October 2022

This material is for investment professionals only and should not be relied upon by private investors.

Global Macro Insights

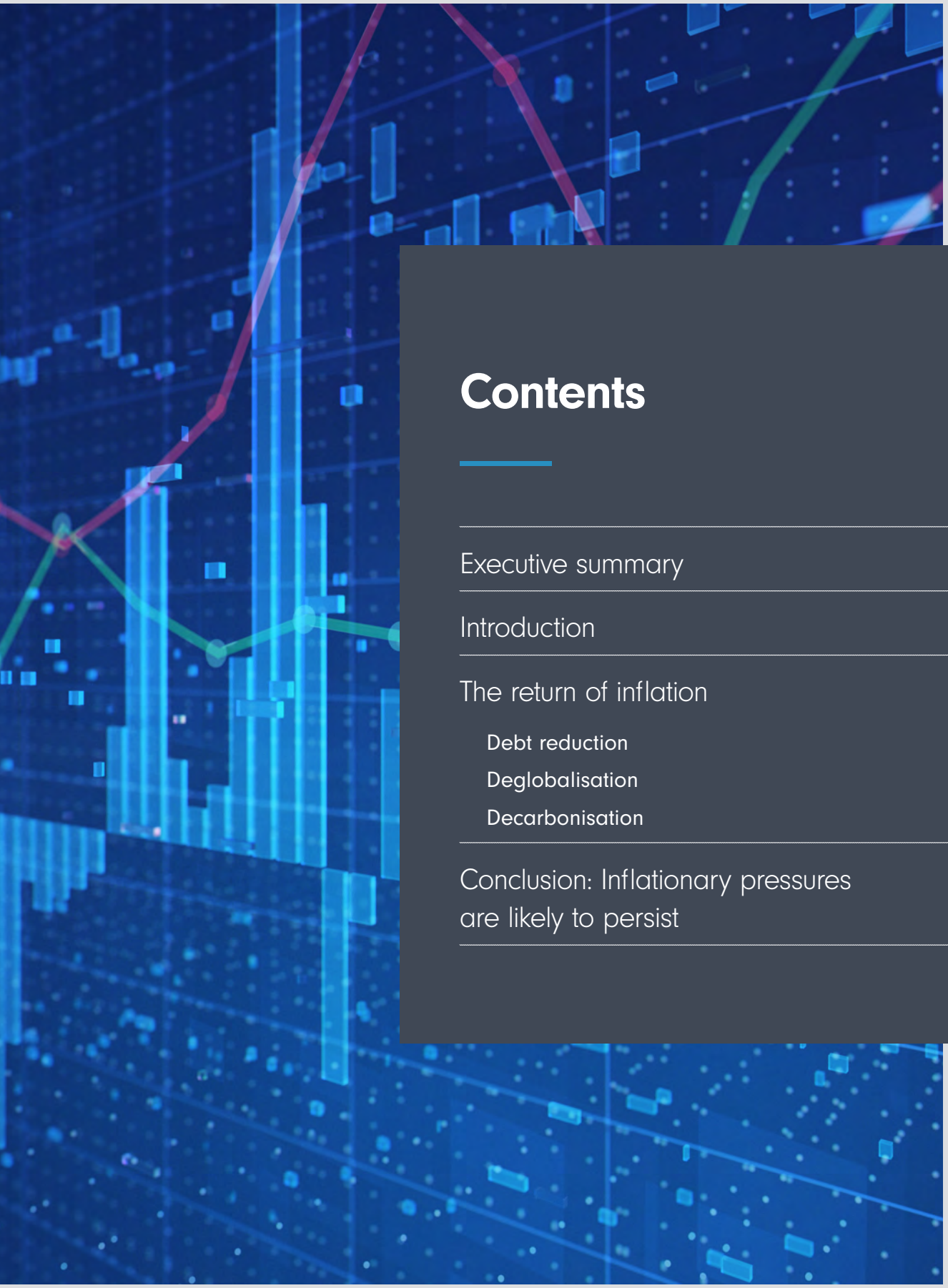
Strategic asset allocation implications of higher inflation: The return of inflation

Salman Ahmed
Global Head of Macro and Strategic Asset Allocation

Stefan Rusev
Senior Strategic Asset Allocation Strategist

Investment Professionals

Fidelity INTERNATIONAL



Contents

Executive summary 3

Introduction 4

The return of inflation 6

- Debt reduction 7
- Deglobalisation 9
- Decarbonisation 12

Conclusion: Inflationary pressures are likely to persist 13

Executive summary

- The higher inflation we are currently experiencing is not just a cyclical phenomenon driven by economic disruption relating to the pandemic or Russia's invasion of Ukraine.
- Structural trends like decarbonisation, deglobalisation, and the process of dealing with high debt levels could keep global inflationary pressures elevated over the next decade.
- This could limit central banks' ability to support growth with monetary stimulus, marking a regime change from the disinflationary post-Global Financial Crisis (GFC) era when real interest rates (interest rates adjusted for inflation) were consistently driven further into negative territory to support growth. The market reaction to the UK government's recent fiscal expansion plans demonstrates the difficulties that policymakers around the world could face when seeking to support growth while simultaneously controlling inflation.
- Central banks will still want to support growth as much as they are able and will therefore seek to ensure the sustainability of existing debt burdens. As such, the Federal Reserve (Fed) could be forced to target a real interest rate of zero or slightly lower, with the terminal inflation rate subsequently settling above 2%.
- The investment implications of inflation shocks are discussed in detail in part two of this paper, 'Strategic asset allocation implications of higher inflation: Inflation shocks and return projections'.

