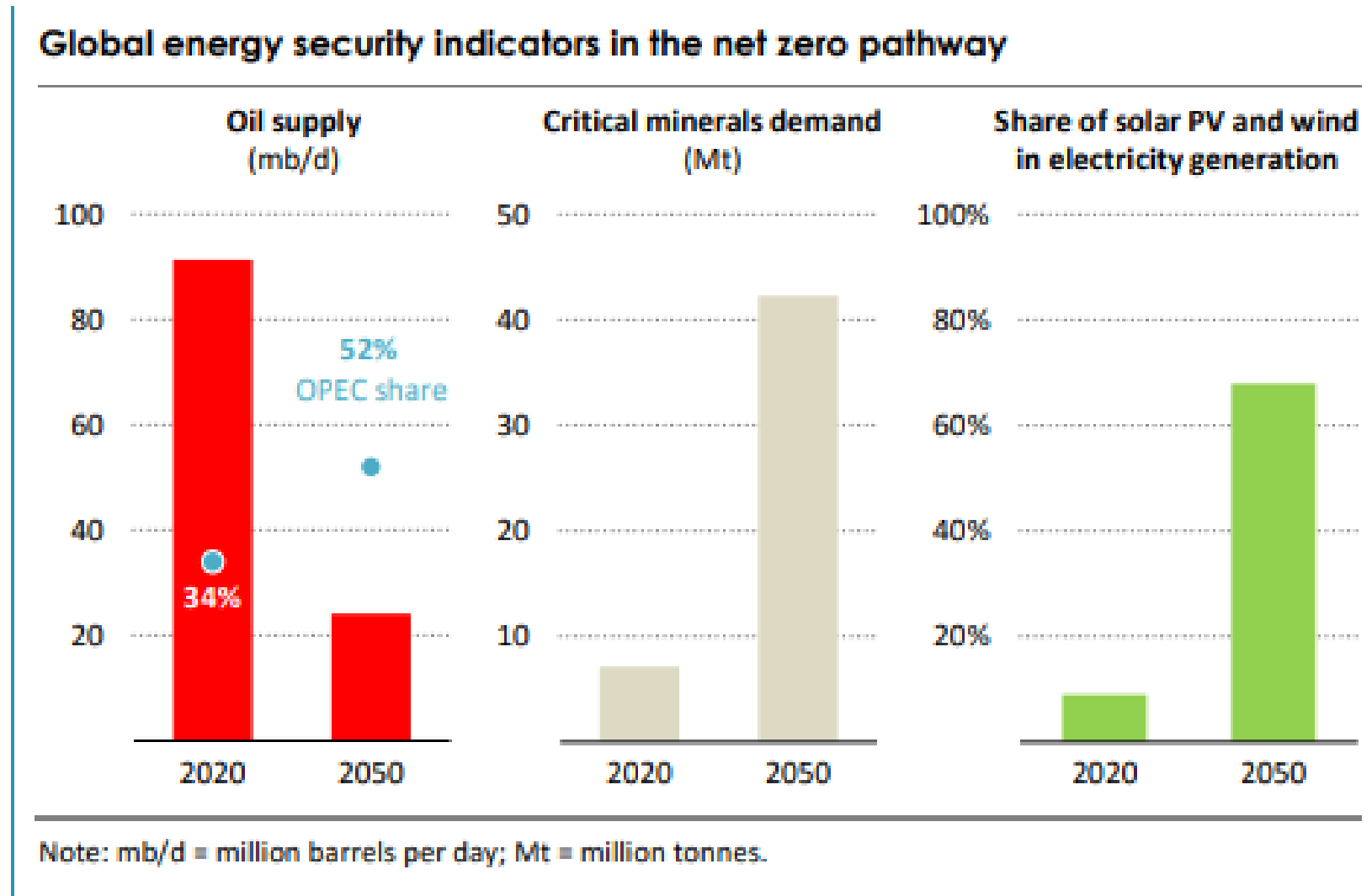
- They are good portfolio diversifiers, but short term linkages to inflation are low

Ags are very diversifying but have weaker inflation linkages for Developed Markets.

