Monetary Policy and Inflation: *Are Central Banks Failing?*

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Executive Summary

This article concentrates on an analysis of the UK monetary policy operated by the Bank of England in attempting to control inflation, though some of the points made *may* have wider validity to other central banks.

The essay develops its argumentation along five broad themes across five main sections.

The **first** section looks at some empirical evidence of the success or failure of the Bank of England's monetary policy in targeting the UK inflation rate of 2%, insofar as this is able to be assessed in the absence of a detailed regression analysis, for which there is no space in this paper.

The **second** section discusses some general theoretical issue which inform central banks; approach to monetary policy and specifically inflation targeting. The section is critical of the employment of Dynamic Stochastic General Equilibrium (DSGE) models, including the latest VAR model modification to these models that still rely on modelling, however more efficiently, expectations in relation to improving the understanding of monetary transmission mechanisms.

The **third** section briefly examines three other central banks for comparison purposes, Japan, the EU and ECB, and the US, discussing their monetary policies in the context of their macroeconomic environments.

The **fourth** section reverts to the UK situation and critically analyses its current monetary, fiscal, and financial market policies, from theoretical and empirical perspectives.

The **fifth** and final main section suggests a more appropriate mix of monetary and outline fiscal policies. A main sub-section explores and recommends a shift from a monetary policy based on inflation-rate targeting to one where the target is the level of Nominal Gross Domestic Product.

The **sixth** and final section of the paper briefly sets out the principal conclusion resulting from the analysis.

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1. Introduction

In this paper we analyse key aspects of UK inflation and accompanying monetary policy followed by the Bank of England (BoE) in attempting to meet its medium-term operational target of a symmetrical 2% inflation rate. In so doing we adopt a critical view of the underlying theoretical basis of the Bank's policy approach, based as it is on moneyless Dynamic Stochastic General Equilibrium (DSGE) modelling, in which monetary impacts are treated as "frictions". In addition, we believe that in approaching the control of inflation, monetary policy should be closely linked to fiscal policy, especially when considering the distributional impacts across the population segments. The impact of unconventional monetary policy, including both Quantitative Easing (QE) and its obverse Quantitative Tightening (QT), are also considered.

More recently, though still linked to its theoretical approach, the Bank has invested in data models based on a Bayesian vector autoregression (BVAR) approach. These models attempt to improve the monitoring of the various monetary policy transmission mechanisms, hopefully to improve the empirical basis of the theoretical models. How far this may have improved the Bank's policy performance has not been indicated by the Bank.

Since the publication of the Lucas critique in 1976 (Lucas 1976), expectations, whether assumed to be rational or adaptive, have played an important role in central bank monetary policy modelling. They are often used to explain how inflation may become embedded in all economic agent behaviour. Latterly in the UK the BoE appears to be giving the narrower evidence from financial market participants expectation a substantial influence in the setting the Bank rate. Inherited from earlier Keynesian analysis the Phillips curve is still a key element in central bank thinking and monetary policy. We discuss some of the issues raised by use of these approaches.

To provide a perspective for analysing the performance of the BoE, we look briefly at the performance of other central banks, Japan, the US, and the Eurozone, all of whom use similar DSGE modelling and have similar inflation-rate targets. However, the economic circumstances, monetary transmission mechanisms, and overall policy stances within these monetary jurisdictions are different. Thus, any direct comparisons on monetary policy and empirical performance need to be qualified. Our analysis leads us to conclude that there are alternative and preferable monetary and fiscal policies to those currently being followed in the UK.

We indicate our views on both a monetary policy to be promulgated by the independent BoE and a fiscal policy that might be pursued by a putative government. It might be argued that our recommendations may be easier implemented if the BoE were not independent (technocrats often find difficulty in abandoning existing theoretical models). However, we are not recommending the removal of independence. Notwithstanding our criticisms in the paper, given the technical economic nature of the

changes we are making there is a need first for a technocratic debate on our analysis and recommendations. Moreover, the issue of independence requires a wider political debate.

1.1 Thematic Synopsis?

There are five broad themes running through this paper's analysis of the UK economy:

- The use of theoretical moneyless DSGE models by central banks, with monetary influences treated as frictions, represents an inadequate approach to devising monetary policy strategies and appropriate policy actions on interest rates.
- Monetary variables matter and should be taken into consideration, though not to return to targeting quantitative measures of money supply such as M3/M4.
- Justification of the almost 30-year period of central banks use of inflation-rate targeting is difficult on either theoretical or empirical grounds. Central bank targeting should reflect a wider approach, while seeking ongoing price stability.
- Central banks should not ignore negative distributional impacts of their policies, though the main task of remedying these impacts will be for fiscal policy action.
- Tackling inflation cannot be left to monetary policy alone, fiscal policy should have a role in managing aggregate demand and its role in stimulating economic growth.

Section 1: Bank of England Monetary Policy – Some Empirical Issues

The period 2022/23 has demonstrated the problems of inflation targeting when dealing with supply-side shocks and general criticism has been made of central banks for treating the resulting high inflation as if they are simply dealing with demand pressures and for moving too slowly to act on the emerging prospect of incipient inflation in 2021/2022.

A key issue is whether the aim of central bank monetary policy, defined as achieving price *level* stability, may not be best served by setting a low target inflation rate of 2%, albeit interpreted symmetrically. In this context, it is interesting to recall that in 1993 Alan Greenspan (Greenspan 1993) suggested that price stability obtains when "households and businesses need not factor expectations of changes in the average level of prices in their decisions".

One issue in relation to its operational perspective is that Bank's forward focus on targeting, hitherto having been defined as achieving the inflation target over a period of around 18 months has now been redefined. The time frame has recently been shifted to the vague "medium-term".

Rates of inflation vary over time and setting interest rates to achieve an inflation rate some 18 or 24 months or more ahead is an almost impossible task. Moreover, there may be periods where inflation stays persistently below the target rate, as has

happened over the recent past, even though both nominal and real interest rates were near zero (or even negative in the case of the ECB). Over the past decade when inflation rates were low there was a failed attempt to achieve the 2% target without any consistency of the interest rate movements. This inconsistency was, of course, less noticeable given the long period of subdued inflation, linked also to the fiscal consolidation observed during the Osborne era from 2010.