Introduction

Since 2021, we have witnessed a regime change take hold within the global macroeconomic environment amid a plethora of shocks, including those stemming from the pandemic and the war in Ukraine. Regime change is not a phrase we use lightly, but recent shifts in both the geopolitical and policy backdrops have caused macroeconomic developments that have only strengthened our conviction. These dynamics have had a profound impact on the investment outlook and they have become central to our strategic thinking.

Perhaps the most palpable symptom of the regime change has been higher inflation, particularly for consumers who are now facing an intense cost-of-living crisis. This has been the result of a severe mismatch developing between aggregate demand and supply, which itself was exacerbated by policy choices taken in the wake of the pandemic shock. The Fed clearly underestimated the strength of the post-pandemic inflationary impulse and the first half of 2022 was extremely challenging for both equity and bond markets globally as this became evident. However, we believe that what we are experiencing is not just a cyclical phenomenon driven by economic disruption relating to the pandemic or Russia's invasion of Ukraine; rather, it is structural shift underpinned by several broad, long-term trends that are likely to keep inflation elevated for many years. These include decarbonisation activity required in the shift towards a more sustainable economy, deglobalisation activity linked to rising geopolitical competition, and policymakers' desire to sustain or even debase the real value of high global debt levels.

The long-term investment implications will be multi-faceted, but persistently higher inflation is already presenting central banks with the dilemma of trading-off between price stability and growth. Some investors are concerned about the threat of an inflationary scenario akin to that of the 1970s, whereby temporary inflationary pressures spiralled into a de-anchoring of inflation expectations that necessitated the prolonged economic shock therapy of Volckerism. This was evident in investors' reaction to the UK government's September 'mini-budget', after which gilt yields experienced their largest daily advance since the currency crisis of 1985, while sterling suffered its largest decline against the dollar since Black Wednesday in 1992.

Our central expectation is that today's established inflation-targeting frameworks will ultimately prevent the need for Volcker-like policies in jurisdictions where fiscal credibility is maintained, allowing the threat of inflationary spirals to be dispelled. However, structural inflationary pressures will be far more difficult to quell and could still cause inflation to remain persistently elevated, at least in comparison to the disinflationary post-GFC era.

Persistently stronger inflationary pressures would likely require consistently higher average nominal interest rates. Together, these factors would likely to result in slower and more volatile economic growth. In other words, we could be heading towards an environment in which average asset-class real returns are lower than they were during the post-GFC bull market. Meanwhile, the struggle to control inflation while also supporting growth will likely create policy uncertainty, causing market volatility to remain elevated while policymakers' decisions are scrutinised.

Confronted with these challenges, the temptation for investors might be to regress to defensive strategies that worked in the past. However, regime changes often alter the underlying conditions that enabled past successes and we have therefore sought to understand and quantify the effects of a shift to higher average inflation, in order to deduce the actions that asset allocators should take. The results of this work are presented within two papers on the strategic asset allocation implications of higher inflation:

1. **'The return of inflation':** a discussion of the potential drivers of higher inflation over the next decade.
2. **'Inflation shocks and return projections':** an analysis and projection of asset-class returns, risk and volatility under certain inflation-growth scenarios, derived by calibrating our capital market assumption (CMA) machinery with specific inflation, growth and interest rate inputs.

We hope you enjoy reading this document. If you have any questions about the information within, please do not hesitate to contact your Fidelity International representative.

Salman Ahmed

Global Head of Macro and Strategic Asset Allocation

"Only when the tide goes out do you discover who's been swimming naked."

Warren Buffett

The return of inflation

The current market consensus view is that the Covid pandemic and Russia's invasion of Ukraine have conspired to spark the multi-decade-high inflation that is currently being witnessed in many economies around the world. Initially, the temporary disruption of individual supply chains was driving inflation (for example, in the semiconductor industry), but the persistence of rapid price growth in these relatively isolated areas has since caused price rises to broaden and become more sticky throughout economies, increasing the risk of a wage-price spiral similar to that seen in the 1970s. As such, the West's major central banks have now begun to implement countercyclical policy, abandoning their prior 'forward guidance' and raising interest rates to cool overheated labour markets and prevent high inflation expectations becoming entrenched. If this results in an economic hard landing, we could even see a cyclical deflationary dynamic develop over the coming year.

But what if the current high level of price growth is not just the result of cyclical pressures that can be cured by a bout of countercyclical policy? If it is at least partly the result of structural developments, countercyclical policy might be less effective in tempering inflationary pressure over the longer term. We believe that this is a distinct possibility, having identified three key pillars that could potentially keep inflation elevated over the next decade, at least in relation to its average post-GFC, pre-pandemic level. We note that even long-lasting economic regimes can conclude when the underlying conditions that created them permanently change. The current extremes we are seeing in debt levels, changing globalisation trends, inequality between labour and capital returns, and environmental pressures give us good reason to expect such change in the coming years. However, such a shift is not currently priced into asset markets and, more importantly, not accounted for by investors when thinking about their strategic asset allocations.

We have witnessed heightened volatility in rates markets as Fed has embarked on a very aggressive hiking path, with the latest bout following Chair Powell's Jackson Hole speech. These market moves demonstrate concerns about the impact of more constrictive policy on growth, as it is clear that central banks are facing a trade-off between these two goals. Of course, both price stability and growth are desirable policy outcomes, but what is the likely choice when central banks cannot have both? We have strong

reason to expect that former will have to yield, given the potential difficulties of dealing with any deflationary shock that could arise from a sharp downward swing in growth; maintaining the sustainability of high debt levels (to prevent a severe economic crash-landing that jeopardises financial stability) will require low real interest rates.