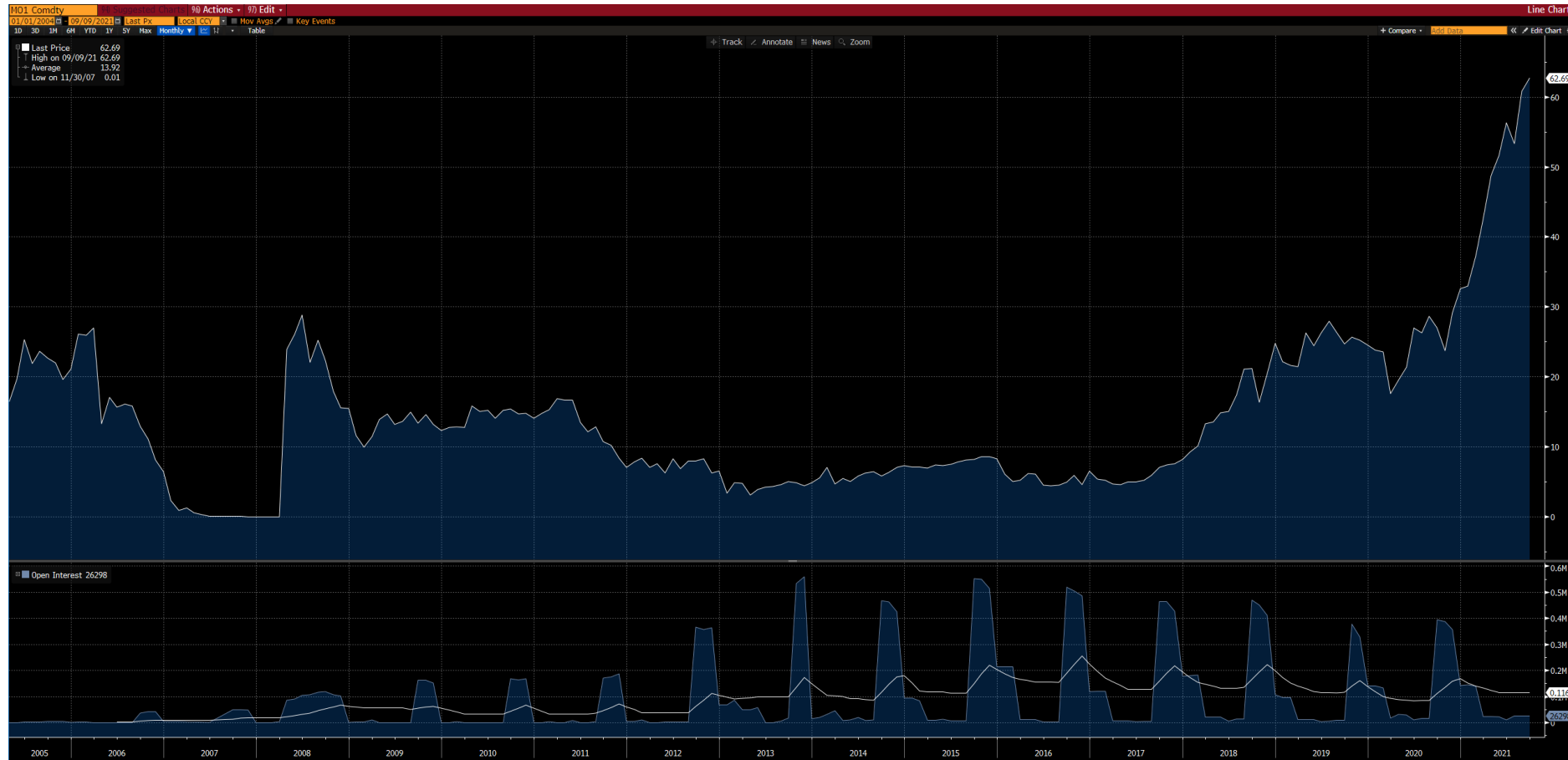
- There can be a high level of idiosyncratic drivers unrelated to macro fundamentals.
- Livestock have low inflation correlation and poor Sustainability



