



## THE INFLATION GENIE

### UNDERSTANDING THE DRIVERS OF MUCH TOO LITTLE AND TOO MUCH INFLATION SCENARIOS

#### INTRODUCTION

COVID-19 has resuscitated a familiar conversation about the inflation genie escaping the bottle. The seismic shock to activity, the forceful policy response and fears about the potential policy end-game have led to the same speculation that surfaced in the immediate aftermath of the Global Financial Crisis and then at various points in the decade or more since then: That we are likely to experience a burst of inflation in the coming years.

Cynical investors have probably heard this inflation scare story too many times before and will therefore dismiss this risk out of hand. They will argue that inflation is dead – end of story. We believe recent experience is relevant, but urge caution in dismissing this risk out of hand, particularly given the unusual – bordering on the unprecedented – nature of the shock and the policy response.

**This being said, our base case view is that the inflation problem we will face in the years to come will look a lot like the one we have experienced in the recent past – namely, too little inflation, not too much. However, we think that the probabilities of both much too little and too much inflation have both significantly increased, thanks to the pandemic.**

To be clear, the focus of this note is on the path of inflation in the medium term. In the very short run, the path of inflation is being driven by two idiosyncratic factors:

- (i) The recent collapse (and even more recent partial recovery) in oil prices. As a result, the year-on-year change in the price of petrol and other energy intensive goods is negative and will (probably) remain so for some time
- (ii) Measurement problems, where the national statisticians are imputing prices for goods and services where no transactions are taking place, which is introducing noise into the year-on-year changes. We are interested in where inflation will be from the second half of 2021 onwards, by when these base effects should have washed out.

Frankly, bold claims about what inflation will and won't be at that time horizon should be treated with extreme caution, whoever is making them. It is better, we think, to explore the various drivers of inflation and tease out the potential risks around what we see as the prevailing view among most investors: Inflation will not, and perhaps even cannot, return.

Such is the purpose of this paper: To establish plausible narratives that might underpin various “inflation scenarios”. We will discuss each of the key drivers in turn and how the pandemic might directly or indirectly contribute to inflation outcomes that may persistently and meaningfully differ from the prevailing consensus of low inflation in both directions.



In what follows, we identify the potential drivers of the *much too weak* and *too strong* inflation scenarios as follows:

- **The output gap (between demand and supply):** The obvious downside risk here is that *demand fails to recover*. This would mean *the (negative) output gap stays larger for longer*, leading to a larger disinflationary impulse. On the upside, the risk is that there is *significant and lasting damage to the supply side* that causes *the output gap to close faster than expected*, leading to less disinflationary pressure than we might expect.
- **Costs (not reflecting the output gap):** The obvious downside risk here is the *potentially steep decline in occupancy costs* as companies transition to a teleworking model. What is less clear is whether such an adjustment manifests itself in lower prices or higher profits in the short term. At the same time, *higher minimum wages and minimum income guarantees* represent the obvious upside risk (now that oil prices have already recovered, the risks from energy prices are somewhat diminished). For individual open economies, *large movements in the exchange rate* can pose an upside or downside risk.
- **Pricing power:** The obvious downside risks here are that *constrained consumers become more discerning*, leading to a compression in mark-ups. Or, that the pandemic prompts a shift in public policy that involves a *more muscular approach to antitrust*; while on the upside, the risk is an *increase in the pricing power of domestic companies* that survive the pandemic thanks to a combination of rising defaults and reverse globalisation (re-shoring).
- **Indirect taxes:** The risks here seem inherently tilted to the upside but are more modest in scale, with the probability of *higher taxation of carbon for environmental purposes* and the possibility of *higher indirect taxes for fiscal consolidation* and (in certain countries) *higher tariffs for protectionist purposes* boosting inflation.
- **Inflation expectations:** The obvious downside risk here is “*Japanification*”, the *persistent experience of too little inflation de-anchors expectations*; while on the upside, the risk is that the *extreme central bank response shakes confidence in low and stable inflation*.

