



BANK OF ENGLAND

Speech

Mismatch

Speech given by

Ben Broadbent, Deputy Governor Monetary Policy

Bank of England

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I've received helpful comments from colleagues at the Bank of England, both those on the MPC and also Matt Corder, Andrew Hauser, Fergal Shortall, and Brad Speigner. As you might expect for something with so many graphs I've also had lots of help with data. For that I must thank Nishat Anjum, Justin Beresford, Phil Bunn, Emil Iordanov, Zaar Khan, Hela Mrabet, Douglas Rendle and Brad Speigner, as well as Spencer Hill at Goldman Sachs for the numbers in Chart 12. I also want to give particular thanks to Mette Nielsen, for her fantastic work not just on this speech but throughout her time in the DGMP office. After nearly four years in this job Mette has finally escaped and is moving on to another. The views expressed are my own and do not necessarily reflect those of the Bank of England or other members of the Financial Policy Committee or the Monetary Policy Committee.

Introduction and summary

Good morning.

We're going through a period of very rapid economic growth. On a reasonable estimate GDP in the second quarter of this year was probably around 5% higher than in the first and more than 22% higher than a year earlier. That's easily the fastest year-on-year rate of growth since quarterly estimates began in the mid-1950s, and probably a long time before that as well.

We know that rapid growth in demand tends to put upward pressure on prices. So with numbers like these perhaps it's not surprising to see inflation going up, here and in other countries. In the UK, annual CPI inflation has risen from ½% to 2½% in the past four months. That's more than half a percentage point higher than in late 2019, immediately before the pandemic. The MPC expects inflation to rise significantly further, to well over 3%, over the next six months.

But in some ways the extent of the rise is a bit surprising. The economy may have grown very strongly over the past year but that's only because it contracted so spectacularly in the first half of 2020, during the first phase of the pandemic. Even now, it's still a long way from where it was before all this began. Growth of 5% in Q2 would still leave UK GDP 4% lower than at the end of 2019. And economic contractions don't normally lead to higher inflation.

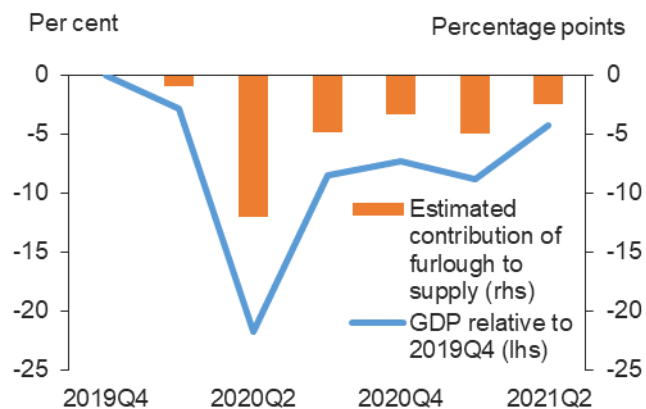
We can identify a number of contributory factors, things that help to account for this contrast, right off the top.

One is base effects. Arguably, comparing economic growth over the past eighteen months with the change in prices over the past twelve isn't quite fair. One of the reasons annual inflation has risen so steeply through this spring is that prices of goods (energy in particular) fell significantly a year earlier, during the first phase of the pandemic. Over the past year and a half as a whole, so including that initial drop, headline and core CPI have both risen at an average (annualised) rate of 1½-1¾%, a little weaker than pre-pandemic rates.

We know too that quite a bit of the drop in output has been matched, on the supply side, by the significant numbers on the furlough scheme. The CJRS has successfully protected millions of jobs. But, because those on furlough aren't available for others, it's had the effect of matching part of the decline in labour demand with a decline in labour supply. During the second quarter of this year it's likely that an average of over 2½ million people were furloughed – more than 7% of the workforce. Some of those employees were actually working, at least on a part-time basis, and furloughed jobs tend to be less well paid than the average. But, taking account of these things, the scheme was still holding back effective supply in the economy by an estimated 2%-3% in Q2 (Chart 1).

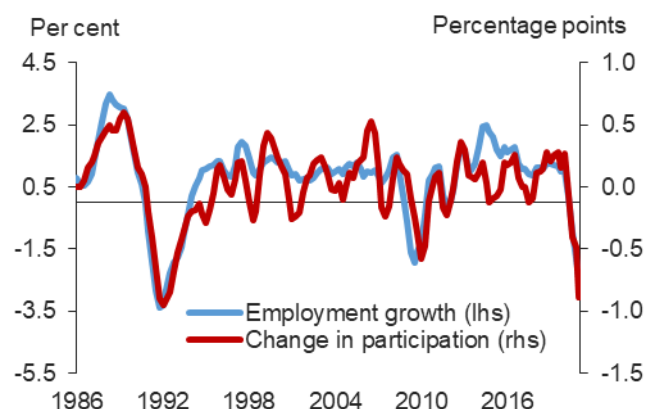
Finally, we also know that the share of the population either in or actively looking for work – the so-called participation rate – has also fallen (the red line in Chart 2 is the year-on-year change). This too will have reduced the supply of labour.

Chart 1: By protecting jobs CJRS had the effect of reducing labour supply alongside labour demand^{1,2}



Sources: ONS, HMRC, OBR and Bank calculations.

Chart 2: Participation likely to recover as employment does so



Sources: ONS and Bank calculations. 2-quarter averages.

However, I doubt these things can fully account for the unusual strength in inflation (given the contraction in the economy). Inflation over an 18-month period may have been slightly lower than before the pandemic but the difference is barely noticeable. The cumulative drop in GDP, over the past six quarters, still comfortably exceeds the estimated hit to supply from the furlough scheme. And it's perfectly normal for participation to fall in downturns (not everyone who loses or quits a job immediately starts looking for another). What's

¹ Impact on GDP estimated as the percentage hit to labour input multiplied by labour share in value added and adjusted for compositional productivity effects. Impact on effective supply additionally strips out the contribution from those furloughed who are searching for a new job.

² This work was produced using statistical data from ONS. The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce National Statistics aggregates.