If we look at average Bank rates over the period 1994 to 2023 there is, as one might expect, far greater variation (see Table 1). However, the pattern of variation appears not to be consistent with the Bank's assertions of interest manipulation achieving the *medium-term* target inflation rate. The CPIH chart (Figure 1) shows considerable variation in inflation over an overlapping period, ignoring the extrapolation to 2028.

Table 1 Average Bank rates, UK

Year	Average Bank Rates	Year	Average Bank Rates
1994	5.63	2009	1.00
1995	6.50	2010	1.00
1996	5.95	2011	1.00
1997	6.80	2012	1.00
1998	7.00	2013	1.00
1999	5.375	2014	1.00
2000	5.90	2015	1.00
2001	5.10	2016	0.25
2002	4.00	2017	0.50
2003	3.65	2018	0.75
2004	4.45	2019	0.75
2005	4.50	2020	0.175
2006	4.85	2021	0.25
2007	5.50	2022	1.75
2008	5.00	2023	4.125

Source: Bank of England

Figure 1 CPIH Annual rate, 1989 – 2023

Source: Statistica 2003 (World Bank)

By inspection a correlation between the Bank's interest setting and the inflation rates some two years ahead is not obvious. Although one would need a full regression analysis to assess whether, with the appropriate time lags assumed, the proposition

that the periodic adjustment in nominal bank rates set by policy decisions can be confirmed as directly controlling inflation rates.

Criticism of inflation rate targeting might to some suggest a return to using the level or rate of growth of one of the measures of the supply of money, either M3 or M4, as one of the target variables for the Bank. Indeed, in the early years of the ECB (and until 1994 for the BoE) M3/M4 were used as an accompanying target variable. However, there appeared to be limited evidence for empirical validation of the efficacy of using M3 or M4 and the use of these monetary aggregates in a direct monetarist manner was discontinued. We do not dissent from this position. However, this does not imply that the supply of money does not matter. We will discuss subsequently, in Sections 4 and 5, the issue of how better to deal with the money market impacts on inflation policy.

Section 2: General Theoretical Issues

2.1 The Failure of General Equilibrium Models

We suggest that part of the reason for central banks having a major problem of how to deal with inflationary supply shocks has to do with the use over the 30 years of the general equilibrium economic models used by central banks[1]. A good summary of all applied models is presented by the ECB (2021) in a review of macroeconomic modelling in the Eurosystem. A trenchant post-Keynesian criticism of DSGE models may be found in (Storm 2021).

In theory, central banks regard inflation as essentially an economic equilibrium phenomenon generated by the persistence of a level of aggregate demand above the level of aggregate supply. This position appears inadequate. The problem is that in a dynamic economy these macroeconomic quantities are each difficult to estimate with any degree of certainty and they are inter-related and interact with each other in a complex manner. Moreover, the equilibrium models used by central banks effectively ignore the dynamics of money supply and demand. Money supply and demand are regarded as either being in equilibrium or about to come into equilibrium.

Central banks use DSGE models to analyse the economies within the monetary jurisdictions they cover. These models do not directly include money, rather do they deal only with real variables. Money is treated as friction in these non-monetary models. Instead, all product markets are assumed to have future markets which enable them to clear in long-run equilibrium. This clearance cannot be achieved by the setting in a central bank *nominal* interest rate because there is no nominal rate in the model. The set of commodity rates in the model is simply another way of presenting the set of commodity prices. Notwithstanding this position the BoE states that "Monetary policy acts as the ultimate limit on money creation" (McLeay et al 2014).

Part of the problem that all central banks face stems from over-reliance on structured general equilibrium modelling approaches to developing policy and the use of non-

observable, calculated constructs such as the output-gap, NAIRU, the natural rate of unemployment, and the neutral rate of interest (R*). As we suggest below there is another less tendentious approach, both to modelling and to policy development[2].

Latterly, a speech by Phillip Lane, ECB Chief Economist (Lane 2023a) where he explained that central banks have amended and supplemented their DSGE models by other types of models. These include several Bayesian VAR (BVAR) models which are now regularly used for forecasting and policy analysis by major central banks and international institutions. BVAR models provide a useful benchmark to evaluate structural and semi-structural DSGE models both in terms of their forecasting performance and issues related to monetary policy transmission mechanisms.

The aim of these supplementary models is to attempt to determine with more precision the forward-looking behaviour of identifiable economic agents. And hence a clearer perception of the expectations channels, assumed by the central banks to fulfil their policy targeting. Whether these model sophistications will render central bank inflation targeting more effective remains to be seen.

In 2018, the ECB searched for alternative policy strategies the focus is on a class of policy rules that belong to “makeup” strategies – asymmetric inflation targeting. Within these strategies, they considered average inflation (AI), price level targeting (PLT) and nominal GDP targeting (nGDPT). The ECB researchers concluded that makeup strategies perform better than inflation targeting when there are simple policy rules. However, when they optimise the value of the response coefficients in the policy rules, the differences in performance regarding the inflation targeting and makeup strategies are greatly reduced in practice. Moreover, the alternative strategies rely critically on the credibility of the central bank (Mazelis et al 2023). While we do not differ with this conclusion about the importance of credibility of the central bank, we will argue in section 5 that NGDP-level targeting *enhances* the credibility of the central bank and better represents how the public views economic policy. We will suggest that NGDP-level should be a target rather than the 2% inflation-rate target.

Section 3: Central Bank Monetary Policy – Comparative Approaches

Before returning to the UK situation, it may be instructive to look briefly at the recent, and contrasting, monetary policy approaches of Japan, the US, and the ECB. The intention is not to provide a critique of the monetary policies of these jurisdictions, but to provide a comparative basis for the critique of the UK’s monetary policy, notwithstanding the obvious differences in the economic and monetary environments and hence the qualifications to be applied.