However, we also note that high inflation can help reduce the real value of debt burdens after times of crisis. Such considerations have always been part of central banking; years ago, Mervyn King, the former Governor of the Bank of England who missed the inflation target for years, famously dismissed the 'inflation nutters' who he declared were so obsessed with hitting the inflation target that they would accept the collateral damage of a destabilised economy to do so. As such, the first of our three inflation pillars is the incentive for policymakers to use price growth to inflate away a portion of the huge real debt burdens that were accumulated before and through the pandemic.

The second pillar is deglobalisation and the re-shoring of economic activity. We expect this to be driven by growing dissatisfaction with the consequences of globalisation, such as inequality, among advanced economies' electorates, as well as the urgent geopolitical requirement to reduce dependence on what are perceived to be hostile foreign nations. This will likely drive a trend of localisation, characterised by the repatriation of economic activity and a commensurate decrease in trade intensity, particularly if the attitudes of financially-pressured domestic populations further sour towards perceived overseas threats. The growing geopolitical split between US and China is one of the key long-term trends underpinning this view; this has been brought to the fore in the aftermath of Russia's invasion of Ukraine, which is inflationary at its core.

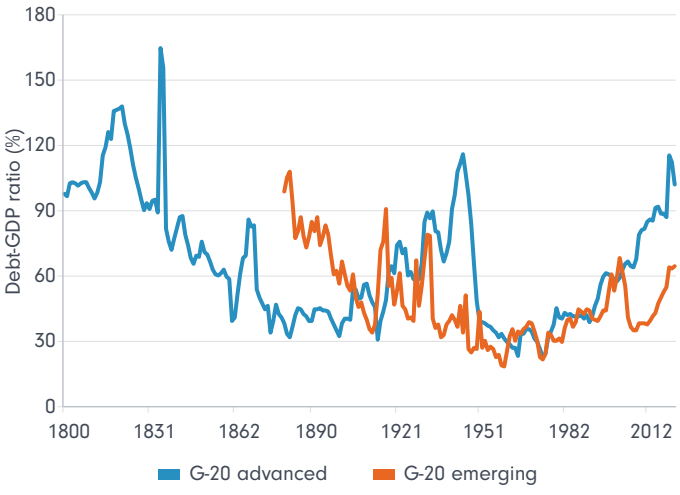
We expect the last, but certainty not least, pillar of higher inflationary pressure to be the ongoing transition to net-zero carbon emissions. The necessary rate of decarbonisation will only occur if inflationary policies such as large, permanent rises in carbon prices are implemented. While some might suggest that growth headwinds might detract from this pillar's efficacy in the coming years, we believe decarbonisation activity is ultimately a necessity, as the socioeconomic costs of a disorganised climate transition would potentially be much higher. We expect increasing social and political pressure to accelerate the climate change agenda as the frequency and intensity of extreme weather events increases further.

Finally, we must also consider the inflation expectations channel as a potential driver of persistent price growth. If the aforementioned three pillars combine to push the inflation expectations of economic agents consistently higher (both in wage and consumer price terms), inflation could become more self-fulfilling. Such a scenario would mark another important shift in long-term inflation trends.

1. Debt and inflation: the pandemic's fiscal legacy

Governments' fiscal deficits exploded through the pandemic, with central banks simultaneously running unprecedented asset purchase programmes to keep financial conditions accommodative. The result was that government debt-to-GDP levels surged to near-World War II highs in the advanced economies (Figure 1).

Figure 1: Historical median government debt (% of GDP)



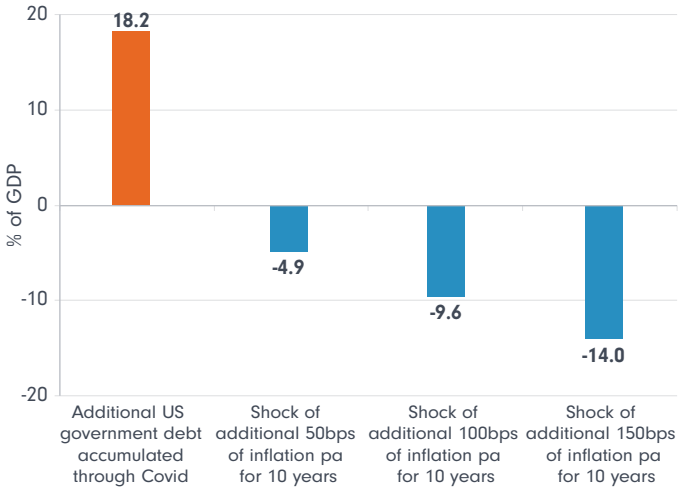
Source: IMF World Economic Outlook Database, Fidelity Global Macro Research calculations, October 2022.

Although many governments have begun to rein in their unprecedented emergency spending, there is still little appetite to balance the books and large fiscal deficits remain commonplace. There is even less appetite among politicians to pay back pandemic-related borrowing via tax hikes and budget surpluses, with disgruntled electorates now facing a cost-of-living crisis. Rather, the burden this is putting on living standards is instead pressuring governments to further abandon fiscal conservatism and re-expand their deficits. This course of action is perhaps clearest in the UK, where the government has announced plans to borrow to spur growth via tax cuts, and on the Continent, where the increasing popularity of populist political agendas is reinvigorating concerns about another debt crisis, given the eurozone's fiscal rules.