The climate opportunity



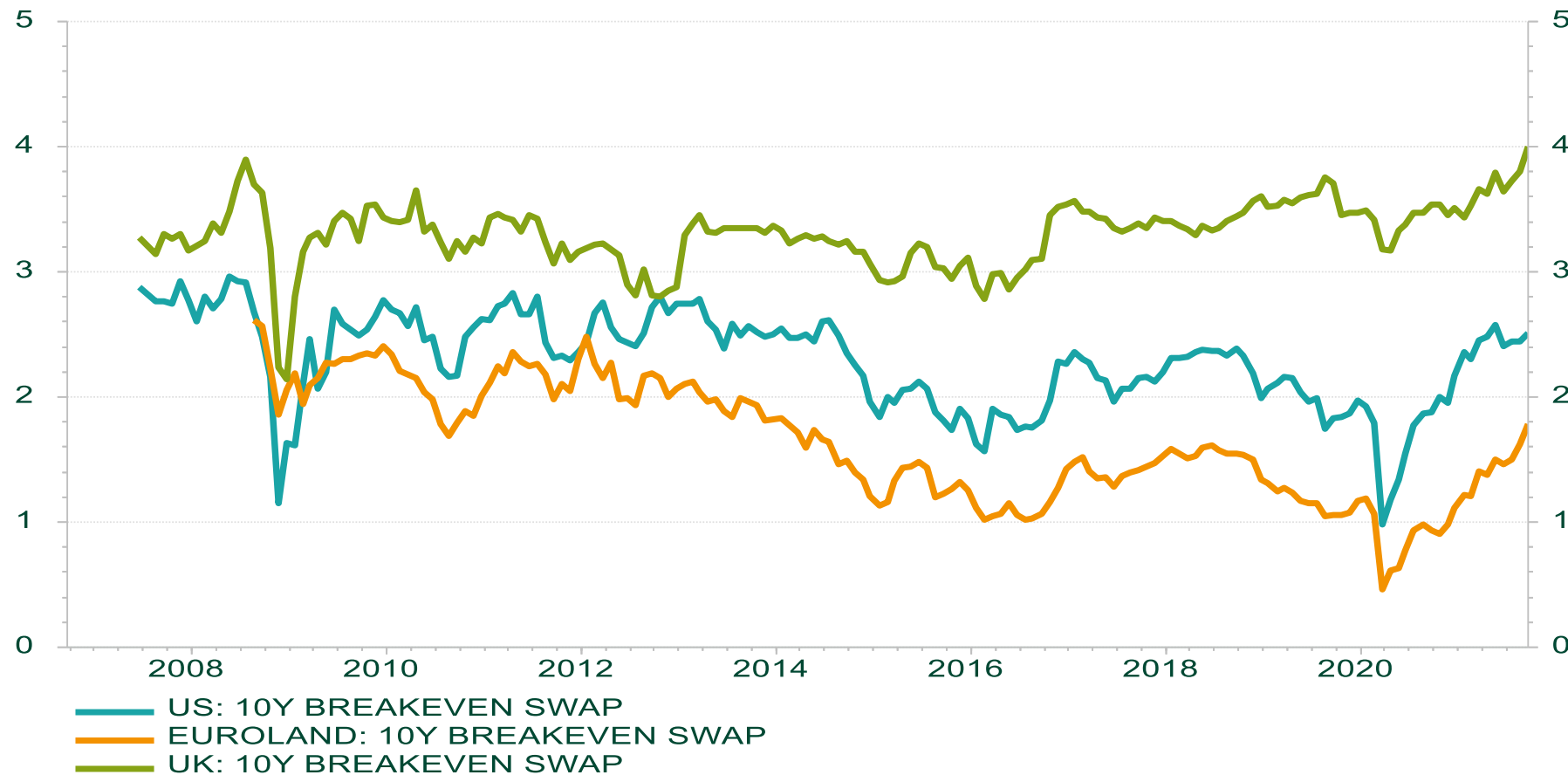
Carbon Emission Certificates – a new commodity to consider?



Source: Bloomberg



Break Even Inflation - Market pricing



Source: Refinitiv Datastream

Inflation priced into the market	1Y	1Y 1Y forward
US	3.1%	2.6%
Eurozone	2.2%	1.8%
UK (RPI)	5.1%	3.9%

Source: Cardano



Constructing more inflation robust growth portfolios with sustainability in mind

Commodity Exposure

- Gold
- Base Metals
- Carbon

Break Evens

- US, Europe
- UK?

