



Inflation – Are We There Yet?

We expect tepid inflation outcomes in the near term, given low demand and high unemployment. Further out, the journey to a higher inflation regime is likely shortened by developments we see today. But we are not there yet.

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The Great Inflation Debate



Q&A WITH

Alex Stiles

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MODERATED BY

Gurpreet Gill

Macro Strategist

Will the COVID-19 pandemic drive us into a higher inflation regime? This is a key unresolved question facing investors. In this Q&A, Gurpreet Gill discusses potential reflationary developments including substantial policy easing and disinflationary factors such as the adoption of automation and e-commerce with Alex Stiles and Jonathan Buss.

Q: Concerns around inflation create a sense of déjà vu to the post global financial crisis (GFC) era when unprecedented central bank balance sheet expansions were expected to generate inflation. How does the situation today differ?

Alex: We expect **tepid inflation** outcomes in the **near term** as the impact of high unemployment, low demand and elevated uncertainty—and in turn precautionary saving—dominates. But of course, **economic theory** tells us that if the rise in **money supply** outpaces an economy's ability to produce goods and services, the result is inflation². This 'quantity theory of money'³ failed to generate persistent inflation during the post-GFC recovery; however, it could be argued that the magnitude of **quantitative easing (QE)** delivered today far exceeds prior rounds of QE (Chart 1). Leaning against this explanation for inflation is a decline in the **"velocity" of money**, or how quickly money is moving around the economy (Chart 2). If money is not moving around but instead parked in the banking system—due to people saving more or regulations that require banks to hold more reserves, for example—even a rapid increase in money supply won't produce inflation.

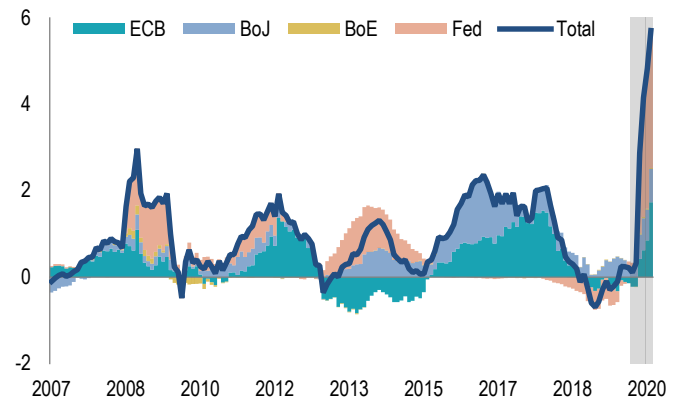
¹ The Duration strategy implements directional rate views. Alex is also a member of the Country team (which implements relative value rate views) and the Cross Macro team (which implements relative value views across rates and currencies).

² "The Counter-Revolution in Monetary Theory." Institute of Economic Affairs (Friedman, M 1970).

³ Under the 'quantity theory of money', the supply of money (M) multiplied by the velocity of money circulation (V) equals the price of goods and services (P) multiplied by the quantity of goods and services sold (Y). A change in M is assumed to result in a proportionate change in P, assuming V is broadly constant, given that it relates to personal behaviors, and Y is constant in the short-term, as the economy moves towards full employment.

Chart 1: The rise in QE may not generate inflation...

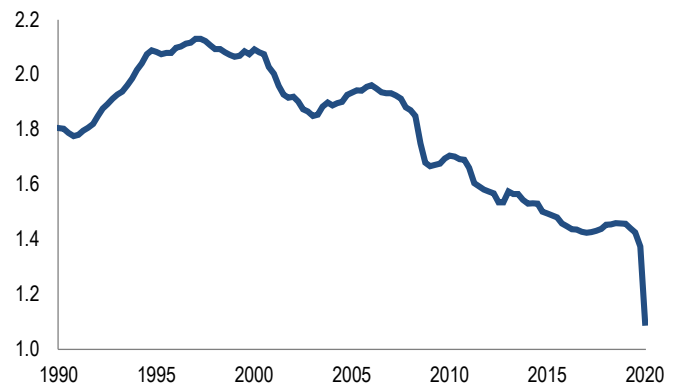
G4 Central Bank Balance Sheets Change From a Year Ago (USD Trillion)



Source: Macrobond, GSAM. As of June 2020.

Chart 2: ...given lower velocity of money.