3.1 Japan

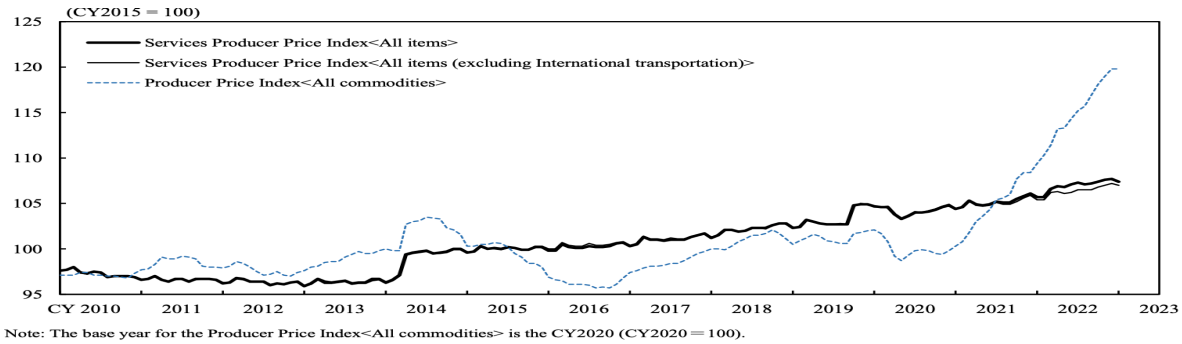
Large scale QE programmes had been standard practice in Japan for a long time (Bojkova 2015). It goes back to the early 2000 when Japanese banks had cleared off ϒ60,000 billions of bad loans and had ϒ40,000 – 80,000 billion more to clear as a result of the property bubble burst in 1991. The crisis had exposed a weak financial sector in Japan at a time when financial markets in the UK and US were already liberalised and open. At the same time the Japanese industrial sector was contracting from 40% of GDP in 1991 to 30% in 1998. Though this still left massive domestic oversupply of industrial production which led large Japanese corporations to heavily increased their exports and overseas affiliated offices.

In early 2013, the Abe administration launched a policy package "Abenomics", which focused on monetary, fiscal and structural reforms. The so-called three arrows, aiming to stimulate the economy and turn the deflationary expectations into inflationary[3]. Meanwhile, the Bank of Japan (BOJ) has conducted various quantitative easing programmes and shifted to a qualitative and quantitative mechanism. In 2016, the BoJ switched to the so-called Yield Curve Control (YCC). This was a necessary step as permanent QE had led the BoJ to own more than 50% of the Japanese Government Bonds (JGBs). Any continuation of the same would have altered the functioning of the bond market due to the crowding-out effect, and indeed, analysts observed days of no trade in the JGB market by private institutions before 2016.

To be able to keep the 10-year yields low, the BoJ moved from targeting a certain quantity of bonds to buy (QE) to a qualitative measure (YCC). It really succeeded as between 2016 and 2022, 10-year JGBs traded between (-25) and (+25) bps as the authorities wished. In December 2022, the BoJ announced that 10-year JGBs could trade between (-50) and (+50) bps, hence widening the band for YCC. Despite its bond market success, there were critics of this massive stimulus programme that was judged to have distorted market functions and triggering, as a side effect, an exchange rate appreciation that pushed-up the cost of raw material imports.

Overall, core inflation has been rising in Japan and is expected to be stable around 2% in 2023. The consumption activity of households shows small fluctuations and depends heavily on households' level of confidence in their expected income (Bank of Japan 2023). In addition, the Producer price index appears to be stable. The Service producer price index rose by 1,6% in January 2023 from the previous year with the largest contribution to this increase from machinery repair and maintenance; hotel and travelling, laundry services, transportation and postal activities; leasing and rental (Figure 2).

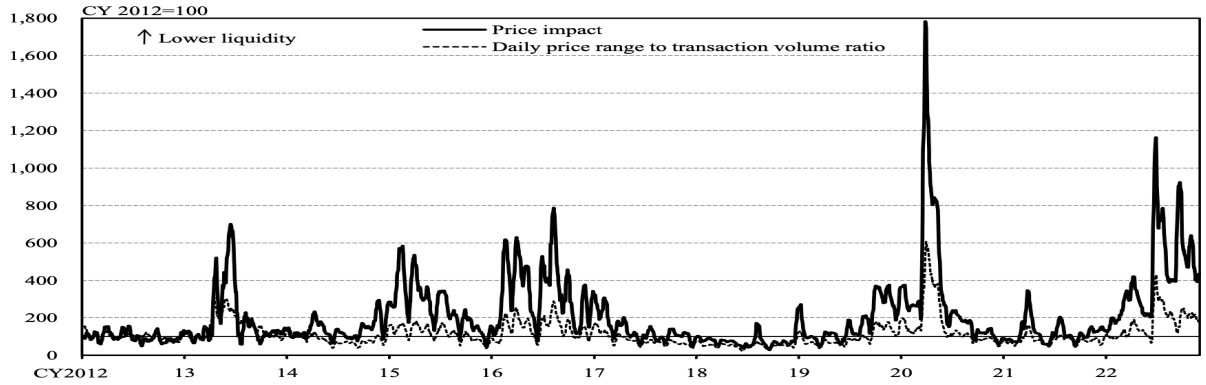
Figure 2: Services Producer Price Index, 2010 - 2023



Source: Bank of Japan, Monthly report on the services producer price index, 22nd February 2023

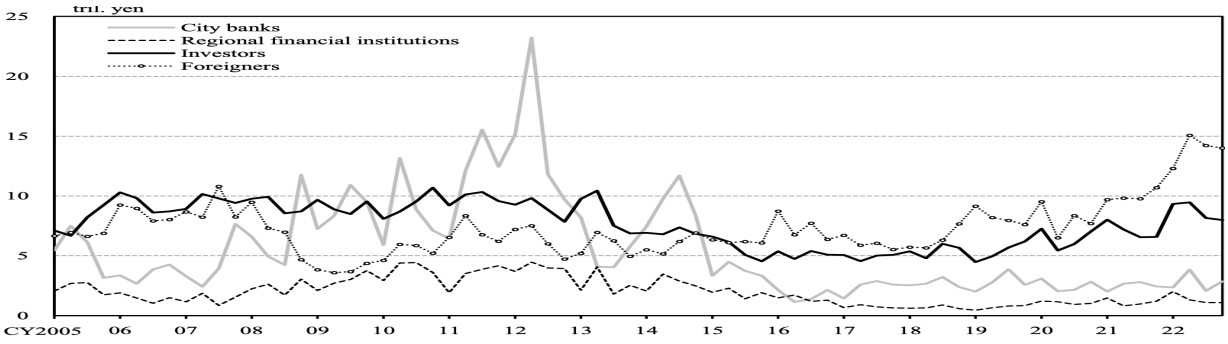
A new monetary regime and a new governor of the Bank was expected in Japan in 2023 (see below) and this had positive effects on the JGB market in 2022. The fixed income investors priced hikes of 35 bps in 2023 and the volatility tripled since the beginning of 2022. Japanese investors are positively rewarded for keeping their cash at home in periods of high macro uncertainty. The price impact (Figure 3) demonstrates the daily price range, and the market is characterised by high volatility.