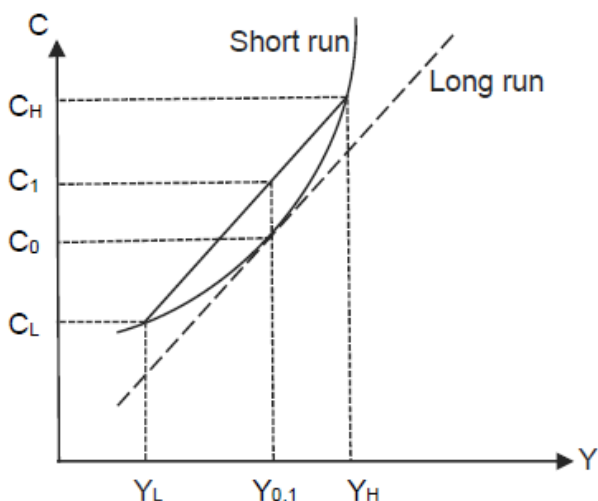
happened over the past year isn't a surprise, given the drop in employment (Chart 2 provides the comparison).

Whatever their contribution to recent rates of inflation we can at any rate expect the effects of lower participation and the CJRS to fade soon enough. The participation rate is likely to rise again as the labour market recovers and the furlough scheme is being wound down.

So today, in the interests of thinking about what might prove more persistent sources of inflation, I want to concentrate on other things, stuff that's not directly evident from the aggregate data. In doing so I'll be expanding on a theme – the broad description might be “mismatch” – that I touched on in a talk earlier this year and that my fellow MPC members Michael Saunders and Jonathan Haskel have also developed in their recent speeches³.

One of the things I pointed out at that time was that, despite the weakness in aggregate UK consumption, some areas of spending had been pretty strong. Broadly speaking, and for understandable reasons, the pandemic had induced a sizeable shift in UK consumer spending from services to goods. And shifts in spending of this sort, at least until (and unless) they're met by matching shifts in supply, tend to push up average prices. In part that's just because retail goods prices tend to be more flexible than those of services. It's also because, at least in the short run, costs are “convex” (Chart 3): the rise in costs and prices in areas where there's strong demand are larger than the equivalent declines in sectors where demand is weak.

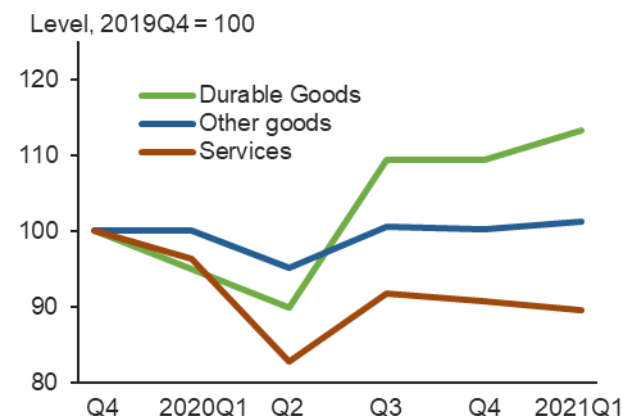
Chart 3: Convexity means greater dispersion in demand increases average costs



³ [Saunders \(2021\) “The inflation outlook” speech given during an online webinar](#) and [Haskel \(2021\) “Will the pandemic “scar” the economy?” speech given in online webinar at the University of Liverpool Management School.](#)

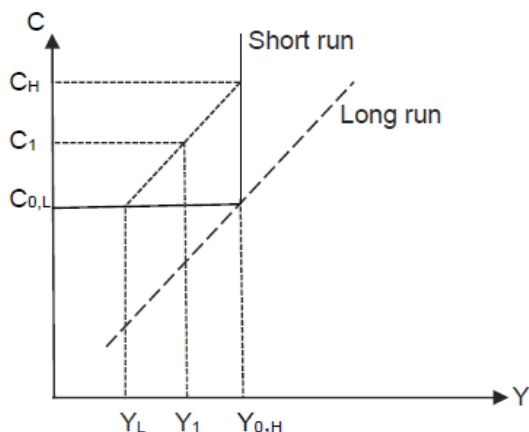
Perhaps unsurprisingly, in response to what is a global pandemic, we've seen similar shifts elsewhere. Across the OECD as a whole, consumption of services in the first quarter of this year was still well below pre-pandemic levels, but spending on goods – durables in particular – was significantly higher (Chart 4). Compounded by specific hits to supply in some areas these have contributed to large rises in the price of many traded goods – not just oil, but other basic commodities and some intermediate manufactures, such as computer chips, as well. Indeed in several cases it's not even been possible to get hold of such things, except after a long delay. These “bottlenecks” are what you'd expect to see if you had a more angular, “L-shaped” version of the smooth cost curve in Chart 3 (Chart 5).

Chart 4: Switch from services to goods has been a global phenomenon



Sources: OECD Quarterly National Accounts, IMF World Economic Outlook and Bank calculations.

Chart 5: Production limits have led to bottlenecks and steep price rises for some traded goods



Nor have these shifts been limited to goods versus services. In the UK, there seems to be quite a bit of divergence in demand even within sectors, not just between them. Some of this may reflect differences across regions in the strength of the recovery – there are indications that activity has been slower to return in cities than in less urban areas. And whatever the underlying causes of this dispersion, it seems to have resulted in a degree of mismatch in the labour market. Some firms are finding it hard to recruit people, even as others have kept significant numbers on furlough. If only at the margin, this mismatch may have added to

near-term pressure on wages. The full-time pay of those on furlough doesn't fall but, where there are shortages, firms have to pay more⁴.

In January, I felt that these mismatches would probably get ironed out over time. If the pandemic had caused significant shifts in demand those would be reversed as economies recovered: we were likely to see the strongest growth in the areas hardest hit during the downturn, and in which there was therefore more spare capacity. And if these shifts turned out to be more persistent they'd in time be matched by corresponding reallocations of supply.

For tradable goods, I still think this is a reasonable central case. The shift towards goods demand is unlikely to endure forever and there may already be some early signs that consumer spending – here and in other countries – is rotating back to services. And in many of these markets supply looks to be reasonably “elastic”, at least over the medium and longer term: it responds positively to higher prices, ensuring a degree of self-correction (you can think of this as a flattening out of the cost curves in Charts 3 and 5). For most non-oil commodity prices, for example, periods of rapid growth tend to be followed not just by lower inflation but by rates of inflation that are actually below average. There's evidence of the same mean-reverting tendency in manufacturers' input prices in aggregate.

It may also be a reasonable central case in the domestic economy but here things are more uncertain. Some shifts in spending may stick. If significant numbers of people continue to work from home, for example, the resulting changes in the pattern of spending – away from city centres, and on transport, and towards other areas and other goods and services – could endure. And it would take time to shift resources – people, capital, know-how – accordingly. The UK labour market is flexible and here too there are early signs that the degree of mismatch may be easing a little. But in some cases that may take time and it may take extra costs.