## THE OUTPUT GAP, LOWER FOR LONGER?

The macroeconomic explanation of business cycle fluctuations in inflation begins – and to be honest almost ends – with the output gap, which is the difference between the level of aggregate demand and aggregate supply in the economy. That output gap can in principle be decomposed into spare capacity within companies (whether companies are working their labour and capital above or below normal levels) and slack within the labour market (whether there are too many or too few people searching for work to keep wage demands in line with productivity).

Macroeconomists believe that a large and persistent gap between aggregate demand and aggregate supply will drive inflation dynamics, both through cyclical variation in costs – with a particular emphasis on the impact of labour market slack on the behaviour of labour costs, given productivity – and the cyclical variation of prices, given costs. Indeed, central bankers believe that they exert control on inflation primarily through this output gap channel: Changes in interest rates influence the level of aggregate demand and therefore the gap between demand and supply and hence inflation.

The output gap framework has been in lock-down, too, in recent weeks. The draconian restrictions on social mobility stifled the capacity of companies in large swathes of the economy to operate or conduct transactions. Aggregate demand and supply both collapsed.

As the economy comes out of lock-down, we will gradually discover where the output gap is as the restrictions on production and transactions are removed. In an ideal world, the supply side of the economy will recover to its pre-pandemic position and the level of activity will then be determined on the demand side of the economy. Our concern here is that the level of spending does not immediately snap back to the pre-pandemic norm. That would imply aggregate demand is consistently below aggregate supply. Such a negative output gap will then drag down costs and prices.

**The key downside risk is that the recovery in aggregate demand is even more sluggish than most economists assume in their central case forecast, which would mean the output gap stays much deeper in negative territory for much longer and therefore the unemployment rate would stay higher for much longer.**

## WHY MIGHT DEMAND FAIL TO BOUNCE BACK?

Mainly because some households and companies will be forced into insolvency, many more will suffer a significant hit to net worth and still others will be uncertain about future income. It is therefore perfectly possible that a significant fraction of the household and corporate population will save more and spend less than they otherwise would – to repair balance sheets or build a precautionary buffer of net worth. It may thus prove difficult to coax them out of that mentality through either monetary or fiscal stimulus.

The key upside risk is that the pandemic will leave a permanent scar on the supply side of the economy – a phenomenon economists refer to as hysteresis – which means that supply will not bounce back after the lock-downs. This scarring effect could arise in a number of ways.

- A prolonged period of unemployment can lead to an erosion in the skills and search intensity of those out of work, which effectively leads to a permanent increase in the size of the non-employed pool (unemployed and inactive) and corresponding reduction in the supply capacity of the economy
- The crisis will likely trigger a persistent shift in the pattern of consumption and production: Some sectors and companies will benefit and others will lose, and that shift in the pattern of aggregate demand can create a mismatch between labour demand and supply. Essentially, the workers are in the wrong place and with the wrong skills given where the new jobs are, and unemployment is structurally higher

- In addition to the inefficient, unproductive tail of the corporate universe, many fundamentally sound and productive companies may also fail during the acute phase of the crisis when financing conditions are tight; that would represent a hit to underlying productivity
- Companies – and particularly small companies – may be unwilling or unable to commit resources to higher risk, higher rewards investments in improving process, products or market share (given an insufficient supply of credit and an uncertain macroeconomic backdrop) and this may slow the pace of future productivity growth and capital accumulation.

At the limit, if these supply side scarring effects are significant, then the output gap can close and even shift into positive territory at seemingly high levels of unemployment and that would theoretically translate into inflationary pressure.

We want to flag two points here before moving on:

- (i) Much weaker supply should feed back into weaker demand but the underlying mechanism can still work
- (ii) This weak supply scenario has nasty implications for debt sustainability, because the capacity to service debt is inherently linked to supply (see later).