Velocity of M2 Money Stock Ratio (Nominal GDP/M2)



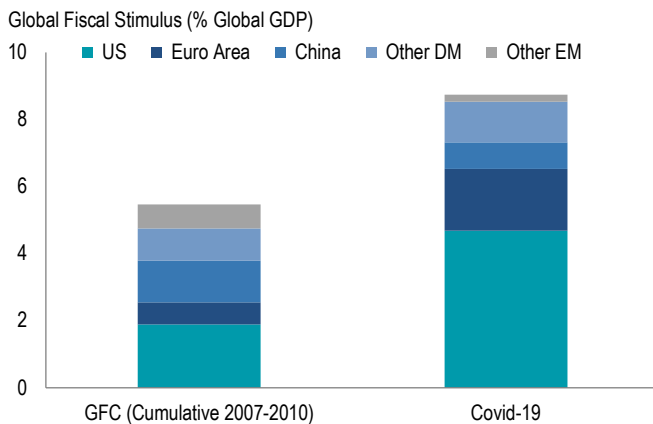
Source: Macrobond, [St. Louis Fed](#). As of Q2 2020. The velocity of money is the frequency at which one unit of currency is used to purchase domestic goods and services within a given time period.



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Jonathan: The **scale of fiscal easing** is another differentiator today relative to prior economic shocks. Fiscal stimulus announced so far in 2020 already exceeds the total fiscal response from 2007 to 2010 (Chart 3). But there are reasons to question the inflationary impulse from today's fiscal policies. First, the nature of this **shock is unique** and we may observe stop-start virus suppression measures for several months to come. Second, fiscal policies announced seek to **press pause on traditional recessionary reactions** such as business failures and job losses (that could otherwise create persistent scarring effects that limit productivity) rather than stimulate demand. Finally, a **lower fiscal multiplier**—the ratio of change in national income arising from a change in government spending—could unfold due to social distancing measures.

Chart 3: Fiscal measures exceed the GFC but mostly try to stem the decline in demand



Source: GSAM, IMF. As of August 6, 2020.

It seems more plausible that **fiscal policy will be a medium- to long-term inflationary factor** given the pandemic is reinforcing a trend in **less austere fiscal policies** observed pre-virus. Many stimulus measures are being extended and may remain in use into the next economic cycle. For example, in the UK, beyond the immediate post-virus recovery, we expect the Chancellor to strengthen the government's "levelling up" agenda rather than pivoting to the post-GFC

fiscal consolidation pursued by his predecessors. Less fiscal austerity to address social challenges and disparities can ultimately foster economic stability, but presents implications for debt dynamics and inflation, with higher inflation outcomes eventually being favored to erode the real value of elevated debt levels.

Q: Why was inflation muted during the prior expansion despite signs of cyclical strength such as low unemployment rates, and does the explanation still apply today?

Alex: Several **structural factors** have kept inflation in check in recent years, as discussed [previously](#), including an aging workforce and rising female labor force participation alongside lower trade union membership and preference for job security over wage demands. Looking ahead, the rising trend of older worker labor force participation may pause or reverse due to perceived health risks, thereby reducing the disinflationary impact on overall wage growth. In addition, labor union membership remains low, but the pandemic has shone a spotlight on corporate social actions including treatment of workers which may fuel firmer wage growth going forward, particularly in essential jobs.

The relationship between the **internet and inflation** also played a role. In 2017, the presence of online retailers—the so-called “Amazon effect”—subtracted an estimated 0.25% from US core goods inflation and 0.1% from core personal consumption expenditures (PCE) inflation, the Fed's preferred measure¹. These detractions were not insignificant but not sizeable either. The pandemic has led more generations to adopt online habits, including **e-commerce** (Chart 4), online entertainment and e-learning; these activities tend to exhibit lower costs online than in-person. As virus suppression measures are eased, the equilibria will shift once again. Nonetheless, we expect the convenience of online shopping will see many first-time users become regulars. As a result, previously estimated disinflationary impacts could both increase and persist for as long as these trends in consumer behaviors continue.

¹ Source: Goldman Sachs Global Investment Research, The Amazon Effect in Perspective (September 30, 2017). The economic and market forecasts presented herein are for informational purposes as of the date of this presentation. There can be no assurance that the forecasts will be achieved. Please see additional disclosures at the end of this presentation.



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Jonathan: The advent of **new technologies** since the mid-90s has created a cohort of “**superstar firms**,” defined as large and highly productive firms with significant **bargaining power** over consumers and workers as a result of product and labor market concentration¹. These companies—many of which operate in the retail sector and are therefore linked to what Alex discussed earlier—leverage technology to widen their productivity advantage and gain disproportionately large market shares. They also tend to have global access to new consumers and supply chains. All of these traits allow them to pursue a strategy of **increasing scale rather than employing pricing power** to raise profits.