As is often the case, therefore, the behaviour of labour costs will for me be important in judging the appropriate stance for monetary policy. This won't be straightforward. Unfortunately, there's still a great deal of noise in the earnings data – base effects, shifts in furlough and in the composition of employment are all still distorting official estimates of wage growth – but they are nonetheless a key area of focus.

Let me now go through these two broad areas in more detail – first traded goods and then the domestic labour market – before wrapping up with some implications for what matters for policy.

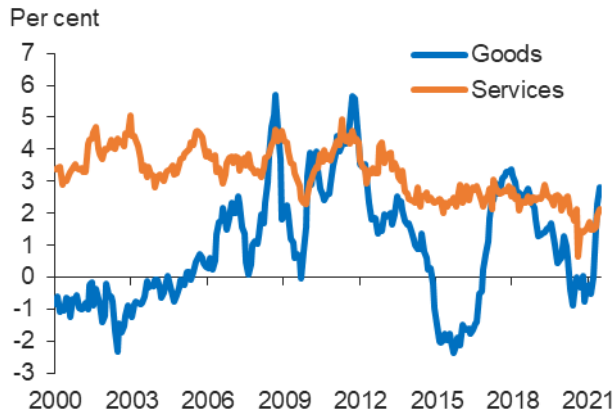
The strength of global goods price inflation: shifts in demand and constraints on supply

The upside surprises in inflation, here and in other countries, have been concentrated in prices of physical goods. Chart 6 plots the two series in the UK. For the first time in quite a while, goods price inflation is

⁴ Put another way, mismatch in the labour market tends to raise the rate of unemployment consistent with stable wage growth – the so-called “NAIRU”.

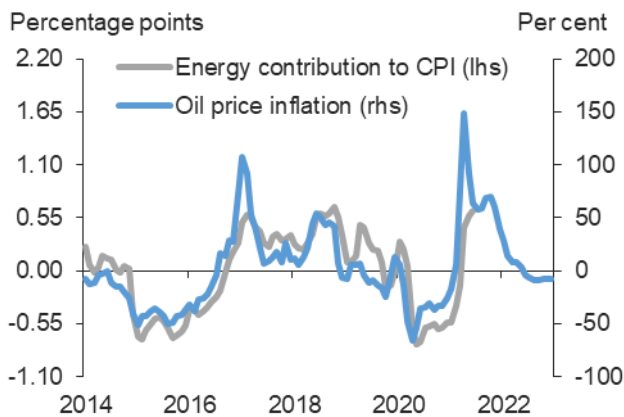
higher than that in services. This has happened before – briefly in 2008, 2011 and again in 2017. But generally, because productivity grows faster in the production of goods (their relative cost of production therefore declines), inflation is usually lower than in services.

Chart 6: Higher inflation driven by goods prices; inflation in services has been below average



Sources: ONS and Bank calculations.

Chart 7: Some of that driven by higher oil prices; effect on CPI inflation likely to be temporary



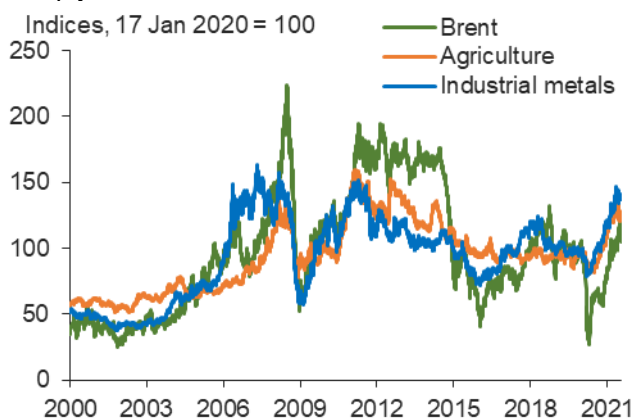
Sources: Bloomberg Finance L.P., ONS and Bank calculations.

Some of this is related to base effects from the collapse in oil prices last spring. The rebound since has pushed up the year-on-year comparisons for energy prices, something that’s likely to go further in the coming months (Chart 7 plots the change in sterling oil prices against the contribution of energy to overall CPI inflation). A big jump in oil prices was also the main cause of rapid goods-price inflation in 2008.

But it’s not the only reason this time around: inflation in “core” goods prices, which excludes food and energy, has also risen noticeably. And unlike those earlier episodes in 2011 and 2017, this hasn’t been caused by a big drop in the exchange rate. (Because they’re more traded than services, goods prices are more sensitive to the cost of foreign currency.)

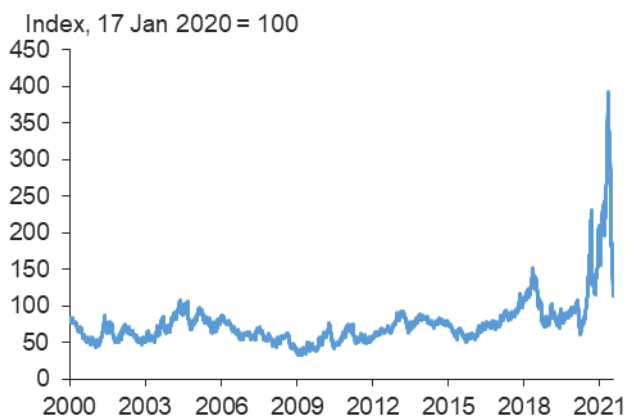
Instead, it reflects a much more global trend. Prices of retail goods have accelerated everywhere, to a greater extent still at the wholesale level. Some of the more eye-catching trends have been in basic commodities. Chart 8 plots wholesale price indices for oil, metals and agricultural goods. The latter two are aggregate measures. The six-fold rise in the price of US lumber provided one of the more spectacular examples for an individual commodity (Chart 9).

Chart 8: Non-oil commodity prices have also risen sharply



Sources: S&P Dow Jones Indices, Bloomberg Finance L.P and Bank calculations.

Chart 9: The spike in lumber prices didn't last long

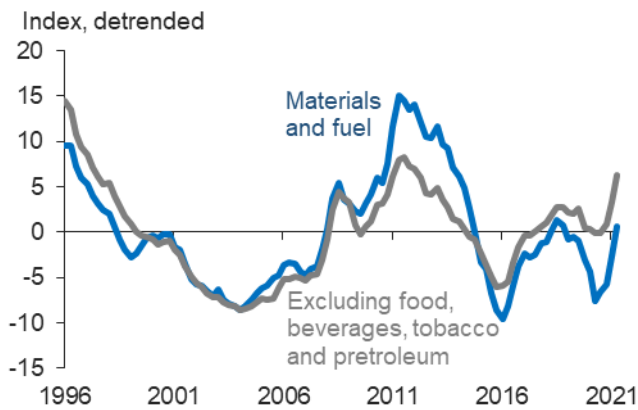


Sources: CME Group⁵ and Bank calculations.