## COSTS NOT LINKED TO THE PRESSURE OF AGGREGATE DEMAND ON SUPPLY

The output gap plays a critical role in the macroeconomic explanation of inflation dynamics by driving cyclical movements in the cost of labour and the mark-up of prices over costs. However, macroeconomists allow for other factors to influence the path of inflation. One obvious culprit is movements in production costs that are not linked to the pressure of aggregate demand on supply in the domestic economy.

The source of the downside risk to these other aspects of costs in the current circumstances is clear: Teleworking. If large numbers of companies shift rapidly towards agile working, with a large proportion of their employees working from home, then we should expect to see a sudden drop in the demand for office space. With the supply of space fixed in the short run, such a collapse in demand should feed through into prices as contracts roll-off. It is reasonable to think that many companies could benefit from a significant reduction in occupancy costs.

The interesting question is how that reduction in costs is manifested in prices. At this point, the default economic answer can cause confusion: The costs of renting floor-space are usually allocated to the fixed rather than variable (and marginal) costs of production, so a decline in occupancy costs would be assumed to translate into profits rather than prices in the short run.

Now, higher profits could attract new entry into an industry, which might then reduce the pricing power of incumbents and depress prices, but this would have a gradual and indirect impact on prices. This is not to say that prices cannot respond immediately – in a strategic setting, many responses are possible, particularly given that the decline in occupancy costs (as a share of total costs) is unlikely to be common or coordinated across companies; however, it is not immediately obvious that prices would respond immediately.

## HIGHER LABOUR COSTS AS GOVERNMENTS MOVE TO BOLSTER INCOMES?

One obvious upside risk is that there is a positive impulse to labour costs from government policy rather than from the balance of demand and supply in the labour market. The importance of dealing with economic inequality and the challenge of supporting living standards in the face of the secular threat from automation was already rising up the political agenda before the pandemic. It is possible – if not probable – than in the aftermath of the pandemic, and in what might be circumstances of persistently high unemployment, politicians may feel compelled to (or are even elected pledging to) deliver higher incomes. With little fiscal space to finance tax credits or cuts, finance ministers may be obliged to put the burden of higher incomes on companies, and ultimately consumers, in the form of higher minimum wages.

Of course, higher minimum wages will not benefit those locked out of work, so governments may also increasingly experiment with minimum income guarantees (which can make being low paid unattractive). Either way, there may be a positive impulse to nominal wages, particularly at the bottom of the distribution that is unrelated to productivity.

## A POSITIVE IMPULSE TO HEADLINE INFLATION AS OIL PRICES MOVE HIGHER?

The other potential upside risk that has already crystallised to some extent is a recovery in oil prices. Movements in oil prices feed through pretty quickly into the price of petrol at the pump, but there is a more gradual impact on the price of a much broader set of goods and services. As a result, sudden shifts in oil prices can have a persistent impact on inflation over a one to two-year horizon. Oil prices collapsed in the acute phase of the crisis but, like many other assets, they have recovered a good deal of their lost ground.

Looking ahead, oil prices may continue to recover to pre-pandemic levels and that would impart a positive impulse to headline inflation. However, with oil prices having already recovered significantly since the trough in late April, the risks to inflation through this channel are somewhat reduced.

## SHIFTS IN EXCHANGE RATES

The final channel we flag here is a perennial driver of inflation dynamics in open economies: The exchange rate. Movements in the exchange rate will tend to be reflected in import prices relatively quickly, but the pass-through

into consumer prices can prove to be gradual, bordering on glacial, as transitory shifts in margins along the supply chain tend to delay the full impact. Very large movements in the exchange rate can therefore lead to significant and sustained movements in inflation.

Of course, very large movements in the exchange rate should not happen by accident: They ought to be triggered by some deeper shock, and the other transmission channels of that shock – in particular, via the output gap – may push inflation in the opposite direction. Nonetheless, it is still possible to detect a correlation in the data between large exchange rate moves and the behaviour of inflation (think Brexit, sterling and UK inflation).

Therefore, to the extent that the crisis or other events lead to a large realignment of exchange rates, then that could plausibly trigger a significant inflationary or deflationary impulse. We return to one obvious driver of a major shift in the currency at the end of this note.