Figure 3 Price Impact, 2012 - 2023



Source: Nikkei Inc., Osaka Exchange, Inc.

Figure 4 JGB purchases with an increased interest by foreigners, 2005 - 2023



Source: Japan Securities Dealers Association

Interestingly, there is huge interest from foreign investors in purchasing JGBs. Figure 4 shows the gross amount purchased by clients (banks, investors, foreigners, and regional institutions). Some institutions such as government, BoJ, Japan Post Bank,

Japan Post insurance, business corporations, etc. are excluded from the data. In fact, foreigners were stimulated to buy JGBs with a weak yen.

When one of the largest capital exporters in the world such as Japan (in contrast to the UK position) decides to reward domestic savings with a higher risk-free rate determined by the monetary policy's decisions, this affects the outflow of capital from the country, strengthens the currency and negatively hurts foreign assets of Japanese corporations, but would have significant impact on keeping capital inside the country and stimulated the growth in times of high inflation driven mainly by global factors.

Policy normalisation in July 2023 or after may lead to a slow increase in the interest rate from 0.50% to 0.75% because of inflation exceeding 2%. Moreover, the BOJ has stayed as an outlier in the speedy hikes of rates by other central banks for the last year and a half. As a consequence of this normalisation, the decline in interest rate differentials and increased exchange rate volatility could potentially reduce the attractiveness of carry trades by investors and lead to wider term premiums on local government bonds in Japan, which will affect the bond markets elsewhere.

A New Governor and a Policy Review

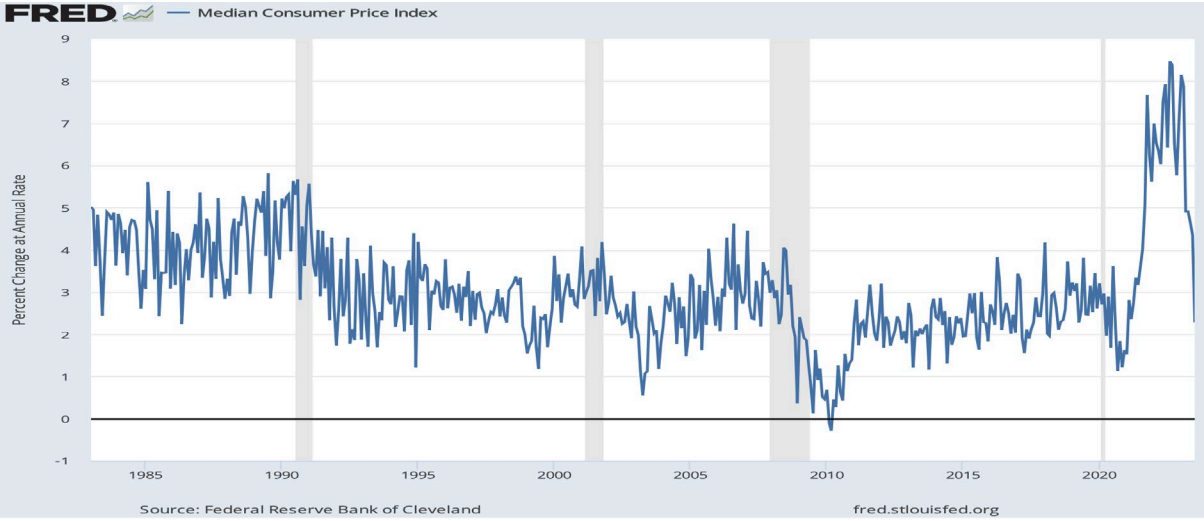
The new Governor Mr. Kazuo Ueda entered the office in April 2023 as discussed above in a very different macroeconomic environment from the times of Mr. Kuroda – higher inflation and wage growth in the country, and monetary contractions in Europe and the US. During his first Diet hearing, the new governor emphasised the challenge of achieving the price stability target. He promised to continue with the monetary easing, if necessary, and then will normalise if a clear path towards the inflation target is seen. However, it is unlikely that the current policy framework will be maintained as it stands and the Bank announced on 28 April a broad perspective review, which is expected to last for about 12 to 18 months. The Governor is determined to make gradual changes in policy toward normalisation. Such a shift, according to the ECB, may test the resilience of global bond markets[4], particularly the eurozone bonds.

As a first step, BoJ have already modified its forward guidance on the future policy path and removed a pledge to maintain interest rates at "current or lower levels". Another difference noted by the analysts is that the new governor has his way of communication with more media reports appearing before the policy meeting to avoid any surprises and gradually promulgate the planned changes to the market actors.

3.2 The US

In January, the FED's median CPI increased at an 8.1% annual rate (Figure 5), while the 16% Trimmed mean increased at 7% annual rate[5]. There was a decline in October and November 2022, and then both picked up in December and January 2023, since the economy and labour market still operated above their capacities.

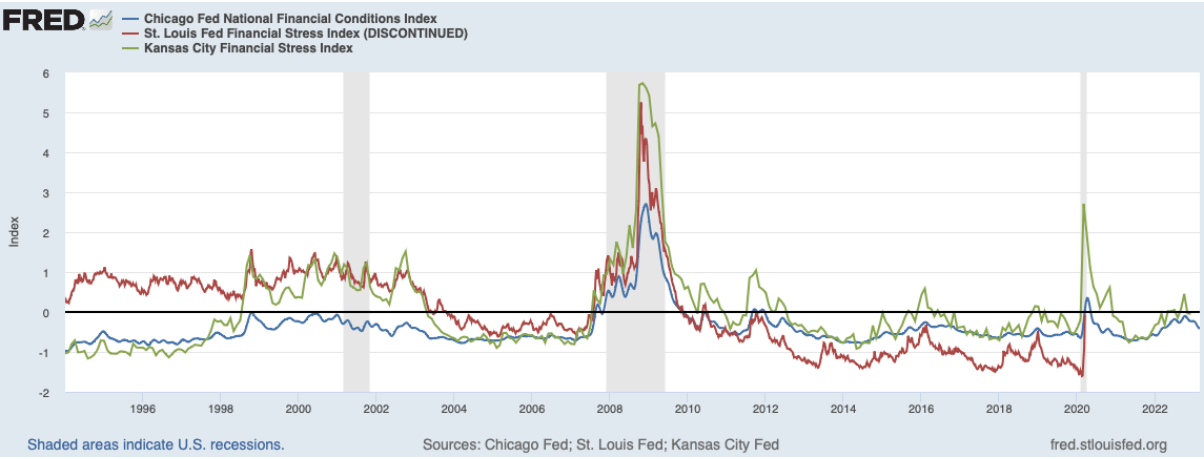
Figure 5 Median Consumer Price Index, 2013 - 2023