Coupled with accommodative ongoing monetary policy, continued fiscal expansion would be inflationary as it would result in newly created money being injected directly into the real economy. Ultimately, it is possible that higher government spending may have to be accompanied by higher taxes, as has often been the case after major socioeconomic crises in the past, when it has not been uncommon for top-rate marginal tax bands to move above 90%. However, it is hard to see how fiscal policy will fail to contribute to higher inflation in the coming years, given recent policy developments such as fiscal handouts to offset rising energy costs.

Given the lack of appetite to repay government debts and with mass defaults a scenario that policymakers would want to avoid at almost any cost due to their destabilising economic and societal effects, central banks are likely to adopt a stance of doing whatever they can to at least maintain the sustainability of existing debt burdens. Indeed, we argued in our inaugural Global Macro Insights document in January 2021, Mapping the New Abnormal, that debt sustainability had become an implicit policy goal, with central banks likely to seek to use inflation as a tool to inflate-away otherwise unmanageable accumulated debt burdens. This included an expectation that they would allow real interest rates to decline as much as possible, so long as it did not compromise structural price stability. We note that our experiences of the taper tantrum of 2013 and the Fed's short-lived balance sheet run-off policy of 2018 tell us that investors simply do not believe that economies can function under the weight of high positive real interest rates for an extended period, something which is even truer today given the huge additional debts that were accumulated throughout the pandemic.

Figure 2: US net-debt accumulation through Covid and the potential debasing effect of future inflation



Source: IMF World Economic Outlook Database, Fidelity Global Macro Research calculations, October 2022.

The Fed had already effectively formalised its approach to debt sustainability management in August 2020, when it unveiled its Flexible-Average Inflation Targeting (FAIT) framework (this was subsequently followed by the other major Western central banks, at least implicitly). Rather than simply seeking to ensure that annualised US inflation returns directly to the Fed's mandate target level of 2%, FAIT permits inflation to rise above it on a cyclical basis to compensate for past undershoots, allowing real interest rates to remain negative until there is strong evidence that persistent inflation is threatening structural price stability (when countercyclical policy would be necessitated).
To demonstrate the incentive for this approach, Figure 2 shows the benefits that extended inflationary shocks could have on US debt-to-GDP ratios relative to the magnitude of debt burden accumulated through the pandemic. The key takeaway is that more than half of the US government's Covid-induced debt accumulation could be wiped out in real terms if policymakers allowed inflation to run 100bps above the pre-Covid average over the next ten years (which would translate into a US PCE inflation rate of roughly 2.6%). Of course, the higher inflation becomes, the quicker existing government debt burdens can be inflated away. Such scenarios would also likely benefit activity in the private sector, especially in areas where high debt levels have already become a barrier to further capital formation.

Policymakers across the advanced and emerging worlds have already comprehended the benefits of higher inflation for fiscal sustainability (Figure 3). However, for the vast majority of countries, higher inflation will likely lead to higher borrowing costs, negating any positive fiscal impact. Only the few reserve-currency issuers lucky enough to benefit from an exorbitant privilege (the US, Japan, and a handful of highly-rated European issuers) are able to short-circuit the usual rules of the game. If these countries wish, they can choose to accept higher inflation at the same time as low nominal interest rates, simply by rolling out the printing presses and buying bonds in the open market. For reserve-currency issuers, the only practical constraints on inflationary debt debasement are political considerations such as discontent with the adverse socioeconomic effects of inflation (for example in terms of rising wealth inequality), declining living standards, weakening foreign exchange rates, etc. While such issues are currently rearing their heads in some of these countries, it is unlikely that this will prevent policymakers from accepting above-target inflation more regularly on a structural basis over the coming years.

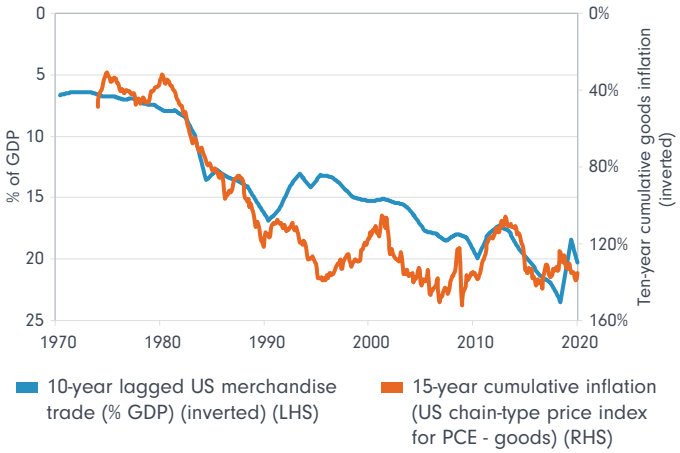
Figure 3: Contribution of inflation to public debt ratios (% of GDP) - October 2020 versus April 2022

Inflation is defined as the percentage change in GDP deflator.
Source: IMF World Economic Outlook Database and IMF staff calculations, October 2022.