FX Exposure

Real Assets



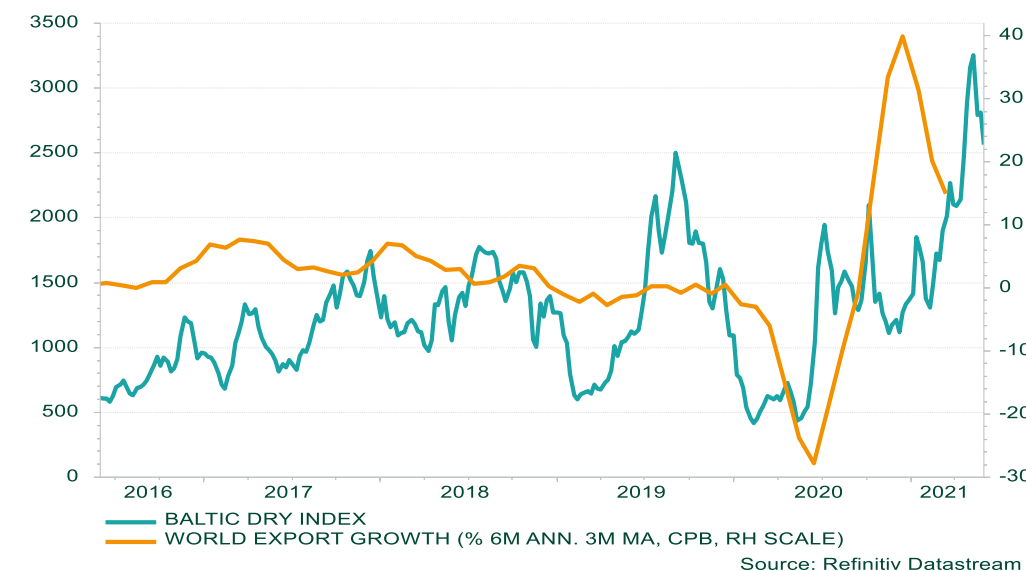
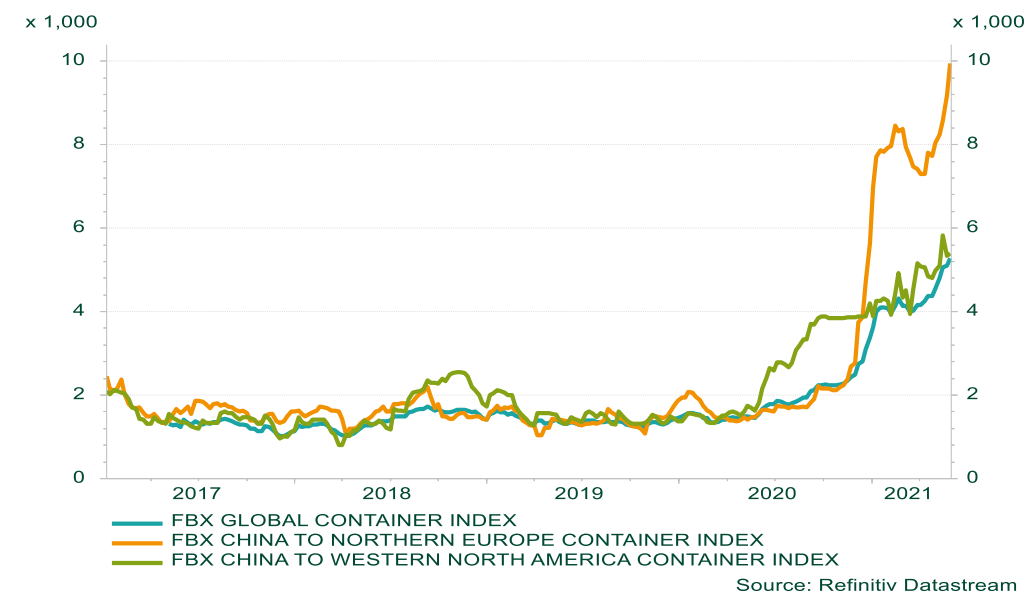
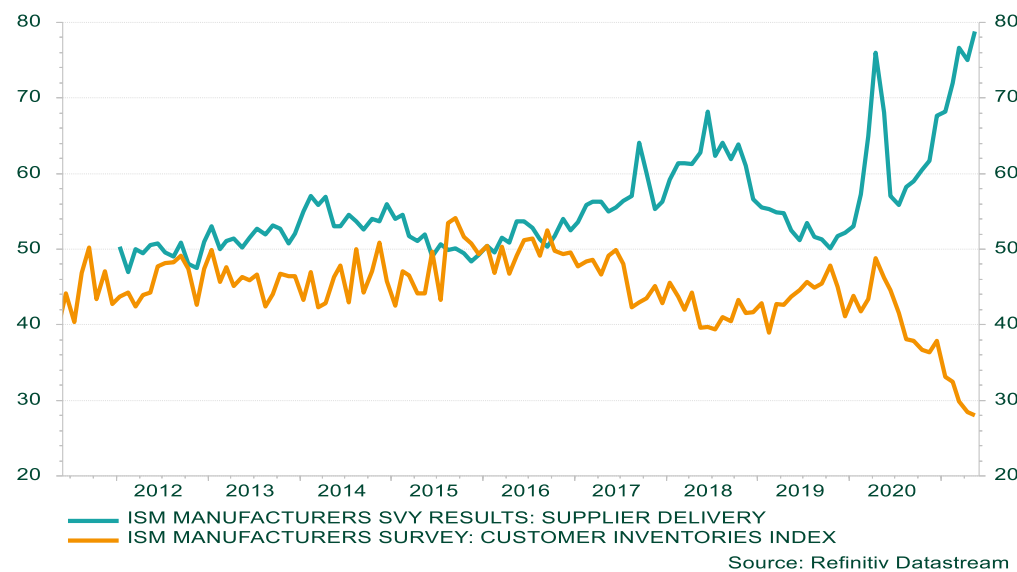
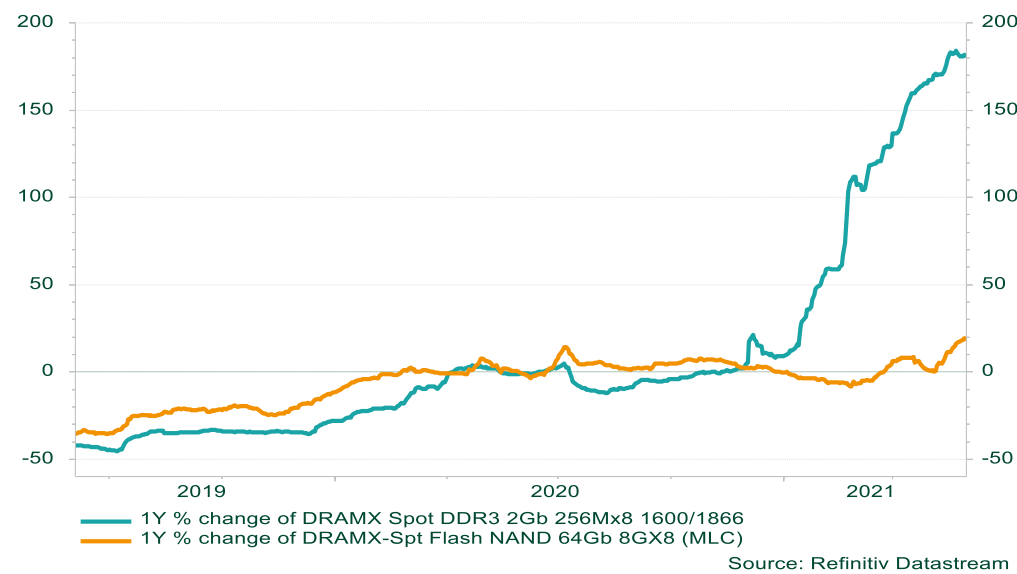
Appendix