Source: www.fred.stlouisfed.org (Accessed on 22nd August 2023; Updated on 10th August; Latest observation: Jul 2023)

Additionally, the financial conditions – narrowly and broadly defined – are not yet tight enough to achieve the necessary rebalancing of the US economy (see Figure 6). The dilemma for the FED is to gauge how tight the policy stance should be and for how long it should be imposed in order to achieve a rate consistent with long-term price stability.

Figure 6 Financial Stress Indexes, 1994 - 2023



Source: : www.fred.stlouisfed.org (Accessed on 28th February 2023)

The level of stress that exists in the US financial sector is indicated in Figure 6 which shows three series from different regional Federal Reserve Banks. Two of them present a steady situation in the US in terms of financial stress (the third one was discontinued in 2020). Indexes are closer to 0 at the end of February 2023. So, it seems the liquidity was more than sufficient.

Despite the overall positivity of the financial markets in early 2023, three bank failures were observed in March – the Silicon Valley Bank, Signature Bank and First Republic. It appeared that the increase in federal funds rate caused some stress to certain

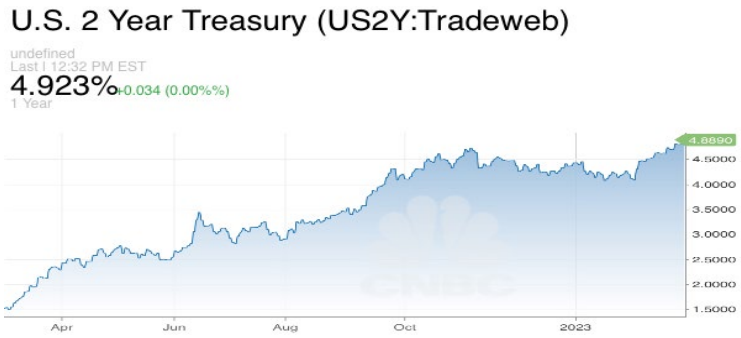
business models and individual banks were having financial difficulties. Between March and 2nd of May, the US regulators shut down and sold these three mid-sized banks[6]. Central banks responded to the temporary banking crisis with measures to make extra cash available so that financial transactions continued as normal.

Bonds Market

As for the bond markets, the front end of the yield curve has repriced after the January labour market report and the 2-year yields rose 50bps at 4.699% (on 22nd February) from the beginning of February. This increase may continue reflecting the expectations of the fixed income investors for more inflation, and the federal funds rate may have to be lifted a few more times.

In March 2023, the rising of the 2-year yield continued by 100bps from the levels in January (see Figure 7). Oppositely, on May 10th, the 2-year yield was 4.047%, which is a fall from the high levels in March. The yield readjusted even further down with the release of the new key inflation data in May. The CPI's increase in April was less than initially feared. The CPI was 4.9%, as the food index was unchanged in April and March. The index for food at home fell 0.2% over the month while the index for food away from home rose 0.4%. Indexes which increased in April include shelter, used cars and trucks, motor vehicle insurance, recreation, household furnishing and operations, and personal care. The index for airline fares and new vehicles were among those that decreased (US Bureau of Labour Statistics 2023).

Figure 7 2-year Treasury yield (March)



Source: CNBC, Latest observation: 2nd March 2023

Figure 8 Yield Curve (March)

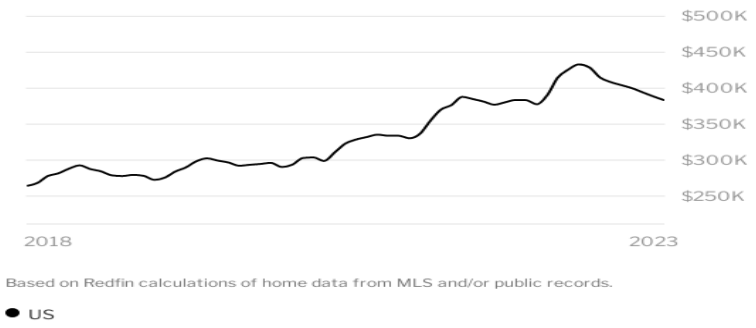
Bond / Yield Change (Source: CNBC, Latest observation: 2nd March 2023)

In March, the yield curve was lifted even further from the level in February. The front end of the curve has been repriced up by 20% while in February it was only up by 11% (see Figure 8).

Housing Market

In addition, if one looks at the housing market, home prices in the US in March 2023 remained 8.1% higher than the previous year, together with higher mortgage rates (more than 250 bps in the same time-period) means that buyers still pay much more for a home than a year prior. The median existing home sales price was up 1.3% to US$359,000 in January compared to a year ago. However, the increase was at a slower pace compared to December 2022. Mortgage rates increased across all loan types with the 30-year fixed rate jumping 23 bps to 6.62%. Home sales dropped 0.7% from December to January, marking the 12th consecutive month of declining sales and down 36.9% from a year ago. The market is expected to cool during 2023 with some home prices to gain and others to decline depending on the region.

Figure 9 US Median Sales Price, 2018 - 2023



Source: REDFIN (Accessed on 20th March 2023)

Overall, all these indicators demonstrate that US markets are not rebalanced yet, and more increases of the federal funds rate may be likely to take place during the second half of this year, but a pause in June is expected after the release of the key inflationary

data in May 2023. The Federal funds rate are in the target range of 5.0-5.25% and the unemployment rate is at 3.4% indicated as the lowest level since 1969. The wage growth is 4.4% from a year ago, which is higher than expected, and the demand-supply imbalance of labour has not been corrected yet.

In the forward guidance of the Federal Open Market Committee in May is emphasised the fact that the Fed would take into consideration the cumulative tightening of monetary policy, the lags with which the effects are channelled into the economic activity and inflation, and the banking and financial developments. Tighter credit conditions for households and businesses would weigh on economy, hiring and inflation. Policymakers assess the actual data and financial conditions to decide about the interest rate hikes, although the path ahead is less clear as the growth is slowing.