2. Deglobalisation and the re-shoring of supply chains: consequences of increased geopolitical competition

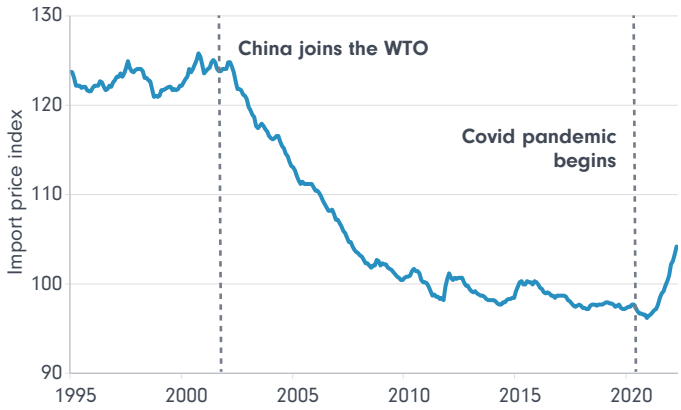
Globalisation was one of the pre-eminent economic trends of the past four decades, as evidenced by the huge rise we have seen in foreign direct investment, the internationalisation of supply chains, and the ensuing growth in trade volumes (Figure 4). Coinciding roughly with the fall of the Berlin Wall and effective conclusion of the Cold War, the start of the Second Wave of Globalisation was largely possible because of the integration of former fully communist countries into the global economy, the cheap labour that this provided, and the low-hanging fruit it bestowed in terms of efficiency gains through factor mobilisation and technological catch-up. Of course, the most important of these countries has been China; the years since 2001 when it was first admitted into the World Trade Organisation have seen the world enter a period of hyper-globalisation. This has been an incredibly disinflationary force for the advanced economies, only reversing when the Covid pandemic began to disrupt global supply chains in 2020 (Figure 5).

Figure 4: US merchandise trade and inflation



Source: Fidelity International, Bloomberg, data to January 2020.

Figure 5: Germany import prices (capital goods)



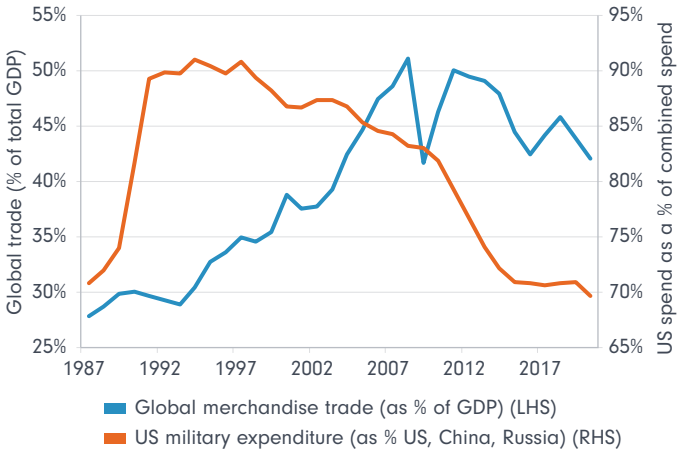
Source: Fidelity International, Refinitiv DataStream, data to April 2022.

Recent developments have forced us to question whether the broader basis for globalisation has been undermined, with the tailwinds that allowed it to flourish having run their course. We believe its key facilitating condition was the US unipolarity, which began with the fall of the Soviet Union in the early 1990s. This is because the US's hegemonic status allowed it to enforce a rules-based international order under which core industries were happily offshored to jurisdictions with the highest competitive advantage to satisfy demand for cheap goods and higher living standards. However, the US hegemony arguably began to recede around 2011, when the country's military expenditures fell sharply as a proportion of total global spending (Figure 6) and China started to rival its economic strength. Although we recognise that the US continues to outspend its geopolitical rivals in terms of total military outlays, we are no longer living in a unipolar world.

Instead, we are today living in a more competitive, multipolar world in which the geostrategic rationale for globalisation falls away. This has been evidenced in the US's increasingly strategic competitive stance against China and its re-focus on national security (at least in a 21st century form). This shift has affected the well-publicised implementation of protectionist trade policies, both direct and indirect, and the ongoing shift from just-in-time to just-in-case supply chain structures (especially since the pandemic wreaked havoc on efficiency-oriented systems). Of course, China has also sought to ensure its international influence through many channels, including its well-known Belt and Road Initiative. Meanwhile, its 'Dual Circulation' economic strategy seeks to support its own growth in the face of an increasingly hostile US export market. Russia's invasion of Ukraine and the subsequent actions taken by many nations and companies against it can also be considered symptoms of this shift. However, even before Russia's invasion of Ukraine, emerging deglobalisation trends had already driven a softening in global trade relative to GDP (Figure 7).

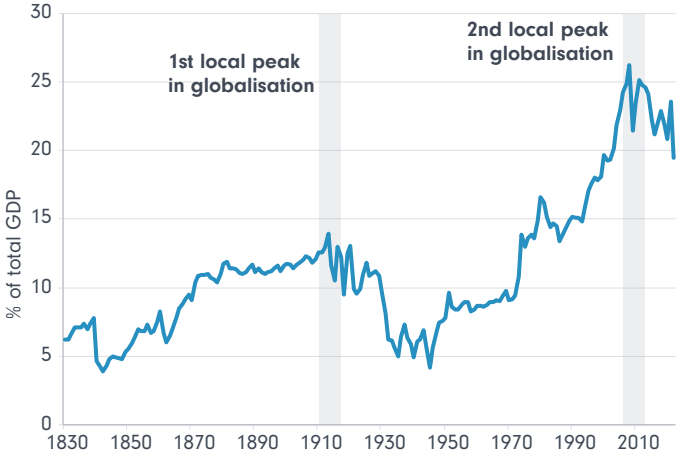
But what will happen in the future? In the West, the electorates of the rich advanced economies that determine whether globalisation occurs have clearly begun to view it less favourably (Figure 8). This disdain has been reflected in several examples of political backlash, including Brexit, the election of President Trump, the share of votes that populist parties (both left and right) won in this year's French parliamentary election (49%), and the recent fall of Mario Draghi's national unity government in Italy. Perhaps these events are unsurprising given the dynamics we've seen in income and wealth inequality in recent decades, which have been well documented in modern literature by economists such as Professor Thomas Piketty. Pertinently, there has also been a tight linkage between inequality

Figure 6: Global trade and military expenditure



Source: Fidelity International, Refinitiv, World Bank, SIPRI, data to December 2020.