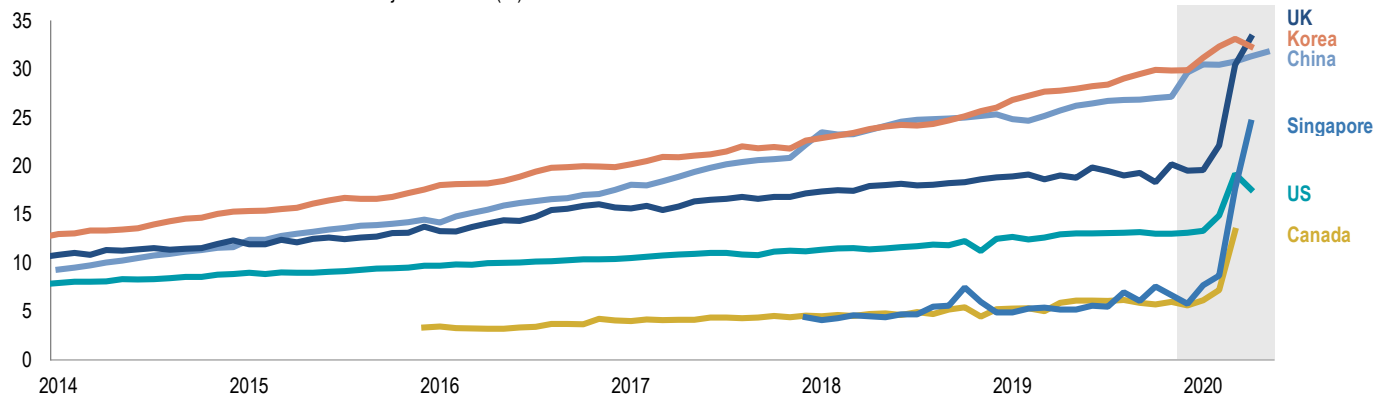
Low rates and therefore **low cost of capital relative to labor** could boost the status of superstar firms, with many using the year 2020 as an opportunity to further advance **automation strategies**. This will further tilt the distribution of income in an economy away from labor. For example, automated checkouts in supermarkets reduce the need for retail staff and delivery models for restaurants trim demand for waitpersons. These dynamics can fuel asset price inflation but not necessarily consumer price inflation.

Alex: Automation of production may also counterbalance inflationary impacts associated with **de-globalization** and **localized supply chains** by helping companies match the lower labor cost advantage associated with production abroad. Since 2010, global trade has leveled off and in recent years, US-China trade tensions have reinforced assessments of “peak” globalization. The pandemic has exposed vulnerabilities in global supply chains, providing additional credence to expectations for de-globalization. In our view, it is important to recognize that dismantling and localizing supply chains is a process rather than an event. Bolstering supply chain resilience may result in more local production (‘on-shoring’), particularly in relation to medical goods and other essential items such as food. But to balance cost-efficiency with operational resilience as production moves closer to home, companies may accelerate automation strategies, which reduce the demand for—and in turn cost—of certain labor.

It is too soon to empirically observe **supply chain adjustments** in response to COVID-19, including the adoption of automation. However, supply chain changes among Chinese exporters following the onset of the US-China trade war indicate some re-direction of trade to other **low cost producers** such as Vietnam, particularly for less complex, homogenous products². We may therefore transition to a global trade environment that resembles diversification among low cost producers rather than complete on-shoring, with any incremental on-shoring being accompanied by automation.

Chart 4: Increased e-commerce penetration could accentuate the disinflationary “Amazon effect”

Share of E-Commerce in Total Retail Sales in Major Countries (%)



Source: UBS, Haver. Note: Three months moving average for Korea. Canada data is to April 2020; Korea, US, Singapore, UK data is to May 2020 and China data is to June 2020.

¹ Source: Goldman Sachs Global Investment Research, Super Profits and Superstar Firms (July 22, 2017).

² Source: Goldman Sachs Global Investment Research, Micro evidence on trade redirection and supply chain shifts (August 5, 2020).



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Q: Expanding on two structural trends in focus due to COVID-19, how may a decline in brick-and-mortar retailing and increased remote working impact inflation?