3.3 The EU and ECB

In Europe, there are a few inflationary factors that influence the economic situation:

1. Geopolitical frictions and likely fragmentations in long-run
2. A current fundamental change in the macroeconomic environment
3. Energy crisis and a transition to renewable sources

The entry of China in the global economy 30 years ago was a major disinflationary factor that in case of trade blocs disentanglement (BRICS, EU, NAFTA, ASEAN, MERCOSUR, etc.) could reverse the situation in the mid to long run. In theory, fragmentation could also give higher pricing power to companies and push up inflation. Recently, the geopolitical frictions had stronger effects in Europe due to the proximity to the military actions, and the HICP for food is relatively high. The index for “food and beverages” was at 17.5% annual change by March 2023. The average expected inflation for April was estimated at 7% for the whole of the EU, which was still much higher than the inflation rate of the US (4.9%) and Japan (3.5%).

In line with the inflation data, the ECB began tightening the monetary policy in December 2021 by reducing the pace of net asset purchases, with net purchases under the Pandemic Emergency Purchase Programme (PEPP) and the Asset Purchase Programme (APP) ending in 2022. Then the ECB’s key policy rates were increased by a total of 375 basis points from July 2022 to May 2023. To assess the impact of monetary policy on the real economy, the ECB applies a set of modelling techniques – two structural DSGE models (NAWM II[7] and MMR[8]) and a large-scale semi-structural model (ECB-BASE[9]) – this combination of models came because of the conclusions and recommendations of the ECB’s monetary policy strategy review.

The results in the ECB Economic Bulletin from May 2023 (EU 2023b) show that the monetary restrictive policy can be expected to have downward pressure on real activity and inflation over the next two years 2023-2025 (Darracq-Paries et al, 2023).

The second factor is associated with the financial sector due to the long period of very low interest rates and the hiking cycle that we are now in – this is a major shift in the macroeconomic fundamentals. Rising interest rates affect funding costs and asset prices, which leads to higher expenses for the banking and non-banking sectors. Households and firms obtain loans at tighter lending standards, and the volume of loans has been in decline since mid-2022. Higher mortgage rates in the Euro area led to lower house prices in Germany, France, the Netherlands while in Italy, Estonia the house markets still maintain the prices unchanged.

Figure 10 Equity prices (Index levels, Jan 2022 = 100)

Source: Bloomberg, ECB calculations

Some weaknesses of individual banks' models in the US were already exposed, and the banking sector in Europe appears resilient since financial stress tests are much stricter in the EU (see equity prices in Figure10).

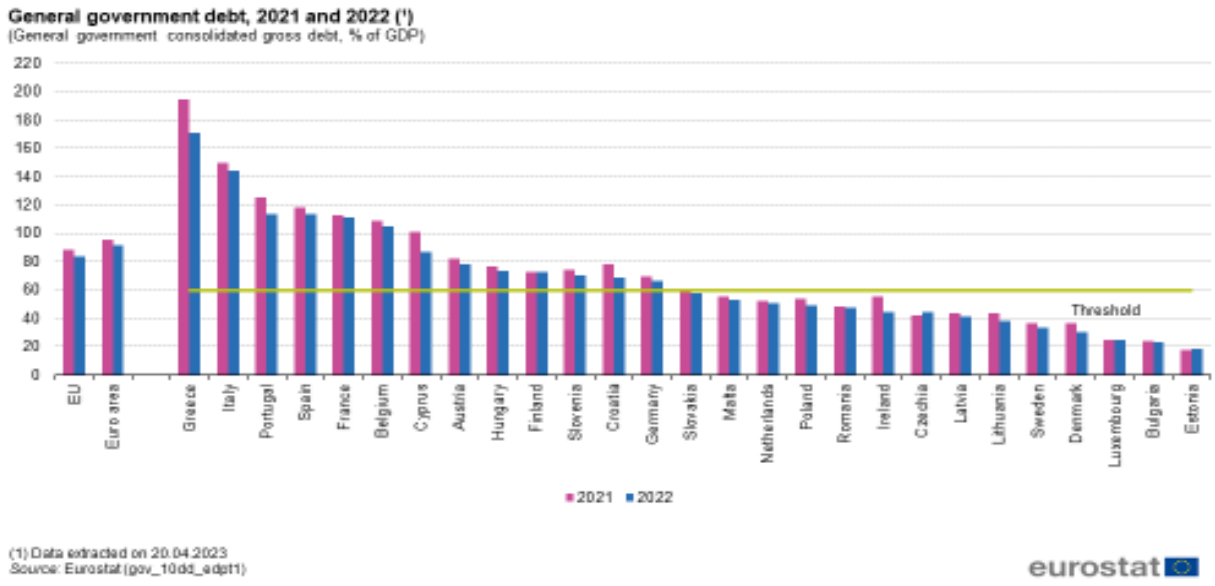
One disadvantage of the European banking sector is the lack of a European deposits guarantee fund, hence in case of a bank-run, national governments have the responsibility to cover customers' deposits and ensure the financial stability[10]. This could mean a potential increase in the individual member-states' public debt, which is fairly high and does not provide much room for manoeuvring.

Figure 11 presents the consolidated gross debt in 2021 and 2022 from Eurostat statistics. In 2022, the government debt-to-GDP ratio varied between 18,4% in Estonia and 171,3% in Greece. The countries that are below the 60% threshold are Slovakia, Malta, Netherlands, Poland, Romania, Ireland, Czechia, Latvia, Lithuania, Sweden, Denmark, Luxembourg, Bulgaria, and Estonia. The rest of the EU members have ratios beyond the 60% requirement (the Maastricht Treaty).

If one looks at the bond markets and spreads, which are measured against the German benchmark for just a few key members and the EU Next Gen, Italy's yield deviates the most, and Greece's one even more, though not presented in Table 2, but it is well known that Spain, Portugal, Italy, and Greece are the members with the highest ratios of debt-to-GDP (presented in Figure 11). Naturally, the risk for the bond

holders of these countries' debt is with a higher premium and always exceeds the benchmark. However, the 2-year yields in Europe show relative calmness in terms of inflation expectations and the expected mid-term inflation to be closer to 2% in 2025.