Detailed analysis of current inflation dynamics



Transitory inflation to be more sticky than expected

Supply chain disruptions are everywhere

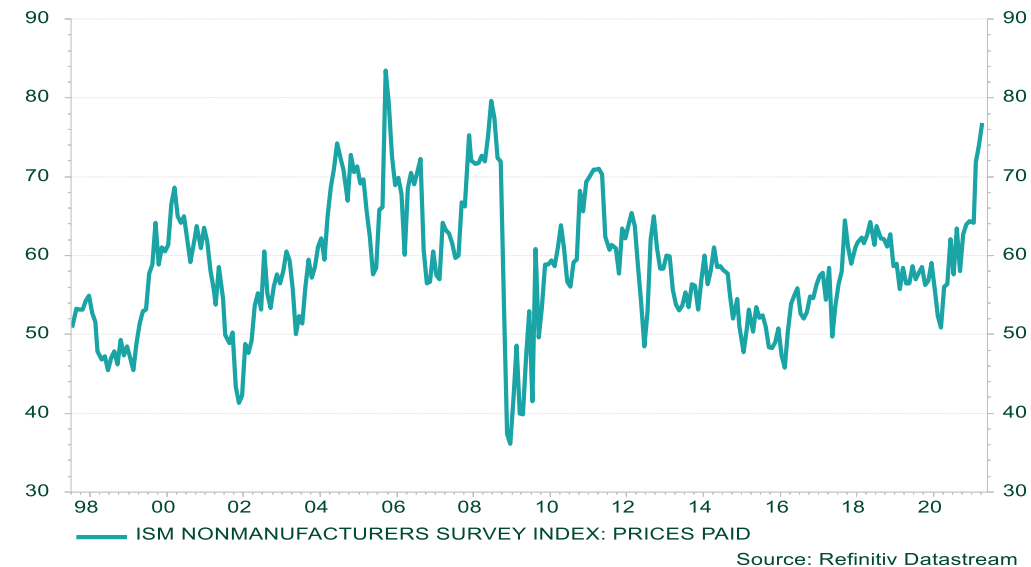


New transitory effects to keep inflation elevated

Some effects might have longer staying power, with base effects continuing into next year

Service price inflation might come in higher for a while when the economy opens up

- ISM services price component and anecdotal evidence indicate that service prices will rise
- One of the drivers for higher services inflation is higher wages. One of the greatest uncertainties is whether higher wage growth will be with us for the longer term. The labour market has been tightening. As extended benefits expire in September and schools reopen, people will be more incentivized to look for jobs. Many people have just moved on to new jobs and are not coming back to their original jobs.