Jonathan: Housing accounts for one-third of the US consumer price index (CPI) inflation basket, comprised of rents and rental equivalence¹. The **rent weights** in UK and European inflation baskets are lower due to the absence of a rental equivalence but are prominent nonetheless.

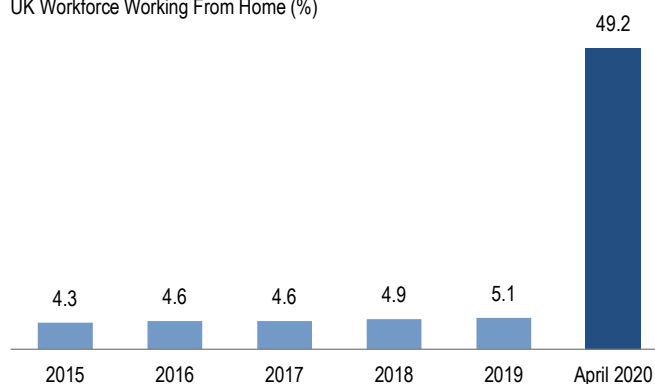
Beyond borrowing costs and cyclical developments which drive demand, there are structural reasons for contained rents, particularly in the commercial real estate sector. In recent years, companies leasing offices and shared working spaces have increased the supply of office rental space. At the same time, efficient use of space and a rise in remote working has reduced demand. Pre-pandemic, few companies would have trialed **remote working** for majority of their employees on any given day. Yet during the peak of lockdowns in April, many firms functioned with more than 90% of their employees working from home. In the UK, almost half of the workforce was able to work remotely in April (Chart 5). We think it is reasonable to expect greater adoption of remote working even as offices and workplaces reopen, thereby keeping a lid on commercial rents.

Alex: Rents in the **retail sector** have also been weak in recent years, falling 5% in the UK in 2019². The shift from high-street and mall shopping to online retail is therefore disinflationary for rents as well as retail prices.

Disinflation dynamics extend to other inflation components; in recent years, **communications** and **healthcare** prices have also played a part in explaining the low inflation puzzle. For example, in 2017, a new methodology for cell phone services translated the adoption of unlimited data packages by Verizon into a large price drop after taking into account quality adjustments. Healthcare legislation such as generic drug price launches and drug price freezes have also been disinflationary³.

Chart 5: Higher remote working may lower demand for commercial property

UK Workforce Working From Home (%)



Source: UK Office for National Statistics.

Q: Given changes to our daily lives due to the pandemic, it could be argued that current inflation baskets and weightings are outdated accounts of the representative consumer's spending habits. Would you agree and do you foresee any policy implications?

Alex: There are reasons to believe **inflation readings** during the lockdown were **not representative** of prices in the economy. First, social distancing efforts limited the ability of statistical agencies to collate some prices. Online-only price collation may have therefore downplayed price developments in offline-only corner shops, where anecdotally, hand sanitizer experienced a more than 230% rise between March and April in the UK⁴. Second, existing CPI baskets were not representative of actual spending behavior during the lockdown. The largest CPI weight in the UK is Recreational and Cultural activities (16.8%) followed by Transport (14.7%) but both activities were halted. Policymakers acknowledge this and we see **limited implications** of nuances in near-term inflation prints. Indeed, several economies tried to correct for changed consumer spending during lockdowns. For example, the US National Bureau of Economic Research adjusted inflation

¹ Rental equivalence approximates the cost of owner-occupied housing services by imputing rental payments by home-owners from rental payments for similar properties.

² As cited in a speech by BoE member Silvana Tenreyro, Monetary policy during pandemics: inflation before, during and after Covid-19 (16 April 2020).

³ Any reference to a specific company or security does not constitute a recommendation to buy, sell, hold or directly invest in the company or its securities.

⁴ Based in a price increase from £2.99 to £9.99 between March and April 2020.



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weights based on actual US consumer spending, reducing the weight of transport and raising the weight of food. These changes amounted to 1.1% annual inflation in April rather than the 0.4% reported in official data. Nonetheless, this adjusted reading is still below the Fed's 2% target.

Jonathan: As Alex noted, from a policy perspective, we expect central banks to look beyond near-term difficulties in price collation. Beyond the immediate virus response, however, we could see public sector statisticians hasten progress towards use of **Big Data** to correct measurement issues in economic data. Economists have turned to new data sets to gauge growth dynamics in recent months such as mobility data provided by Google and Apple, alongside restaurant reservations produced by OpenTable. The same applies for prices, with measures of online prices gaining prominence¹. Data corrections could reveal both higher or lower true inflation. The ECB strategy review (which has been delayed due to the pandemic) could alter the target inflation measure to include a broader measure of housing; this may inflate inflation readings. By contrast, raised weighting for disinflationary online activities could lean against any rise in price pressures.