## PRICING POWER

Another key aspect of our explanation for medium-term inflation dynamics is shifts in the pricing power of companies. Economists typically express pricing power through a marginal concept – the mark-up of prices over marginal costs. Our focus here is on structural changes in the mark-up, as distinct from cyclical swings that might be driven by the output gap. A structural increase in the mark-up would be consistent with a larger wedge opening up between costs and prices, and that could manifest itself in more rapid price inflation (or alternatively, more anaemic wage inflation).

The textbook explanation of the size of the mark-up begins with – and is inversely related to – the price elasticity of demand. The more inelastic demand is, the larger the mark-up over marginal cost that companies with pricing power will charge for output that is differentiated in some respect.

The obvious downside risks to structural mark-ups in a post-pandemic world is a shift in the behaviour of consumers or politicians. Many households may come out of the lock-down phase of the crisis with an intention to save rather than spend. They may also have been forced to learn new habits of shopping online while the high street was shut. We might thus expect to see more discerning (price sensitive) consumers in the future.

Demand would likely become more elastic and mark-ups and margins would structurally compress. If the pandemic leads to a shift in the preferences of the electorate for a more equal society then we might see (among other things) a more muscular approach to antitrust policy. That would lead to a structural compression of mark-ups at least in some high profile or highly profitable sectors.

The upside risk to inflation via the mark-up is a result of two key changes in the post-pandemic corporate landscape.

First, we expect to see a significant number of defaults in the corporate universe. Given the inevitable inertia in the creation and expansion of new entrants, that will inevitably reduce the competitive pressure (and increase the pricing power) on the surviving incumbents.

Second, there is an expectation – at least in some quarters – that the crisis will prompt a re-think across countless boardrooms about the wisdom of simultaneously adopting a lean, 'just-in-time' approach to production and increased reliance on supply chains that cross multiple borders.

It is argued that the crisis will prompt a period of 'on-shoring', with companies switching towards a more resilient supply chain that is organised around domestic suppliers. In effect, the competitive pressure from overseas producers is diminished and mark-ups in the domestic economy may rise. In passing, costs are also likely to increase for the end consumer.

## INDIRECT TAXES

Permanent changes in indirect taxes will have a permanent impact on the price level and a temporary impact on inflation. As we are about to discover in Germany, temporary changes in indirect taxes will have a temporary, and in all likelihood smaller, impact on the price level and that induces a temporary, but oscillating impact on inflation.

These tax-induced changes in inflation are typically only of interest to investors in index-linked securities who have an obvious interest in high-frequency movements in the price level. Even central banks give the impression of looking past these changes in inflation – precisely because they are transitory and do not reflect fundamentals (the output gap or pricing power).

The one exception to this argument is when you have a sequence of changes in indirect taxes in the same direction. This can deliver a sustained increase in headline inflation. At this point, central banks find it harder to look through these changes in inflation. We can envisage three arguments for an upward trend in indirect taxes: Higher taxes to fix the environment; or to fix the public finances; and higher tariffs in the pursuit of a protectionist agenda.

## ENVIRONMENTAL TAXES

It is reasonable to suppose that environmental taxes will become more prevalent over time, often in the form of a gradual increase in tax rates. This then imparts a sustained boost to headline inflation. Where Germany is concerned, this is a fact, not a forecast. The government is phasing in a CO<sub>2</sub> emissions tax for the heating and transportation sectors over five years, starting at EUR 25 per tonne in 2021 and rising to EUR 55 per tonne.

We should expect to see this basic template applied nationally and supra-nationally, with the European Commission keen to secure its own revenue sources and advance its green agenda. Of course, the tax-induced increase in consumer price inflation does not necessarily mean a squeeze on disposable income; proposals such as the Baker-Shultz plan envisage a carbon dividend to every household to offset the impact on the price level.