But there have also been sharp price increases further up the supply chain – one notable example is computer chips. And the overall picture, evident in both surveys and official data, is that manufacturers the world over have been facing significantly higher prices for their inputs than they were not just some months ago but even before the pandemic (Chart 10). In many cases (Chart 11) firms have been unable to get hold of them at all, except with long delays, with knock-on effects on their own delivery times.

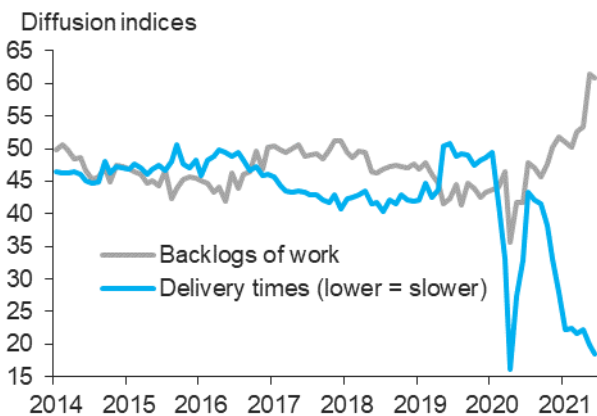
⁵ CME Group market data is used under license as a source of information for certain Bank of England products. CME Group has no other connection to Bank of England products and services and does not sponsor, endorse, recommend or promote any Bank of England products or services. CME Group has no obligation or liability in connection with the Bank of England products and services. CME Group does not guarantee the accuracy and/or completeness of any market data licensed to Bank of England and shall not have any liability for any errors, omissions, or interruptions therein. There are no third-party beneficiaries of any agreements or arrangements between CME Group and Bank of England.

Chart 10: Rises in manufacturers' input prices often followed by below-average rates of inflation



Sources: ONS and Bank calculations.

Chart 11: Shortages have had knock-on effects on manufacturers' delivery times



Sources: IHS Markit/CIPS.

But if demand in aggregate is still lower than it was at that time, across the developed world as a whole, how come traded goods prices are significantly higher? And what does the answer tell us about future trends?

In some cases there are specific problems with supply. Semiconductor production, for example, has been hampered by a series of weather-related problems in the major producers in Asia and the US⁶ and also, on occasion, by outbreaks of Covid among factory workers⁷. More generally, affecting trade in all goods, there have been severe constraints on shipping capacity through the first half of this year. The fact that China began to recover earlier than other countries meant a reduction in effective capacity (containers were fuller in one direction than the other). Covid outbreaks and restrictions mean it's been taking longer to load and

⁶ These include a fire at one of the largest semiconductor factories in Japan, a shortage of water at some factories in Taiwan and winter storms and power outages in Texas that halted production for a month at some plants (see "A semi-troubling shortage", US Daily, Goldman Sachs, 24 April 2021).

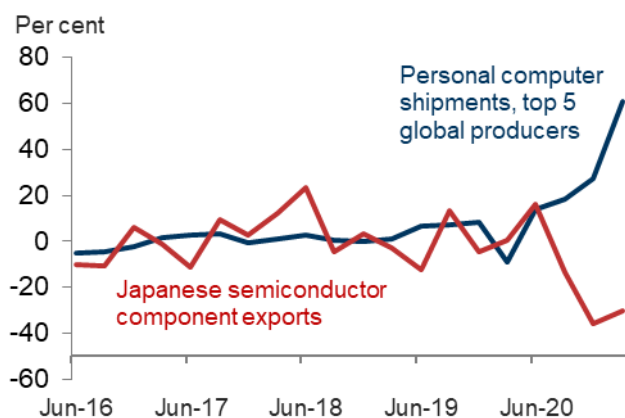
⁷ See, for example, "Taiwan's Covid-19 outbreak spreads to chip companies", Financial Times, 8 June 2021.

unload containers, leading to blockages at many US and Asian ports. The week-long closure of the Suez Canal, a major thoroughfare for trade between Asia and Europe, added to these problems⁸.

A good deal of the explanation also lies on the demand side. As we saw in the introduction, ours isn't the only country where consumer spending seems to have shifted from services to goods. And in several places, investment – naturally more concentrated on goods than services – has also picked up strongly. At least in part this is because firms have some catching up to do, having spent very little on new capital equipment last year. The same applies to durable goods for consumers – cars, for example – where demand collapsed in 2020 but has recovered strongly in 2021. There is evidence that the stimulus cheques sent to US households, as part of the new administration's fiscal expansion, have been spent disproportionately on durable goods (as one might expect of any one-off source of income).

The semiconductor sector may represent the starkest example of this collision between stronger demand and weaker supply. Chart 12, for example, plots shipments of PCs by the major five global producers against exports of semiconductor components from Japan. The first rose significantly through the course of last year, boosted by the general shift away from consumer services to goods, and in particular the necessity of working more from home and, for firms, of moving activity online. But semiconductor production contracted in Japan and other major producing countries through the latter part of last year and the result was a marked drawdown in inventories and a sharp rise in prices.

Chart 12: Demand for PCs rose steeply last year but supply of components declined



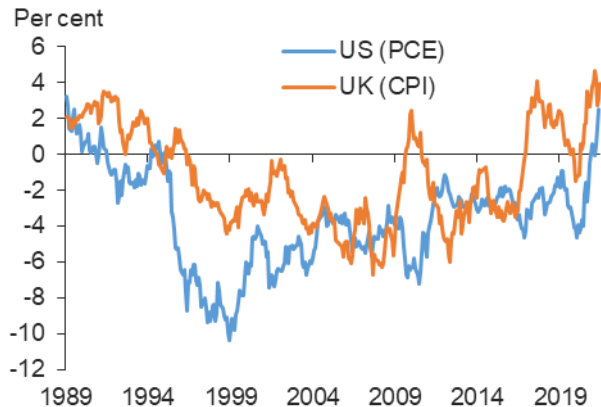
Source: Goldman Sachs, see Goldman Sachs (2021, see footnote 6) for further detail. Changes on a year ago. Semiconductor components include wafers, flash memory and DRAM memory, weighted by 2017 shipment values.