Q: Are there any lessons to be learned from the historical playbook with respect to what can drive us into a higher inflation regime?

Alex: History shows that there is no single pathway to inflation; **signposts change over time** and different economic systems can influence the journey. Moreover, a transition to a higher inflation regime tends to involve a **combination of factors** rather than a single marker. These include a negative supply shock, a positive demand shock, excessively easy policy, higher inflation expectations, a weaker currency, institutional factors (such as weak policymaker credibility), and a sharp rise in food or commodity prices.

For example, inflation in the US gravitated higher in the late 1960s due to accommodative policies alongside higher oil and food prices against a backdrop of falling unemployment. Fiscal policy was persistently easy due to higher military

spending (for the Vietnam War) and social spending (given President Johnson's social spending programs). Today, the macro backdrop is one of high unemployment and while the unique nature of this recession creates a clear case for near-term policy support, the persistence of extensive fiscal stimulus in all major economies is unclear.

Q: Finally, policymaker reaction functions and decisions can be a key determinant for the direction of inflation travel. Are there reasons to believe both central banks and governments will be more tolerant of higher inflation outcomes?

Jonathan: Central banks look set to remain accommodative for the foreseeable future, with no G10 central bank policy rate expected to move higher over the next 24 months. There are also reasons to expect monetary accommodation into the post-virus recovery. In the US, for example, the Fed has indicated that it is focused on a broader set of labor market measures beyond simply the unemployment rate relative to an estimate of long-run structural unemployment rate. This includes measures of underemployment, wage growth by income quartile and assessments of racial disparities. Keeping policy easy to achieve progress on a **broader set of labor market measures** may be accompanied by **higher inflation outcomes**. In addition, the Fed's recent **framework review** concluded with it adopting a "flexible form of **average inflation targeting**," as communicated by Chairman Jerome Powell during the annual Jackson Hole Symposium in August. This policy regime would allow for periods of above target inflation when the economy is deemed to be at full employment to compensate for time spent below target, thereby averaging 2% over an entire business cycle.

Alex: Former Fed Chair Janet Yellen raised the US policy rate before inflation reached its 2% target to allow for gradual normalization thereafter. However, this reduced inflation expectations and slowed down both the inflation and rate normalization process. A Fed under Chairman Powell appears inclined to be **tolerant of firmer inflation outcomes** to achieve labor market strength for the entire economy.

¹ See <http://www.thebillionpricesproject.com/> and <https://www.pricestats.com/>. Any reference to a specific company or security does not constitute a recommendation to buy, sell, hold or directly invest in the company or its securities.



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From an investment standpoint, this suggests market-based inflation expectations should adjust higher and not price an indefinitely low inflation environment. Indeed, this is what we have recently observed with real rates declining, reflecting bounded nominal yields but rising inflation expectations from excessively low levels reached in response to the twin oil-virus shock earlier this year (Charts 6 and 7).

Chart 6: With policy rates at their lower bounds, nominal yields are bounded so a...