## A RISE IN INDIRECT TAXATION TO FINANCE FISCAL CONSOLIDATION

The crisis will lead to a significant erosion of public finances. The debt stock will certainly increase, but the burden may be reduced somewhat by the persistent low level of market interest rates or the persistent financing of those debts through central bank reserves (the bonds stay on the balance sheets of central banks for a sustained period).

However, it is not just a question of servicing the initial rise in the debt load; finance ministers will need to reduce the level of borrowing to prevent further accumulation of debt. The cyclical element of borrowing should eventually close, but that may take time. If the output gap remains negative for a sustained period, automatic stabilisers will keep cyclical borrowing high for a sustained period too (tax receipts will be low; welfare payments high).

In any case, any structural increase in borrowing will not disappear even when the output gap closes. A structural increase in borrowing could occur because of damage to the level or the distribution of income (which implies lower tax receipts from a smaller tax base or lower effective tax rates). It is precisely in this sense that the supply side scenario we discussed in the output gap section is so ruinous for public finances.

For the reasons described above, it seems likely that some element of fiscal consolidation may be required at some stage, and given past experience, it would not be surprising if that manifested itself in higher indirect taxes at least in some jurisdictions. Cutting spending will not be popular, to put it mildly.

The final risk we consider here crystallised in 2019: An increase in tariffs. If there is a resumption of hostilities in the trade war or if there is a breakdown of existing trade agreements (for example, between the EU and the UK) additional tariffs may be imposed upon imported goods.

The pass-through from higher tariffs on imports into consumer prices may be gradual, with a transitory compression of margins in the retail sector delaying the full impact. However, if the increase in tariffs is of a significant size and scale (coverage of the import basket), it can have a material impact on inflation.



## INFLATION EXPECTATIONS, THE FINAL FACTOR IN OUR STORY AND ARGUABLY THE MOST IMPORTANT

All of our other factors explain a deviation of inflation around the long-run trend. In the modern textbook, that long-run trend is assumed to be the target of monetary policy, but there is nothing that guarantees this. Technically speaking, an output gap of zero (demand equals supply) implies that there is no pressure on inflation to deviate away from the rate of inflation that people expect.

These expectations become embedded implicitly and sometimes explicitly (via indexation clauses) in price and wage setting. If people don't expect prices to rise in line with the target then there is no reason why they should do so. And if inflation expectations move, inflation also moves.

Many investors appear to have fallen out of love with the output gap mechanism as a plausible driver of inflation dynamics. They question whether large imbalances in the real economy continue to have the same material implications for prices as they once did – particularly, if those imbalances are local and the global economy is roughly in balance in what is an increasingly globalised economy. However, it does not necessarily follow that this expectations mechanism has also become less powerful.

We should consider two plausible expectations risks. Both risks involve expectations drifting away from the target of monetary policy. However, the risks are built on different assumptions about how expectations are formed and point in opposite directions.

### THE DOWNSIDE RISK, MUCH DISCUSSED IN MARKETS IN RECENT YEARS, EVEN HAS A NAME: JAPANIFICATION

This risk is based on the idea that the inflation rate that households and companies expect in the future will reflect their experiences of inflation in the present and recent past. Under so-called adaptive expectations, a prolonged period of low, no or even negative inflation can then cause expectations to de-anchor from the target. Once this has occurred, inflation will not return to the target even if the output gap closes after a long recession.

This risk looks like a clear and present danger to the medium-term inflation outlook. After all, the ECB's own projections suggest that core inflation will be stuck one percentage point below the target as far out as 2022.

### THE UPSIDE RISK RELIES ON A COMPLETELY DIFFERENT EXPECTATIONS FORMATION MECHANISM

Rather than the experience of low inflation dragging expectations down, we now consider fears of inflation in the future causing expectations to rise.

As we discussed, the optimal solution to the crisis is, in our view, for central banks to permanently finance the costs of supporting the economy through the acute phase of the pandemic with the interest paid on central bank reserves.