This has now begun to appear at the retail level in prices of goods that rely on computer chips – computers themselves (obviously) but also audio-visual goods and new cars (Chart 13 plots their average inflation rates

⁸ In late March, a large container ship (the *Ever Given*, a quarter of a mile long) was buffeted by strong winds and ended up wedged across the width of the canal. It took six days to dislodge the vessel and re-open the canal. A useful summary of the problems in shipping supply in general can be found here: "Global shipping container shortage: the story so far", Ship Technology, 29 April 2021.

in the US and UK). The resulting problems and delays in car production have had knock-on effects on prices of second-hand vehicles, especially in the US.

Chart 13: Prices of goods that use computer chips have risen sharply in the US and UK



Sources: ONS, BEA and Bank calculations. Chart based on Goldman Sachs (2021, see footnote 6). 12m inflation rates for semiconductor-intensive spending categories: audio-visual goods, photographic/optical equipment, computers, household appliances and new cars. Excludes new cars before 2011; earlier data rescaled for comparability.

Wholesale goods-price inflation likely to soften in time

For how long might this continue? One can't be precise about these things, but I do think that, for reasons on both the demand and supply side, these very rapid rates of wholesale goods-price inflation are likely to subside at some point. Indeed, in some cases they could even go into reverse.

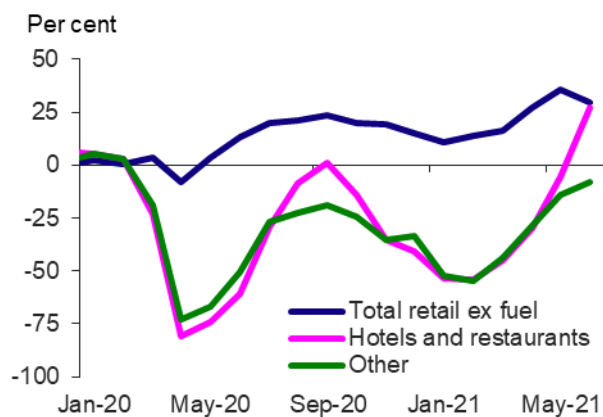
When it comes to demand, I think it's reasonable to expect shifts caused by the pandemic to narrow again as the threat of it recedes. Consumers will rotate some of their spending back to services. To the extent strong demand for durable goods specifically is to make up for ground lost last year that only needs to be done for a while: people buy a new computer or car only once every few years, not every quarter. Indeed there may already be signs – tentative but visible – that these imbalances are beginning to diminish. Retail sales fell in May, in both the US and UK. Spending on Barclaycard doesn't suggest any reacceleration in June, in this country (Chart 14). It does on the other hand suggest that other areas of spending – those most heavily affected by the lockdowns, like hospitality and restaurants – has been growing faster than that on goods since the economy re-opened in April.

Second, supply in some of these goods markets is ultimately quite "elastic": over time, higher prices encourage higher production, ensuring a degree of self-correction.

For some basic commodities the response could be relatively straightforward: it might simply be a question of reopening an existing plant, mine or sawmill. We've already seen a small example of this. The big jump in US lumber prices through the winter (Chart 9 again) encouraged greater supply which in turn led to a

significant correction in prices. Lumber prices are now two-thirds below their peak in May, implying that annual inflation rates are likely to be negative next spring. In the data, many non-oil commodity prices seem to exhibit the same “mean-reverting” tendency⁹.

Chart 14: Areas of consumption hit hardest last year have grown more strongly in the recovery



Sources: [Barclaycard](#) and Bank calculations.
Data weighted by pre-Covid consumption share. 2y growth from March 2021 and 1y growth before that due to Covid base effects.

This is perhaps an extreme example. It’s rare that increasing supply is as straightforward as chopping down another tree and cutting it up (and even lumber production isn’t as simple as that). Producing a micro-controller for a car, for example, is a much more complicated process and it takes significantly longer for supply to respond. Many analysts have said they expect the chip shortage to persist into next year.

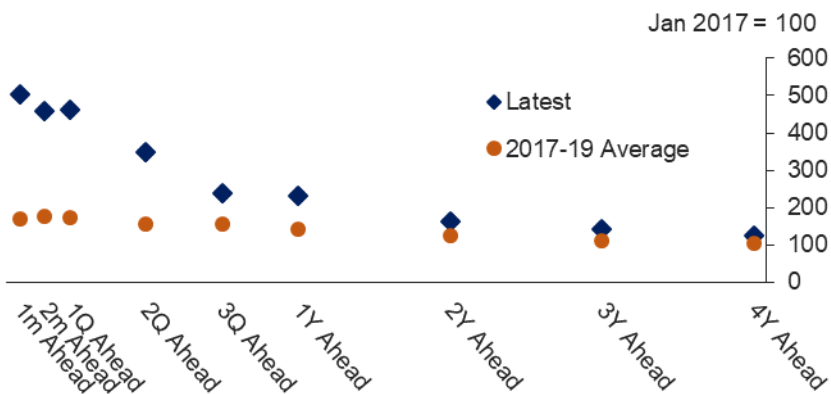
Even here, however, many also believe that we may already have passed the period of maximum strain. The Taiwan Semiconductor Manufacturing Company, a major producer, said last week that its own production had risen 30% in the first half of 2021, relative to the same period a year earlier, and that it expects full year growth of 60% (in response to what have been much milder price rises I think this counts as relatively “elastic” supply). The Chief Executive of the company said “we expect the shortage to be greatly reduced for TSMC customers starting this quarter”.¹⁰

One would expect this to take some of the heat out of semiconductor prices, and those of the goods that rely on them. As for shipping, which has affected the time and cost required for all international goods trade, expectations of future prices, as indicated by forward contracts (Chart 15), imply material declines over the next year or so.

⁹ See, for example Winkelried (2021), ‘Unit roots in real primary commodity prices? A meta-analysis of the Grilli and Yang data set’. *Journal of Commodity Markets*, article in press.

¹⁰ See “TSMC signals global chip crunch may be easing”, Financial Times, 15 July 2021.

Chart 15: Forward contracts suggest material declines in shipping costs



Sources: Baltic Exchange and Bank calculations.

Panamax is a sub-index covering mid-sized vessels travelling on 5 of the 23 shipping routes of the full index. It co-moves quite closely with the overall Baltic Exchange Dry Index.