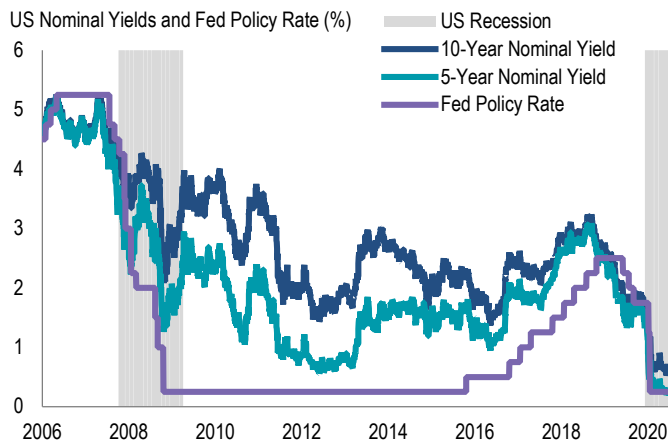
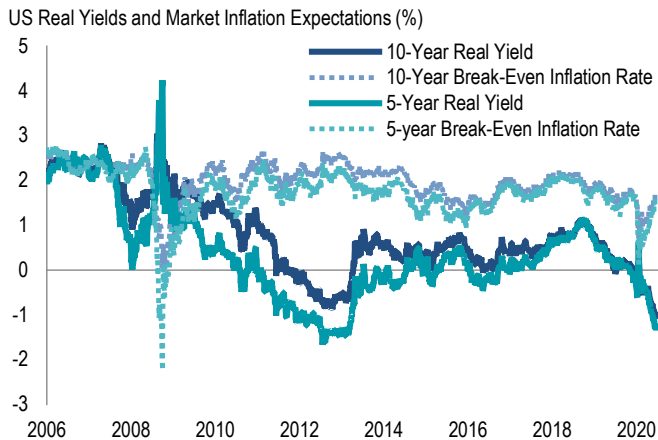
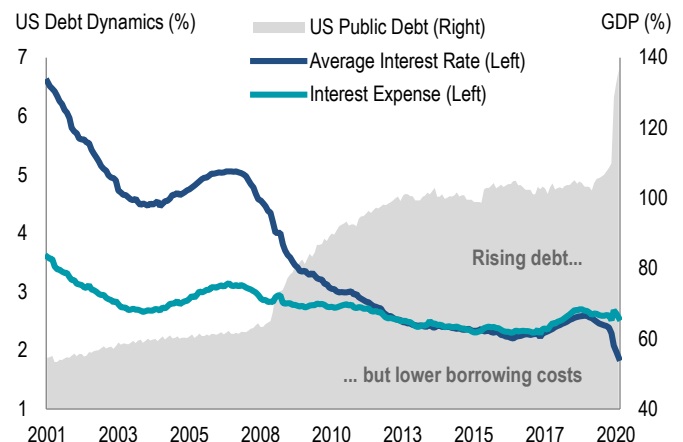


Chart 7: ...rise in inflation expectations (from historic lows) results in lower or even negative real yields



Jonathan: As mentioned earlier, a more profound concern today relative to the global financial crisis is **the incentive for governments to favor higher inflation** as a way to lower public debt, given less support for fiscal austerity. That said, the incentive for inflation to manage large government debt loads is low given historically low borrowing costs, which coupled with historically high debt levels results in a historically average interest expense (Chart 8). Moreover, **central bank independence** and **inflation mandates** may limit the use of inflation as a tool to erode the real value of government debt. However, there are questions being raised around whether QE will transition into **monetary financing**, whereby central banks print money to directly finance government expenditures. As observed in Zimbabwe today and the Weimar Republic in Germany in the 1920s, this can lead to hyperinflation. We are not there yet but the distinction between QE and fiscal policy has turned less clear cut.

Chart 8: Historically high government debt alongside historically low borrowing costs implies historically average debt servicing costs





The Great Inflation Debate

Summary

Reflationary Force	Are We There Yet?
Monetary easing	Not quite , as an increase in money supply is counterbalanced by a lower velocity of money and higher savings.
Fiscal expansions	No , as recently enacted fiscal policies largely seek to avert recessionary reactions such as job losses and business closures rather than stimulate new demand. An exception is the EU Green Deal, with investments in the energy transition expected to have a five times multiplier effect on growth ¹ . However, near-term inflation implications will be modest.
De-globalization and localized production	Potentially en route to higher costs for certain products such as medical supplies and food. However, it seems more likely that global supply chains will reflect greater diversification among low cost producers, while on-shoring will be accompanied by automation; both developments are disinflationary rather than reflationary. Moreover, investments in automation raise productivity which can also limit the rise in prices.
Inflation measurement adjustments	Possibly, but with limited policy implications. Inflation basket adjustments can result in temporary inflation changes that we think policymakers will continue to look beyond.
Greater central bank tolerance for inflation	Somewhat as policymakers appear inclined to keep policy accommodative until the recovery is on firm footing. However, we expect inflation mandates to be upheld, implying active monetary action if signs of runaway inflation emerge.
Government desire for inflation to deal with elevated debt levels	Not yet. Borrowing costs are at historic lows and so we see little incentive for governments to favor higher inflation today.
Lower elderly labor force participation	Yes, but higher female labor force participation due to remote working and flexible working arrangements may offset any decline in elderly labor force participation.

Source: GSAM. As of August 2020. Views and opinions expressed are for informational purposes only and do not constitute a recommendation by GSAM to buy, sell, or hold any security. Views and opinions are current as of the date of this presentation and may be subject to change, they should not be construed as investment advice.