Inflation to be elevated in late 2022

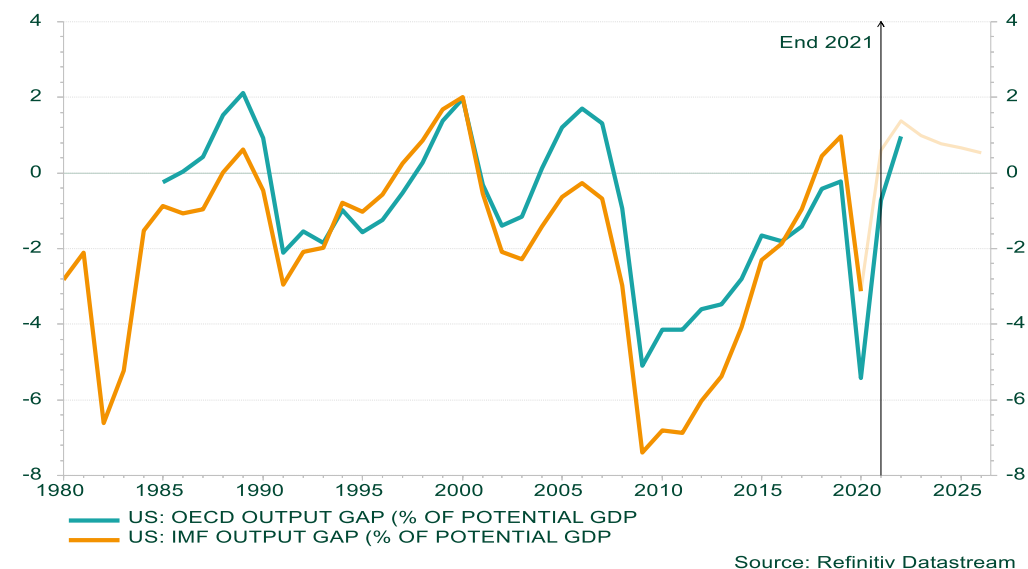
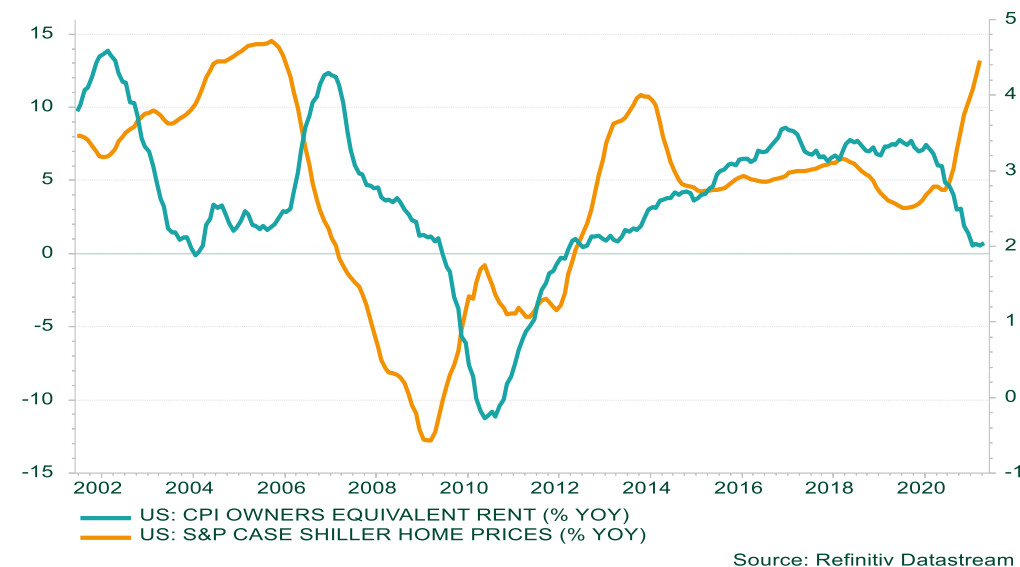
Even when all transitory effects fade, we expect inflation to be elevated as rents rise and the economy is beyond full capacity

Shelter inflation to rise

- One of the key drivers in non-goods inflation is shelter inflation (33% of headline CPI), which is very low at the moment. However, with rapidly rising house prices, it is a matter of time before shelter inflation rises

Output gap to turn positive on recovery/fiscal stimulus

- On a very general level, US economic activity is already beyond its end-2019 level. Continuous fiscal stimulus The IMF expects the output gap to be positive this year, the OECD next year