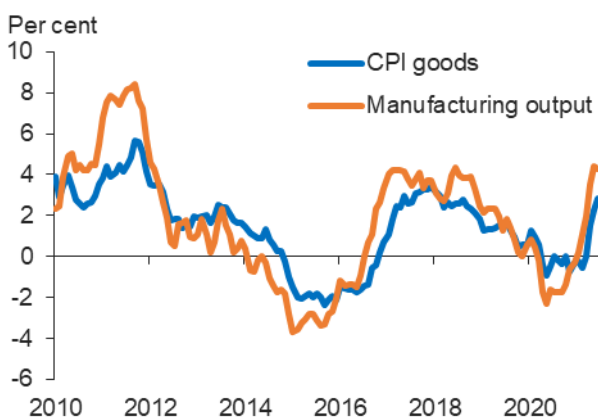
And what the longer run of data indicates is that this mean-reverting property in prices – the tendency for rapid increases to be followed not just by lower but by below-average rates of inflation – applies not just to non-oil commodities or particular individual goods but manufacturers’ input prices in aggregate. This is (more or less) apparent from Chart 10. It’s also confirmed by more formal statistical tests.

But retail goods price inflation likely to rise further in the near term

Clearly there are risks around these judgements. Rebuilding inventories and clearing backlogs will take time. So there may in some cases be continuing pressure on suppliers of wholesale goods even after (and if) growth in final demand from consumers falls back.

In addition it’s possible that not all the rises in wholesale goods prices that we’ve already seen have yet been passed on to the retail level, at least in the UK (Chart 16). If so, then annual inflation in retail goods – both in aggregate and excluding energy – is likely to rise further before it starts coming down.

Chart 16: Goods price inflation likely to rise further in the months ahead



Sources: ONS and Bank calculations.

The third reason for a degree of caution is that these mismatches between global supply and demand for goods aren't the only ones, it seems. There are also signs of the same – excess capacity in some areas, excess demand in others – within the UK economy. And although they're less startling than in some areas of traded goods, it may take longer, if they persist, to accommodate via matching shifts in supply. It's these more domestic mismatches we'll have a look at now.

Domestic mismatch and the UK labour market

Despite the prevailing lockdown, signs of a recovery in the UK labour market began to appear early this year. Surveys suggest employment stabilised in February. The numbers of unemployed and on furlough peaked at around the same time. Job vacancies, which had actually reached a low during the first lockdown, began to rise sharply.

All this seems of a piece. Yet in some ways it's odd – odd, at least, if you think of employers as identical and employees as a similarly homogeneous group – that vacancies and the use of the furlough scheme should co-exist at all. Imagine the corporate sector was like a single representative firm, selling only one thing and employing people with identical skills and characteristics (whose wages are therefore all the same as well). Why would it choose to create a new job, with all the associated search costs, when it could simply re-employ someone on furlough? Why should unemployment start to fall when there were still around five million people on the CJRS, as was the case in late January?

There are always job vacancies in the economy, even when unemployment is quite high. So we know firms and workers aren't entirely homogenous. Not every worker is suitable for every job. Nor was every job eligible for the CJRS scheme to begin with. But the fact that vacancies should have picked up so strongly, while there were millions still on furlough, does suggest that the early phase of the recovery might have been quite uneven – that the jobs lost in the downturn may not have not been the first to come back during the upswing.

The broad distribution of vacancies across sectors provides some supporting evidence for this. One way to measure labour-market mismatch is to look at the sectors in which there are vacancies and those in which unemployed people last worked.¹¹ If there's a good correlation between the two – if the people looking for work have experience in the sectors in which firms are looking to hire – mismatch (on this particular measure) is low. When there's a poor correspondence between available workers and available jobs the measure is high. In Chart 17 the blue line is the standard measure, in which “available workers” are defined as the unemployed. The orange line broadens the concept to include those on furlough as well. This is a relatively crude measure as the sectors we use are pretty broad¹². But, for what it's worth, this measure of

¹¹ See also [Haskel \(2021\) “Will the pandemic “scar” the economy?” speech given in online webinar at the University of Liverpool Management School.](#)

¹² We have vacancies only at what's known as the “section” level (i.e. across a crude division into 18 broad sectors). Chart 18 uses official output data at a “two-digit” level (100 sectors). The DMP allows us to look at variations at the level of individual firms.

mismatch rose sharply during the pandemic and, despite the recovery in the first half of this year, remains relatively elevated.

One reason for this might be continuing divergence in demand. Chart 18 plots the degree of dispersion in output growth across sectors, this time at a much finer level of disaggregation, over the previous two years. As we know, the pandemic was highly skewed in its effects, hitting some sectors and regions far harder than others. Some even benefited. You can see that in the big jump in the series from the second quarter of last year. And at least up until the first quarter of this year (we don't have any data since) there was no sign of any sort of correction.

Chart 17: Relatively poor correspondence between available jobs and furloughed employees so far



Sources: ONS vacancy and Labour Force Survey data and Bank calculations.

Chart 18: Up until 2020Q1 there was still significant sectoral dispersion in output

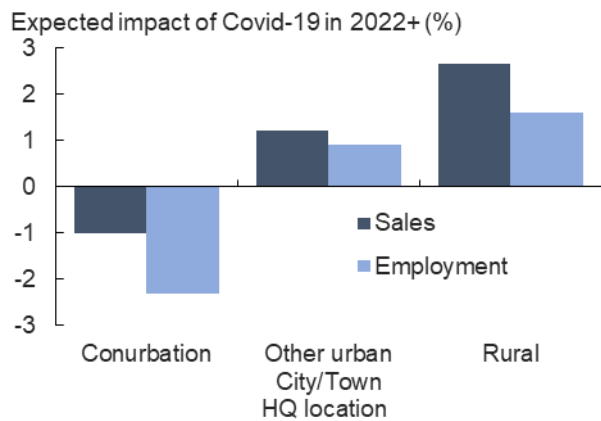


Sources: ONS and Bank calculations.

Interestingly, if you go finer still, and measure the same sort of variance in sales across individual firms – something our Decision Maker Panel (DMP) survey allows us to do – you find that quite a bit of it has occurred within sectors, not just between them.

One possible reason is that there appear to have been shifts in spending not just across different sectors but also across different parts of the country. We can't tell from official data, in any timely way, exactly what's happened to activity in different regions. Firms in the DMP still report weaker demand in urban than rural areas, relative to pre-pandemic levels (Chart 19). Charts 20(a)-(c) plot a few "real-time" indicators of consumer spending – restaurant bookings and Google tracking numbers for different kinds of shopping trips – for London and for the rest of the UK. In all three cases the figures for the capital are still a long way short of pre-pandemic levels, those for other parts of the country close to or some way above it. One would need to do a little more digging to check the point. But it would make sense that more working from home should have reduced consumer demand in city centres and increased it elsewhere. We know that the same has happened to the demand for housing, in the UK and in other countries. And it's therefore possible that some firms in urban areas are keeping people on furlough even as those in the same sector, but outside cities, are finding it hard to recruit people.