¹ Source: Analysis by the International Renewable Energy Agency (IRENA). The [European Green Deal](#) provides a roadmap with actions to boost the efficient use of resources by moving to a clean, circular economy and restore biodiversity and cut pollution.



Investing Thoughts

Inflation is a Broad Concept

There is not one kind of inflation but many and they impact different parts of the economy and financial assets in different ways and at different times. If drinkware is experiencing elevated demand—and therefore price appreciation—as consumers enjoy a ‘quarantini’ in their garden, do we need to hedge this inflation if it benefits a consumer goods company whose investment grade corporate credit bonds we own? We don’t think so. If online TV streaming prices are being offered at a discount due to economies of scale, should we worry that this price deflation is a negative macro signal? Not really. These examples demonstrate the nuances of inflation. Bonds have a fixed nominal value and therefore lose value as the *general* price level rises. In this environment, many assets have been proposed as hedges for inflation, including inflation-linked bonds, real estate and precious metals, most notably gold. The effectiveness of each of these asset classes in a portfolio as an inflation hedge will depend on the investment time horizon, other assets held in a portfolio and the economic circumstances. As outlined in “The Great Inflation Debate” (page 2-7), the near-term outlook is one of tepid inflation outcomes but the path of least resistance is for inflation to move higher over time.

The Policy Picture Matters

The value of inflation hedging assets can be influenced by the policy backdrop. Following the 1970s oil price shock, treasury inflation-protected securities (TIPS) provided protection against global stagflation (high inflation but a stagnant economy). But we cannot assume inflation episodes of the past will replay in the future with the same frequency and severity, nor that the central bank response will be the same. Prior to 1979, US monetary policy was passive with the Fed waiting for inflation to occur before attempting to reverse or check its rise. This “delayed” response contributed to a broad upward trend in the rate of inflation. Given both a rise in inflation and volatility in inflation outcomes, TIPS proved their worth.

After 1979, under Chairman Paul Volker, the Fed sought to combat inflation by proactively preventing it. This led to both lower inflation and lower volatility in inflation. In this environment of proactive monetary policy, TIPS were less valuable as an inflation hedge. Since 2012, the Fed has pursued an explicit inflation target and the coronavirus policy response demonstrates that monetary policy is more pre-emptive than ever before. In the near-term, we expect monetary accommodation, but there is reason to believe central banks may act with vigor if faced with runaway inflation in the future.

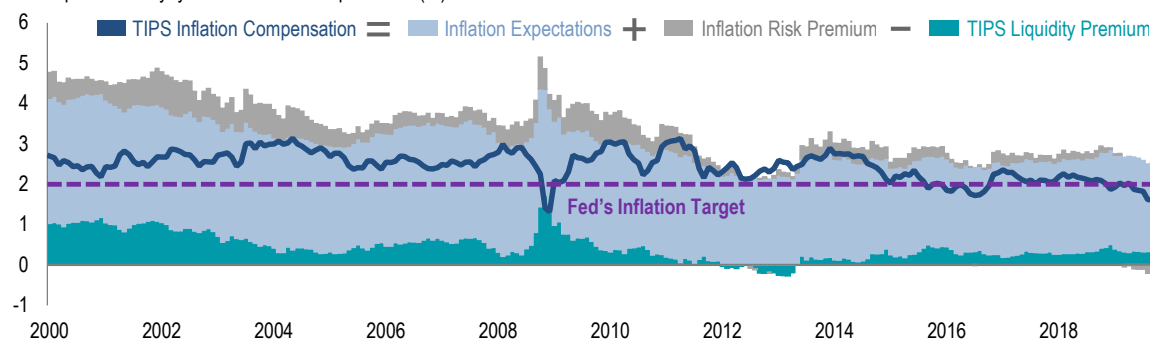
Where Are We Now?

Some exposure to inflation-hedging assets, including inflation-linked bonds such as TIPS is justified. That said, investors should recognize that in a contained inflation regime, inflation-linked bonds track nominal bonds but offer lower yields. In addition, TIPS currently provide lower carry relative to other risk assets. Moreover, a rise in TIPS compensation in recent months reflects a decline in the TIPS liquidity premium rather than expectations for a higher inflation regime (Chart 9).