Figure 7: Have we reached peak globalisation?

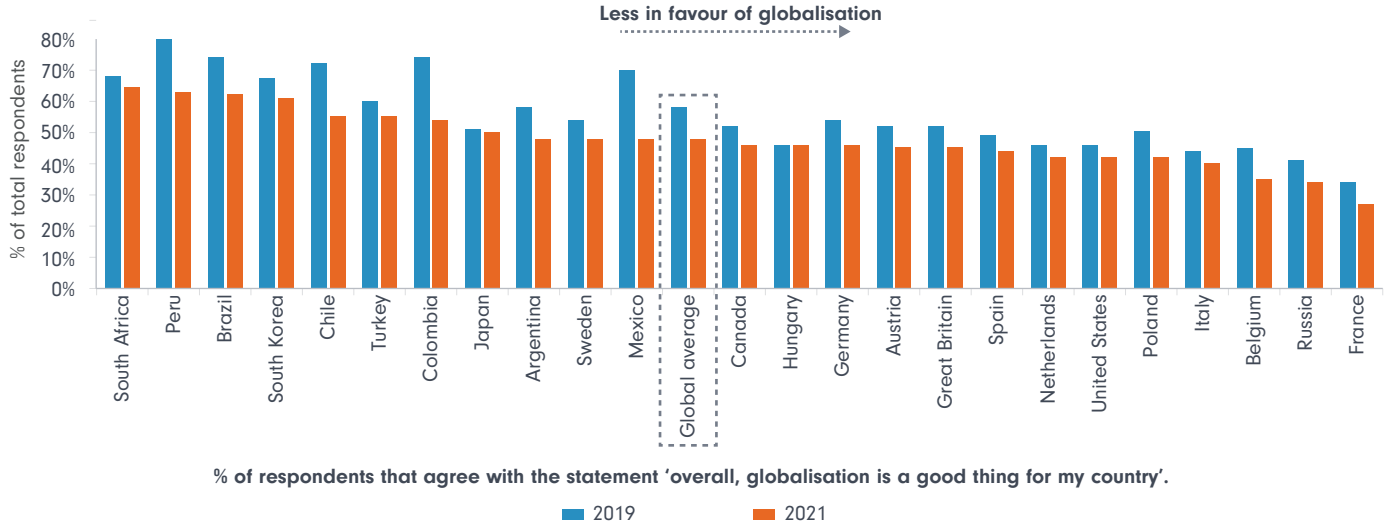


Source: Fidelity International, Fouquin and Hugot (CEPII 2016), data to March 2022.

and globalisation (Figure 9), which is logical given the inextricability of globalisation and financialisation, the free movement of capital and jobs to cheaper foreign countries amid rising global education levels, and the accumulation of vast wealth by a shrinking international minority. The inability of societies to distribute gains of globalisation among the losers of these trends has certainly played a big role.

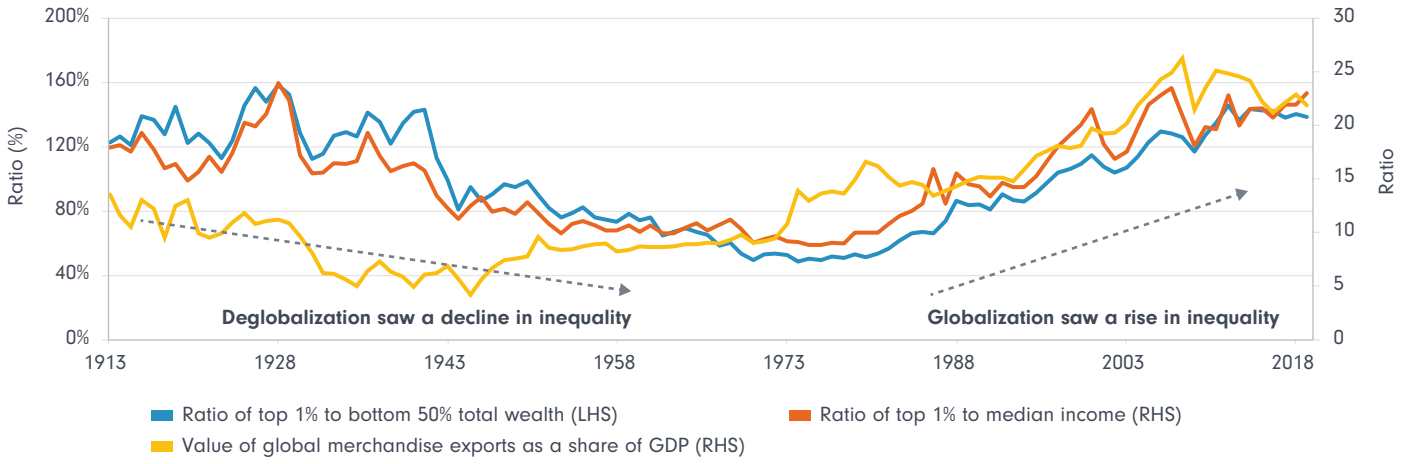
In this context, it is important to note that populist political reactions have historically put a ceiling on each wave of globalisation. Famous examples include the British Labour Party taking government for the first time in 1924 after World War I brought the First Wave of Globalisation to an end, as well as the beggar-thy-neighbour protectionist policies that sprang up around the world during the Great Depression of the 1930s. We are seeing many parallels today. As was the case almost a century ago, we are now witnessing a similar combination of geostrategic incompatibility and economic dissatisfaction causing domestic political backlash, with rising international competition likely to deepen the former and the cost-of-living crisis likely to intensify the latter. In the UK, this is already being reflected in heightened tensions between employees and employers in monopsony-type markets resulting in more frequent labour strikes. As was the case in the Interwar Period, these feelings could trigger further retreat from globalisation, with this formerly-longstanding source of disinflation reversing to become a persistent driver of higher inflation over the coming years.