The one caveat we highlighted was the risk that permanent monetary financing would de-anchor inflation expectations, perhaps because politicians and the public conclude that the central bank should fund all future spending on important projects.

**This is the basis of our upside risk for inflation:**

**That the rapid expansion in central bank balance sheets and the implicit commitment to finance spending into the far future through interest paid on central bank reserves shakes confidence in price stability.**

As we discussed, there is a clear precedent for this upside risk. The public debt burden created through the Second World War was primarily solved through a combination of high inflation and financial repression. These fears could manifest themselves first in financial markets, and if localised in certain jurisdictions, in the exchange rate – at which point our expectations risk would manifest itself through the cost channel.

July 2020



## BIOGRAPHY



Richard Barwell is Head of Macro-Economic Research at BNP Paribas Asset Management. In this role, he has responsibility for coordinating the work of the team in formulating alpha-generating investment views across all asset classes, promoting collaboration between investment teams, the BNP Paribas Asset Management brand and supporting the firm's client base. He retains responsibility for coverage of macro and market developments in Europe. Prior to joining us, Richard was Senior European Economist at the Royal Bank of Scotland, Markets & International Banking, Senior UK Economist at the Royal Bank of Scotland, Global Banking & Markets, and a Senior Economist at the Bank of England. Richard has 16 years of investment experience. He holds a BSc in Economics and Econometrics from the University of Nottingham, and an MSc in Mathematical Economics and Econometrics and PhD in Labour Economics, both from the London School of Economics and Political Science.

## DISCLAIMER

BNP Paribas Asset Management France, "the investment management company," is a simplified joint stock company with its registered office at 1 boulevard Haussmann 75009 Paris, France, RCS Paris 319 378 832, registered with the "Autorité des marchés financiers" under number GP 96002.

This material is issued and has been prepared by the investment management company.

This material is produced for information purposes only and does not constitute:

1. an offer to buy nor a solicitation to sell, nor shall it form the basis of or be relied upon in connection with any contract or commitment whatsoever or
2. investment advice.

This material makes reference to certain financial instruments authorised and regulated in their jurisdiction(s) of incorporation.

No action has been taken which would permit the public offering of the financial instrument(s) in any other jurisdiction, except as indicated in the most recent prospectus and the Key Investor Information Document (KIID) of the relevant financial instrument(s) where such action would be required, in particular, in the United States, to US persons (as such term is defined in Regulation S of the United States Securities Act of 1933). Prior to any subscription in a country in which such financial instrument(s) is/are registered, investors should verify any legal constraints or restrictions there may be in connection with the subscription, purchase, possession or sale of the financial instrument(s).

Investors considering subscribing to the financial instrument(s) should read carefully the most recent prospectus and Key Investor Information Document (KIID) and consult the financial instrument(s)' most recent financial reports. These documents are available on the website.

Opinions included in this material constitute the judgement of the investment management company at the time specified and may be subject to change without notice. The investment management company is not obliged to update or alter the information or opinions contained within this material. Investors should consult their own legal and tax advisors in respect of legal, accounting, domicile and tax advice prior to investing in the financial instrument(s) in order to make an independent determination of the suitability and consequences of an investment therein, if permitted. Please note that different types of investments, if contained within this material, involve varying degrees of risk and there can be no assurance that any specific investment may either be suitable, appropriate or profitable for an investor's investment portfolio.

Given the economic and market risks, there can be no assurance that the financial instrument(s) will achieve its/their investment objectives. Returns may be affected by, amongst other things, investment strategies or objectives of the financial instrument(s) and material market and economic conditions, including interest rates, market terms and general market conditions. The different strategies applied to financial instruments may have a significant effect on the results presented in this material. Past performance is not a guide to future performance and the value of the investments in financial instrument(s) may go down as well as up. Investors may not get back the amount they originally invested.

The performance data, as applicable, reflected in this material, do not take into account the commissions, costs incurred on the issue and redemption and taxes.

All information referred to in the present document is available on [www.bnpparibas-am.com](http://www.bnpparibas-am.com)