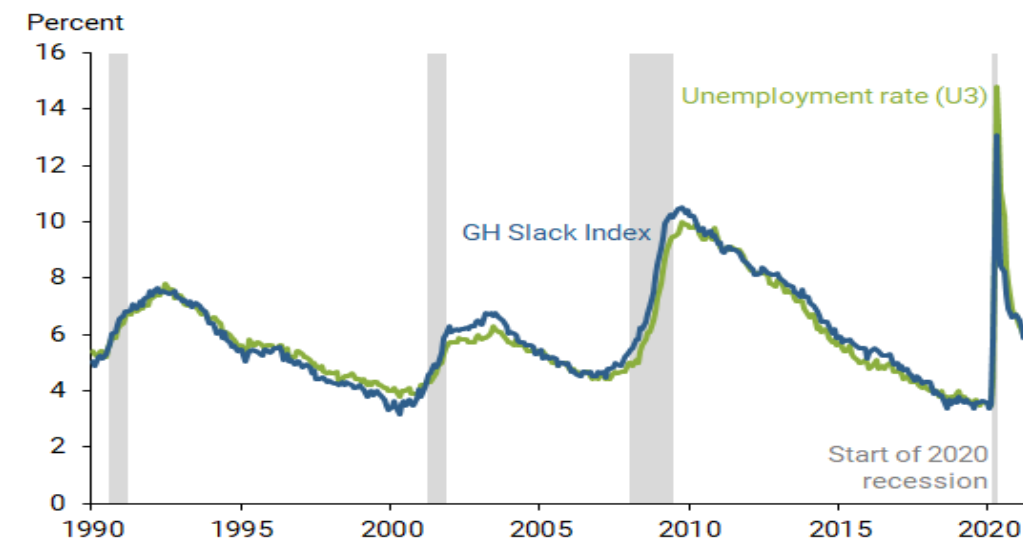
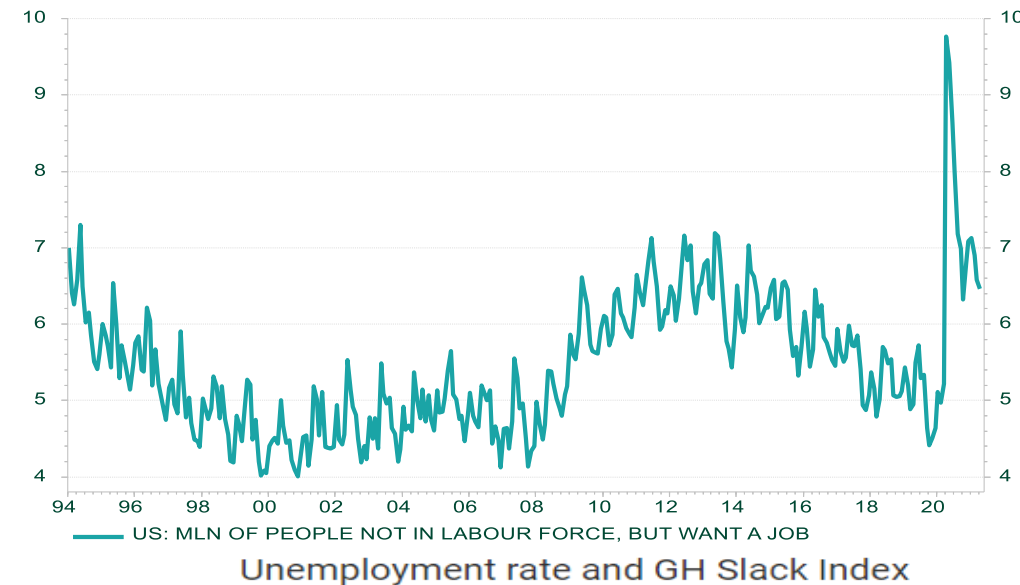


What are the arguments for inflation to be transitory?

One has to look at counterarguments

Still plenty of labour market slack, which will become apparent when extended benefits end and people have spent their stimulus checks. From September onwards they will start looking for a job, which means downward pressure on wage growth

- This is indeed a possibility as we know a lot of people are not counted as being in the labour force but want a job. However, given how quickly unemployment is coming down and the expectation that we haven't seen the peak in service prices yet as the economy is opening up, means that inflation should be elevated well into next year.



Source: San Francisco Fed – The divergent signals about labor market slack: analysing 26 indicators