Figure 8: Positive sentiment around globalisation has declined



Source: Ipsos World Opinion on Globalization and International Trade in 2021.

Figure 9: The link between globalisation and financial inequality



Source: Distributional National Accounts, 2019.

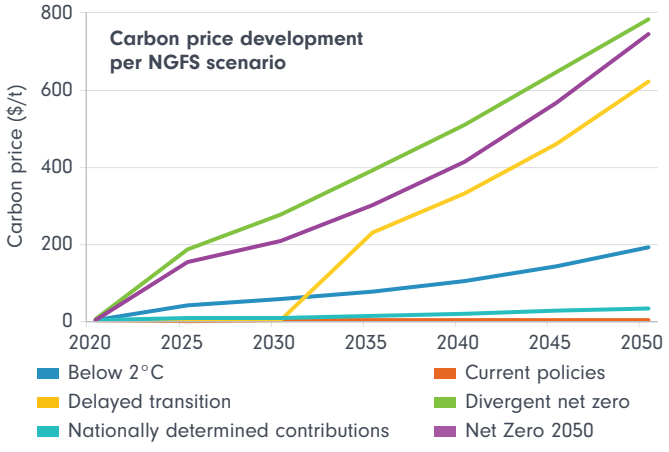
3. The decarbonisation transition: the largest investment theme of this era

Tackling the climate change crisis requires nothing short of a major transformation of the world's economic model, with a particular focus on energy systems. This means that climate change and the policies aimed at slowing it will have a significant influence on the path of economic growth this century. Although policymakers are not necessarily rational economic actors, they cannot simply cancel decarbonisation plans to support growth indefinitely, at least in aggregate; as we discussed in our 2021 white paper, "Planetary Risks: mapping climate pathways to macro and strategic allocation", the high upfront costs associated with moving towards net-zero greenhouse gas emissions would simply be replaced with even higher costs associated with long-term environment damage and societal disintegration under a disorderly climate transition. Fortunately, the solutions to the climate crisis already exist and our fundamental analysts' recent corporate engagement activity indicates that progress towards net zero is still being made in spite of the socioeconomic problems the world has encountered this year, albeit slowly.

Given this context, we expect decarbonisation activity to provide a third pillar of persistently higher inflation over the coming decade. Indeed, market forces are already driving 'greenflation' via higher prices for key commodities linked to the green revolution, such as lithium (a key component of the batteries used in electric vehicles). However, an effective response to the climate change crisis will also have to include high prices on carbon emissions, among other things, and this could create strong inflationary pressures. For context, the Network for Greening the Financial System (NGFS) estimates that the carbon-price trajectory would need to be very steep to achieve net zero by the 2050, with the current global average carbon price of around $3 per tonne rising to $150-$200 by the middle of this decade and all the way up to $700-$800 by 2050 (across various forms of explicit and implicit carbon pricing, such as taxes and regulations) (Figure 10).

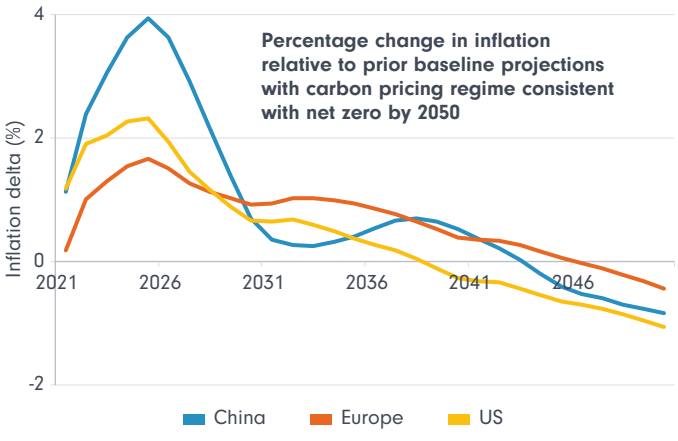
Figure 11 quantifies the inflationary impact of a holistic carbon pricing regime consistent with a 2050 net-zero transition. It is important to note that these projections are dependent on a certain speed and timing of carbon-pricing policy implementation, and that this is subject to a high level of uncertainty. If world leaders attempt to tackle climate change early and in a co-ordinated manner, the boost to inflation from carbon pricing will be high and arrive soon; on the other hand, if they put it off, the impact on inflation may be delayed and slightly smaller, but it would still be significant and we would see the aforementioned indirect costs increase. Fortunately, renewable energy also provides an answer to the advanced economies' current energy security problems and we are therefore optimistic that investment will increase strongly in this area in the coming years. However, we are also cognisant that the Just Transition could mean that certain affected sectors and poorer countries remain large global emitters for some time to come.

Figure 10: Carbon pricing is a key determinant of transition risks



Source: Fidelity International, NGFS Scenario Explorer (June 2021), November 2021.

Figure 11: Carbon pricing has the potential to cause significant inflation over the medium term



Source: Fidelity International, NGFS Climate Solutions for central banks and supervisors, June 2021.