Importantly, central bank liquidity taps are still turned on. In this environment, we would say [don’t blink](#): assets may not be attractively priced or on sale for long. Since March, financial markets have rapidly progressed from a liquidity crisis to a liquidity-oriented recovery, creating a supportive backdrop for risk assets, including [corporate credit](#). In addition, a rise in inflation expectations (amid signs of economic recovery) alongside unchanged nominal rates (given unchanged central bank policy rates until the recovery is on solid footing) results in lower real rates which are supportive of risk asset exposures. That said, health and economic outcomes remain intertwined and subject to considerable uncertainty and so now is not the time to enter [exhaustion mode](#). We plan to be opportunistic rather than defensive if we observe outsized market moves, given central banks are resolute in pursuing market stability.

Chart 9: Market expectations appear to suggest more risk of an inflation undershoot than overshoot

Decomposition of 5y5y TIPS Inflation Compensation (%)



Source: Federal Reserve Board, D'Amico Kim and Wei. As of July 2020.

A model of five-year forward five-year breakeven inflation compensation implies inflation expectations remain below 2%. In addition, this model attributes the rise in inflation compensation in recent months to a decline in the TIPS liquidity premium, not inflation fears.



Overheard at GSAM



“ For investors concerned about inflation risk, we think the best approach is to remain focused on investment goals, such as asset price appreciation and preservation of long-term purchasing power. In fixed income investing, we believe this can be achieved through diversification and active views in assets that offer an attractive risk-adjusted premium rather than simply matching up macro risks with traditional hedges¹.

Ashish Shah | Co-Chief investment officer of Global Fixed Income



“ Opportunities in inflation products can arise where you may least expect. Inflation in Japan has averaged 0% for the past 25 years. Yet on occasion, Japanese inflation-linked government bonds (JGBIs) can trade at levels that reflect an excessively downbeat inflation outlook, even for Japan. This can create an opening to purchase JGBIs at attractive levels and realize a return if inflation outcomes are less negative than expected.

Alex Stiles | Head of Duration within Global Fixed Income



“ We are currently in a virtuous cycle of low real yields, easy financial conditions and higher risk asset prices. The market has recently started to price higher inflation outcomes—moving beyond low levels reached in response to the twin oil-virus shock earlier this year—but we think this ascent in inflation expectations will begin to be checked by a more gradual pace of activity recovery going forward.

Simon Dangoor | Head of Macro Rates Investing



“ Economic theories can be a useful compass for the broad direction of inflation travel but they are not necessarily a GPS that can determine the inflation route with precision. This is not too surprising given prominent schools of economic thought that inform expectations for higher inflation were established when some of today's disinflationary forces such as e-commerce did not exist.

Gurpreet Gill | Macro Strategist

¹ Diversification does not protect an investor from market risk and does not ensure a profit.



Central Banker Chatterbox

April 16, 2020

The role of the CPI basket can partially explain the relative weakness of inflation over the recent past but it may not resolve the puzzle completely...a large shift to online retail coupled with an acceleration in remote working could lead to further prolonged weakness in commercial rent inflation.

Silvana Tenreyro | External Member of the BoE Monetary Policy Committee

May 12, 2020

I remain an inflation hawk, but, boy, inflation hasn't been a problem in recent years. So I think central banks have either by accident or through good policy vanquished the inflation dragon at least for now and so I'm not really seeing that as a likely concern even with the additional debt being taken on here.

James Bullard | St. Louis Fed President

May 21, 2020

On balance I think the Covid-19 shock is going to be disinflationary, not inflationary, both in the near-term and the medium-term.

Richard Clarida | Fed Vice Chairman

June, 2020

Through this economic crisis, the inflation target remains our beacon...The pandemic has created a fog of uncertainty, and this has greatly complicated our ability to generate a clear outlook for growth and inflation.

Tiff Macklem | Bank of Canada Governor

July 7, 2020

I'd rather talk about disinflationary forces in the short term, and then total uncertainty as to the medium to-longer term.

Christine Lagarde | ECB President

August 27, 2020

Our revised statement emphasizes that maximum employment is a broad-based and inclusive goal... it reflects our view that a robust job market can be sustained without causing an outbreak of inflation.

Jerome Powell | Fed Chairman

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Although Treasury Inflation-Protected Securities (TIPS) are considered free from credit risk, they are subject to other types of risks. These risks include interest rate risk, which may cause the underlying value of the bond to fluctuate, and deflation risk, which may cause the principal to decline and the securities to underperform traditional Treasury securities. TIPS have special tax consequences, generating phantom income on the "inflation compensation" component of the principal. A holder of TIPS may be required to report this income annually although no income related to "inflation compensation" is received until maturity.

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Compliance Code : 211817-OTU-1243072.