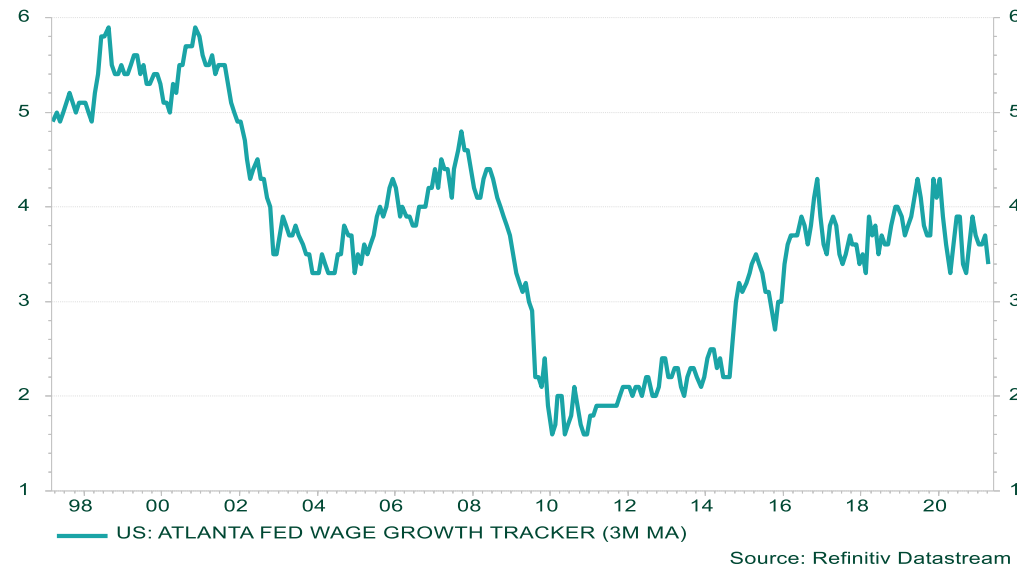


What are the arguments for inflation to be transitory?

- Proponents of transitory inflation also focus on the fact that anecdotal wage gains have not showed up in the numbers. Wage inflation never came down much during the crisis, compared to the previous recession. But we are now starting to see an uptick in wages of low skilled jobs.

Will OPEC+ keep its discipline?

- We have seen that the oil price has had a major positive influence on CPI which will now fade. One important factor is that OPEC+ has been very disciplined. We would expect that discipline will lessen once demand returns. However, we don't know whether that will mean a gradual adjustment in oil price or an abrupt fall



What are the arguments for inflation to be transitory?

Inflation is a lagging indicator

- It takes almost four years for inflation to trough on average after a recession.

Excess debt suppresses economic growth and hence low inflation

- All debt bubble peaks have resulted in disinflation. This would imply the Philips curve remains flat

Velocity of money is low

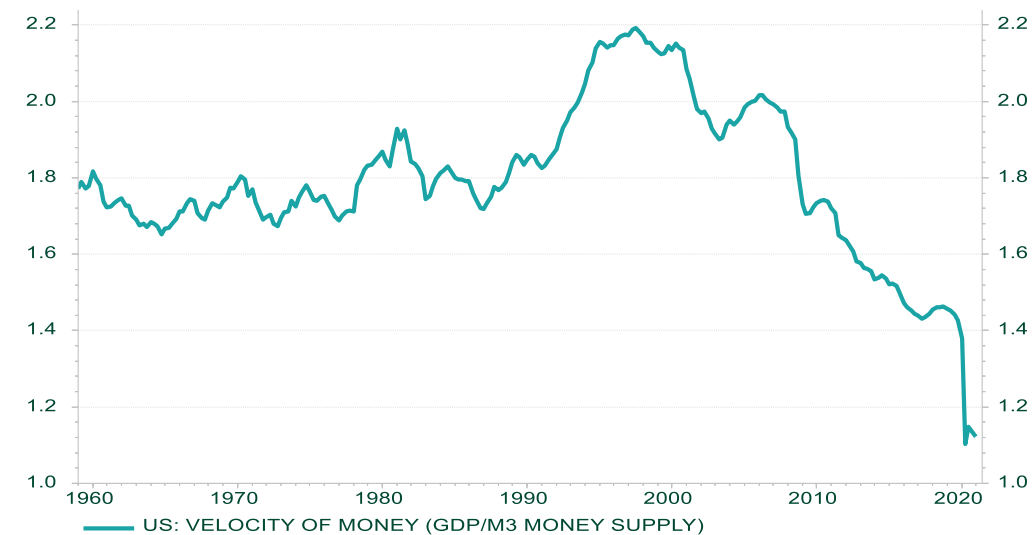
- Related to the previous argument, debt has caused easy central bank policy (high money growth) and low GDP growth. The velocity of money has thus fallen. This means 1) monetary policy has not been that effective (so the debt problem is there), 2) we have seen enormous money printing during the COVID-crisis, which is starting to being spent now that we move out of crisis mode. When growth recovers and the Fed tapers, the velocity of money goes up. Key for inflation is 1) the direction of travel (up), 2) whether the velocity makes it beyond the prepandemic velocity number (just over 1.4)

Inflation Troughs After Recessions

	Last Quarter of Recession	Low Point in Inflation After End of Recession	Lag in Quarters
1.	Q4 1982	Q1 1987	17
2.	Q1 1991	Q2 1998	29
3.	Q4 2001	Q3 2003	7
4.	Q2 2009	Q4 2010	6
5.	Average		14.8

Source: Bureau of Economic Analysis, N.B.E.R. Inflation is represented by the Core PCE price index.

Source: Hoisington Management



Source: Refinitiv Datastream



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