Conclusion: Inflationary pressures are likely to persist

When we consider the political desires to avoid repaying fiscal debt burdens but to also keep them sustainable, the temptation to use higher price growth to inflate them away, the explicit and growing desire of advanced countries to retreat from globalisation, and the necessity of decarbonisation (and its associated costs), it is easy to see why inflationary pressures could remain higher over the next decade than they have been on average over the last. In fact, we believe that some of these forces have already taken hold, with FAIT having allowed US inflation to accelerate, Russia's invasion of Ukraine a symptom of the geostrategic competition that will act against globalisation, and European natural gas prices having rocketed even prior to the war (given that it is a cleaner substitute for other fossil fuels). The influence of these factors has simply been masked by investors' focus on the pandemic's cyclical legacy.

Of course, some disinflationary forces such as technological efficiency improvements will continue. However, with additional trends like rising old-age dependency also potentially contributing to upward price pressures in the coming years, we see a distinct possibility that the Western World could be entering an extended period of higher average inflation, of perhaps 3% to 4% over the next ten years. Although this might be shocking in the context of the disinflationary years since the GFC and the 2% level that is widely accepted to represent price stability, looking back through history, it would not be particularly surprising. Median US inflation has been around 3% over the last hundred years, even though the country's currency system was based on the gold standard rather than fiat for the first 50 of these (and those years also included the legendary deflation of the Great Depression). Furthermore, if we undertook our empirical hundred-year inflation analysis at the start of the GFC, the median level of historical inflation would have been even higher than 3% as the disinflationary post-GFC years would have been replaced with the highly inflationary World War I era. The recent disinflationary era is actually the anomaly, even compared to the 'Great Moderation' years that preceded the GFC when inflation targeting frameworks were already well established.

Special thanks:

Special thanks to Tony Lee, Kapil Sethi, Naveen Yadav, Max Stainton and other colleagues across Fidelity International for their contributions to this paper, including the research and analysis behind it.

Disclaimer

This material is for Institutional Investors and Investment Professionals only and should not be distributed to the general public or be relied upon by private investors.

This material is provided for information purposes only and is intended only for the person or entity to which it is sent. It must not be reproduced or circulated to any other party without prior permission of Fidelity.

This material does not constitute a distribution, an offer or solicitation to engage the investment management services of Fidelity, or an offer to buy or sell or the solicitation of any offer to buy or sell any securities in any jurisdiction or country where such distribution or offer is not authorised or would be contrary to local laws or regulations. Fidelity makes no representations that the contents are appropriate for use in all locations or that the transactions or services discussed are available or appropriate for sale or use in all jurisdictions or countries or by all investors or counterparties.

This communication is not directed at and must not be acted on by persons inside the United States. All persons and entities accessing the information do so on their own initiative and are responsible for compliance with applicable local laws and regulations and should consult their professional advisers. This material may contain materials from third parties which are supplied by companies that are not affiliated with any Fidelity entity (Third-Party Content). Fidelity has not been involved in the preparation, adoption or editing of such third-party materials and does not explicitly or implicitly endorse or approve such content. Fidelity International is not responsible for any errors or omissions relating to specific information provided by third parties.

Fidelity International refers to the group of companies which form the global investment management organization that provides products and services in designated jurisdictions outside of North America. Fidelity, Fidelity International, the Fidelity International logo and F symbol are trademarks of FIL Limited. Fidelity only offers information on products and services and does not provide investment advice based on individual circumstances, other than when specifically stipulated by an appropriately authorised firm, in a formal communication with the client.

Europe: Issued by FIL Pensions Management (authorised and regulated by the Financial Conduct Authority in UK), FIL (Luxembourg) S.A. (authorised and supervised by the CSSF, Commission de Surveillance du Secteur Financier), FIL Gestion (authorised and supervised by the AMF (Autorité des Marchés Financiers) N°GP03-004, 21 Avenue Kléber, 75016 Paris) and FIL Investment Switzerland AG.

In Hong Kong, this material is issued by FIL Investment Management (Hong Kong) Limited and it has not been reviewed by the Securities and Future Commission.

FIL Investment Management (Singapore) Limited (Co. Reg. No: 199006300E) is the legal representative of Fidelity International in Singapore. This document / advertisement has not been reviewed by the Monetary Authority of Singapore.

In Taiwan, independently operated by Fidelity Securities Investment Trust Co. (Taiwan) Limited 11F, No.68, Zhongxiao East Road, Section 5, Taipei 110, Taiwan, R.O.C. Customer Service Number: 0800-00-9911

In Korea, this material is issued by FIL Asset Management (Korea) Limited. This material has not been reviewed by the Financial Supervisory Service and is intended for the general information of institutional and professional investors only to which it is sent.

Fidelity is authorised to manage or distribute private investment fund products on a private placement basis, or to provide investment advisory service to relevant securities and futures business institutions in the mainland China solely through its Wholly Foreign Owned Enterprise in China - FIL Investment Management (Shanghai) Company Limited.

Issued in Japan, this material is prepared by FIL Investments (Japan) Limited (hereafter called "FIJ") based on reliable data, but FIJ is not held liable for its accuracy or completeness. Information in this material is good for the date and time of preparation and is subject to change without prior notice depending on the market environments and other conditions. All rights concerning this material except quotations are held by FIJ and should by no means be used or copied partially or wholly for any purpose without permission. This material aims at providing information for your reference only but does not aim to recommend or solicit funds / securities.

For information purposes only. Neither FIL Limited nor any member within the Fidelity Group is licensed to carry out fund management activities in Brunei, Indonesia, Malaysia, Thailand and Philippines.

GIM22UK0928