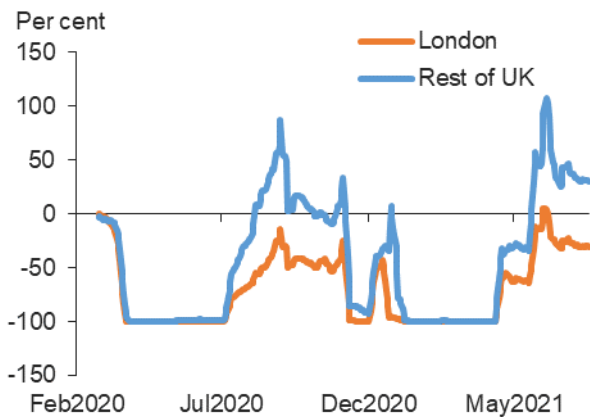
Chart 19: Firms in DMP see worse effects of pandemic in urban area¹³



Sources: Decision Maker Panel, ONS and Bank calculations.

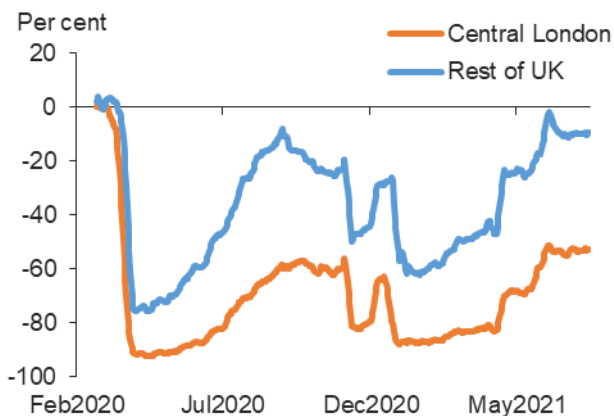
¹³ Results are based on the question: 'Relative to what would otherwise have happened, what is your best estimate for the impact of the spread of Covid-19 on the sales/employment of your business in 2022+?'. Locations of companies' headquarters are allocated to a rural/urban location based on the [2011 Census Rural Urban Classification](#).

Chart 20a: Restaurant bookings still well down on pre-pandemic levels in London, higher elsewhere



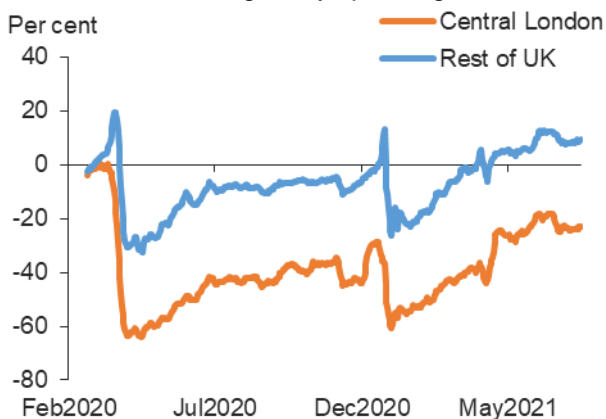
Sources: [OpenTable](#) accessed July 2021 and Bank calculations. 7-day rolling averages of year-on-year growth.

Chart 20b: Google tracking data suggests recreation spending also weaker in London



Sources: Google LLC "Google COVID-19 Community Mobility Reports" <https://www.google.com/covid19/mobility/> Accessed July 2021 and Bank calculations. 7-day averages relative to January-February 2020.

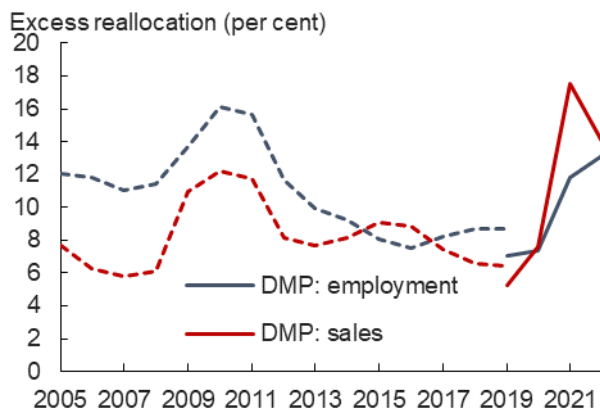
Chart 20c: Same for grocery spending



Sources: Google LLC "Google COVID-19 Community Mobility Reports" <https://www.google.com/covid19/mobility/> Accessed July 2021 and Bank calculations. 7-day averages relative to January-February 2020.

You'd expect all this to lead to matching reallocations in employment – job shedding in the weaker sectors and regions, strong rates of hiring where demand has picked up the most. And in the DMP survey that is indeed what you do see (Chart 21). But it hasn't yet happened to the same degree as in firms' reported sales – nor, if we extend the series backwards with other sources of data¹⁴, to the same extent as after the financial crisis, whose impact on firms' output was also highly uneven.

Chart 21: Employment reallocation has picked up but still looks lower than after the financial crisis



Sources: Decision Maker Panel, Bureau Van Dijk (based on Companies House data) and Bank calculations.

For similar reasons, and again both on the demand and supply side, I would expect these imbalances to subside somewhat as the economy recovers. The underlying dispersion in demand is more likely to narrow than widen further. We've already seen some signs of that across sectors, with "social consumption" recovering faster than areas of spending since the economy re-opened (Chart 14 again). In the meantime, the reallocation of jobs, which should also reduce these strains, is likely to continue and may even pick up for a while.

However, I'm more uncertain about this process, and the implication for costs in aggregate, than about the transitory nature of goods-price inflation. Some shifts in demand may stick (if significant numbers of people continue to work from home, for example). Some re-allocations of supply may be harder than others. If the lasting shifts in demand are towards sectors and activities that need more digital skills, for example, the corresponding increase in labour supply would take time and expense. We can't all become IT experts overnight. Nor could one easily dismantle an office or restaurant in a city centre and transplant it elsewhere.

I exaggerate, of course. Market economies face re-allocative shocks all the time and can very often absorb them without any visible effect at the macro-economic level. But this shock has been bigger than most. And

¹⁴ The DMP was only set up in 2016. Chart 21 extends this backwards using annual company accounts. Excess reallocation is calculated as the sum across firms of the absolute value of changes in employment or sales, less net change in employment/sales, expressed as a percentage of total employment/sales. The historical data from annual company accounts are calculated based on changes in employment/sales over the previous three years. The DMP data are based on realised employment/sales growth over the last two years plus expected growth over the next year. Annual excess reallocation data from the DMP are averages of monthly data. Sales and employment growth are calculated using Davis, Haltiwanger and Schuh (DHS) growth rates. This is the change between two periods, divided by the average of those two periods.

what matters is not so much whether any necessary re-allocations do eventually happen but what extra cost they require and whether that cost has already been incurred and passed on to consumers. I don't think we yet know the answers to those questions.