Figure 11 Government consolidated gross debt (% of GDP)



Source: Eurostat, Data extracted on 20th April 2023 (Accessed on 7th May 2023)

Table 2 European 2-year bond yields and spreads (12th May 2023 before closing day)

Country	*Yield*	*Spread*	*Close*	*Change*
Germany (2.8% - 12 Jun 2025)	**2.57**	**-**	**2.51**	**0.06**
EU Next Gen (0.8% 04 Jul 2025)	**2.95**	**+39**	**2.91**	**0.04**
France (0% 25 Feb 2025)	**2.76**	**+19**	**2.71**	**0.05**
Belgium (0.8% 22 Jun 2025)	**2.65**	**+8**	**2.59**	**0.06**
Italy (2.5% 1 Dec 2024	**3.28**	**+72**	**3.25**	**0.04**
Spain (0% 31 May 2025)	**2.90**	**+33**	**2.85**	**0.05**

Source: https://www.mtsmarkets.com/european-bond-spreads Latest observation: 12/05/2023

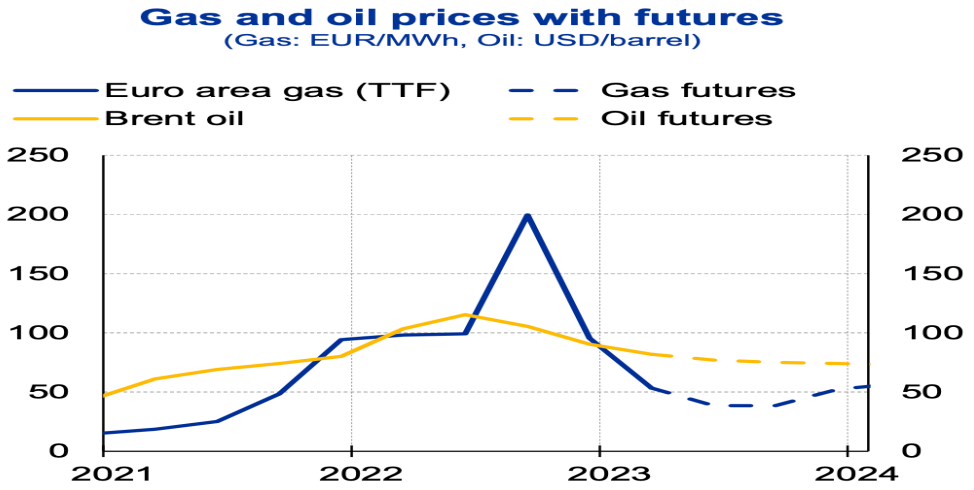
Financial stability is of course important for the price stability, and the ECB can't ignore any banking issues if they suddenly appear, similarly to the US, in the current high interest rates macroeconomic environment.

The third major inflationary factor in Europe is the energy crisis and green transitioning, which the EU aims to lead globally for the next decades. In the past, the Council of the European Union published broad guidelines for the economic policies of the member states ensuring affordable, secure, and sustainable energy (EU 2020).

The current replacement of fossil fuel energy with renewable energy from solar, wind and biomass, is extensively supported by state subsidies to reduce the wholesale prices while at the same time the gas and oil prices have been naturally declining since mid-2022 (Figure 12). The HICP for energy was at 4.6% annual change by March

2023. The inflation in the EU remains high for all components of the consumption basket except for energy and this signals *more hikes in the interest rates to come.*

Figure 12 Prices with futures, 2021 – 2024 (Latest observation: 5/05/2023)

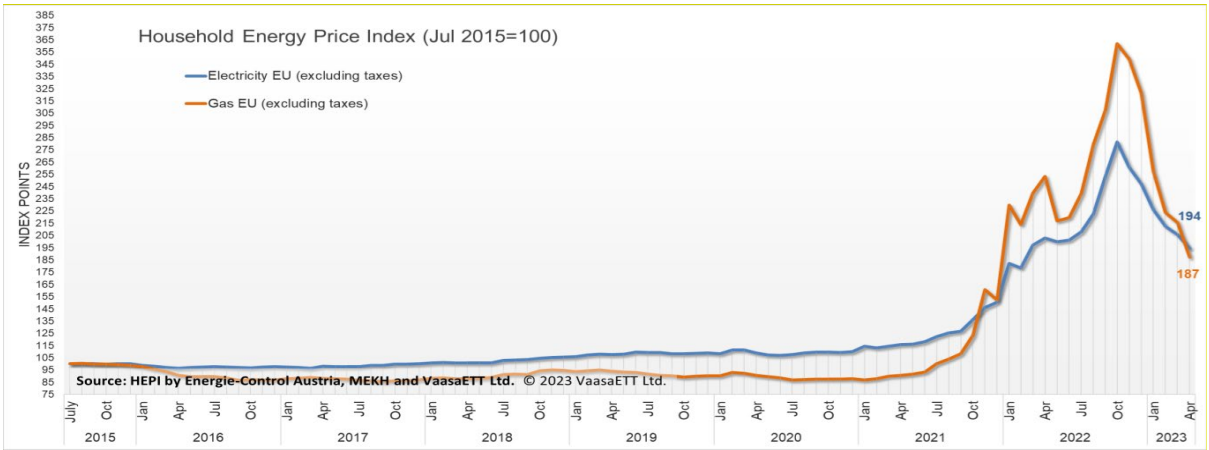


Source: Refinitiv, Bloomberg and ECB calculations

The production of nuclear power has completely ceased in Germany this year while in other member-states the nuclear reactors have been renewed. Also, the carbon prices on the EU Emission Trading System surged to EUR 100 (€/tonne) in early 2023, which has an impact on the wholesale energy markets.

In more detail, the electricity bills in all European capitals decreased by 2% in April 2023 and the gas bills decreased by 9%. Both indices in Figure 13 have declined since their pick in mid-2022. Moreover, Figure 14 shows the residential electricity prices, and it appears that London and Dublin are the most expensive cities for household customers in Europe, followed by Rome, Prague, and Berlin. In nominal terms, prices in the capital cities of CEE tend to be lower than the average. Prague, Riga, and Vilnius are the only capitals in Eastern Europe with higher electricity prices.