One important place to look will be wage growth. That's also the place where any "second-round" effects of the current inflation, via higher expectations for the future, would both appear and most matter.

Unfortunately, the headline wage numbers are currently beset by a host of distortionary effects. The figures for annual growth in the second quarter are being still depressed somewhat by the inclusion of furloughed workers in the sample. But they're also being boosted, to a much greater extent, by big base effects (average earnings fell sharply a year earlier) and also by compositional shifts (the fall in employment has been skewed towards lower paid jobs, mechanically raising the average pay of those still in work). My best guess is that, stripped of these things, underlying pay growth is firmer than can be explained by the rate of unemployment alone. Labour-market mismatch could help to explain the difference. But there is necessarily a significant degree of uncertainty both about these estimates and more fundamentally about how long these effects will last.

Conclusion

On the face of it the behaviour of inflation doesn't say great things about the growth of underlying capacity over the past eighteen months. Averaged over that period average inflation has been only a fraction lower than it was before the pandemic, despite a cumulative decline of around 4% in the level of output. If that amounts to a simple matter of "overheating" – if the economy really can't cope with aggregate demand growth any stronger than minus 2½-3% a year – then one can only conclude that the UK economy's supply performance has been chilly at best.

The reality is more nuanced. I've highlighted three contributing factors. By protecting individual jobs the furlough scheme has had the effect of matching lower labour demand with lower supply. In the second quarter of this year this was worth around 2-3% in terms of aggregate output. Prices of many tradable goods have risen sharply. In some cases this reflects specific supply-side problems. Also important has been the general shift in demand, away from services and towards goods, caused by the pandemic. Within the UK, those shifts – regional as well as sectoral – have caused a degree of "mismatch" in the labour market. At least during the early part of the recovery, available jobs haven't perfectly matched available workers (including those on furlough).

There's a good case that all three of these things will prove temporary. We know the furlough scheme is being wound down, restoring a significant degree of supply to the labour market. As far as tradable goods are concerned, it's unlikely the pandemic-related shifts in demand will continue if the threat of the illness itself recedes. They're more likely to narrow (we may already be seeing some signs of that correction in the data).

Particular glitches aside – and some of those are also the result of the pandemic – supply in many of these markets is also reasonably responsive to higher prices. For this reason, periods of rapid inflation in most non-oil commodities, and in manufacturers’ input prices in general, tend to be followed not just by lower but by below-average rates of inflation. The retreat of pandemic-related shifts in demand would also help to correct any mismatch in the domestic economy. And in the past, the UK labour market has often proved sufficiently flexible to absorb shocks, and reallocate resources – for example after the financial crisis – without a significant and lasting effect on the NAIRU or on wage growth.

However, these judgements get progressively more uncertain as one goes down the list. Even if the heat comes out of some of the final demand for goods, there’d probably be pressure on suppliers for a while afterwards, if inventories need to be restored. With vaccination rates in much of Asia lagging those in the rest of the developed world there are still risks to global supply chains from potential outbreaks of the virus. And, even if a reduction in domestic mismatch is more likely than the opposite, we can only be unsure about the time and expense required to address it.

What, in view of all this, is the appropriate policy response to the current inflation?

Most of the overshoot relative to target in the latest CPI numbers – more than all of it, on some measures¹⁵ – reflects unusually strong inflation in goods prices. In all likelihood that will also be true of the larger overshoot we’re going to see towards the end of this year. And if this was only a story about global goods prices – and depending how confident you were in its transitory nature – I think the answer could well be “nothing”.

There’s a clear parallel with changes in oil prices. In that case the most reasonable assumption is generally that the direct effect on inflation will be gone in a year or so, before monetary policy could do much about it. Subject to any “second-round” effects on wages, the orthodox view is therefore that policy should “look through” the immediate impact. (Note that this applies as much to falls as rises. In early 2015, for example, a big drop in the price of oil pushed headline UK inflation into negative territory, more than two percentage points below target. But, despite a lot of chatter at the time about “deflation”, the MPC did not ease policy because it thought the effect would probably be transitory.)

The parallel isn’t exact. Oil only needs to go through a simple refining process before it appears in the local petrol station and the general pass-through to retail energy prices is therefore fairly immediate. Many other tradable goods have to go through several steps before reaching the final consumer and pass-through of their price changes is probably more gradual. Based on past experience – notably the big falls in the value

¹⁵ In the latest monthly data services inflation was (just) higher than 2%. But there’s a case for measuring these “contributions” relative to past averages, to take account of trends in relative prices. On that basis, because services inflation is well below average, more than all the overshoot in aggregate inflation can be attributed to the goods side. In general, one should be careful in using these “contributions”, or at least make sure not to treat all else as equal. Over the medium-to-longer term, inflation is determined by monetary policy (and the credibility in the regime) not by individual components of the CPI, with relative prices determined by real forces (e.g. the relative demand for goods and services). So over time, assuming the inflation target is on average met, the true “contribution” of a rise in one particular component is likely to be zero – the counterpart is simply weaker inflation in other prices.

of sterling in 2009 and 2016 – rises in import prices driven by exchange-rate depreciations seem to take longer – perhaps up to 2-3 years – fully to feed through.

On the other hand, this episode is slightly different, because the imported inflation is concentrated overwhelmingly in goods prices, which tend to react faster. Quite a bit of the current rise in inflation is actually coming directly from the higher price of oil, something that is likely to fall away through the early part of 2022. (It's worth leafing back to Chart 7 to get an idea of the timing and scale of the effect.) And, as we've seen, periods of rapid price rises in other traded goods haven't just been temporary – they've often been followed by below-average rates of inflation. So, while we know it's going to go further over the next few months, I'm not convinced that the current inflation in retail goods prices should in and of itself mean higher inflation 18-24 months ahead, the horizon more relevant for monetary policy.

Of more relevance, I think, is what's happening in the domestic economy. As ever, and despite my concentration today on all the texture under the macro-economic surface, the outlook for aggregate demand growth still matters. And for all the usual reasons and more, the Committee will have to pay very close attention, parsing the official data as best it can, to the numbers in the labour market.

Thank you.