Figure 13 Household energy price index (excluding taxes) in the EU (Jul 2015 = 100)

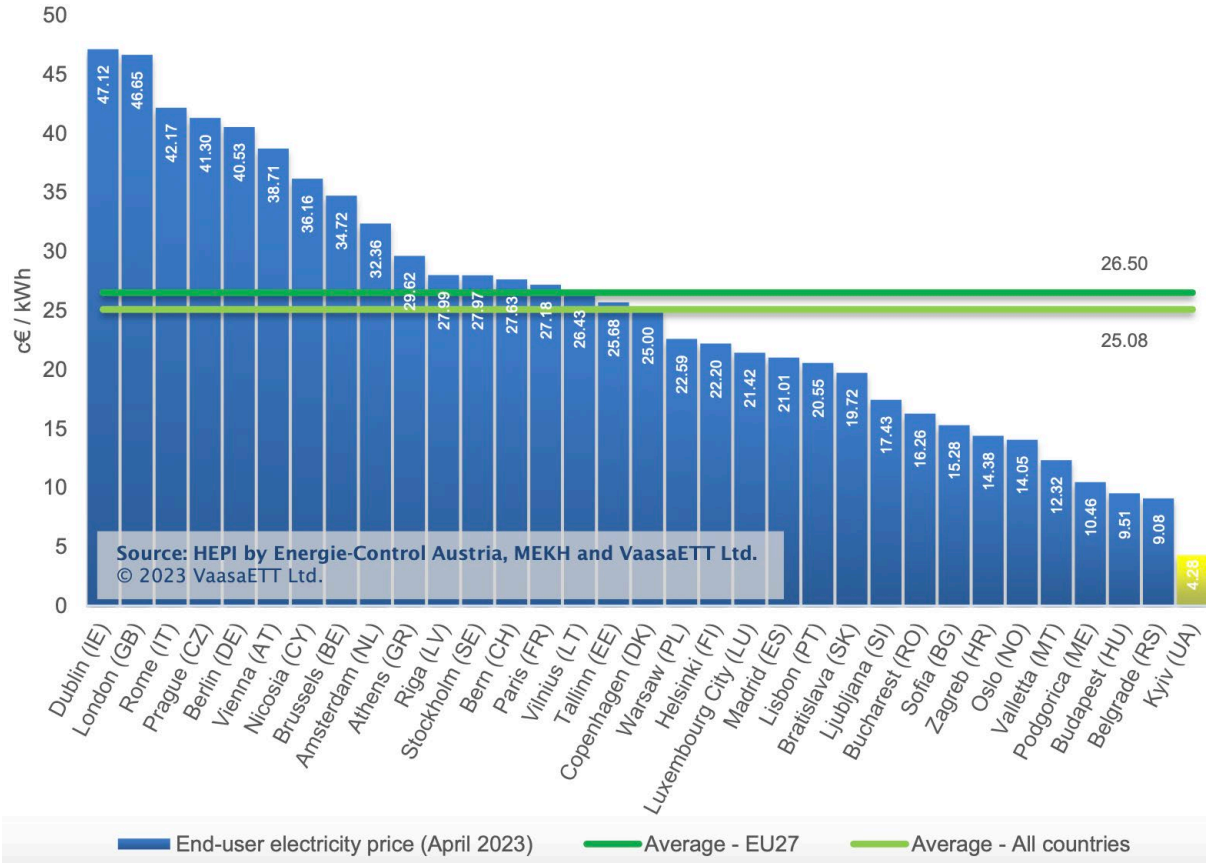


Source: www.energypriceindex.com

April was the sixth consecutive month that a wholesale reduction in prices took place. The decrease can mainly be imputed to the suppliers' decision to issue new, lower

tariffs, as a result of the overall drop in wholesale prices. Reasons vary, ranging from the mild winter conditions to the increased energy output due to the commissioning of new nuclear power units, but also higher output of wind energy in North Europe.

Figure 14 Residential electricity prices including taxes



Source: www.energypriceindex.com

And a very important reason for the price decrease is the resumption of support measures from EU member states with the objective of mitigating side effects of the energy crisis on retail prices and household bills. For instance, customers in Amsterdam pay zero energy tax due to the increased amount of tax credit, which exceeds the fixed energy tax amount. The aim of this refund is to encourage citizens towards electrification and switching away from gas heating and appliances.

The renewable energy transition varies from region to region, and sector to sector. However, this transition is expected to affect 35-40% of existing jobs in Europe by 2030[11]. The EU has strong labour markets with picking-up nominal wages at the moment and an unemployment rate of 6.0%[12] in March, but to sustain this trend employee skills will have to be constantly retrained and upgraded as well as enhancing new labour skills for the climate neutral economy.

3.4 Similarities and Differences

For comparison purposes, the policies followed by the three above monetary jurisdictions, indicated in the analyses above, may be contrasted with the UK. We start with Japan as perhaps in some ways the most interesting comparison with the UK.

The economic size difference between the US and the UK renders comparisons difficult and the fact that the Eurozone is a complex, multi-country monetary jurisdiction also complicates comparisons with the UK.

Japan and the UK

Japan is of especial interest as it has pursued unconventional monetary policies, QE and yield curve control, for the longest period, to either with an expansionist fiscal policy, notwithstanding a brief period of fiscal consolidation. Inevitably this has led to an increase in the debt-to-GDP ratio, increasing over the past 30 years from 60% to 240%. To an extent this has been sustainable by virtue of a low risk-premium sensitivity to increasing the debt-to-GDP ratio, enabled by a high and stable domestic sovereign bond investor base. Foreign bond investment has increased but is still only around 13%. This position may be contrasted with the UK with some 30% held by foreign investors, which partly explain the reluctance of the UK government to increase net public debt.

In Japan a key policy variable is the differential between the nominal interest rate and nominal GDP growth rate (R-G). During the 1990s the differential was positive as a result of an increase in net public debt due to the banking crisis and subsequent increase in government expenditures. During the Abe administration and due to the Abe package of “three arrows”, the differential was negative as the nominal interest rates were at the low bound, and so enabling the debt-to-GDP ratio to stabilise. This ratio is an indication that nominal GDP is a target variable in Japan. The point here is not that Japan is following what we recommend in terms of targeting Nominal GDP (see Page 41), but simply that they are using nominal rather than real values of targeted variables. It should be noted that the UK uses the same R-G relationship to measure the sensitivity of the debt-to-GDP ratio position (OBR 2023).

A further difference between the UK and Japan is that in Japan both fiscal and monetary policies are predicated on contemporary perceptions of long-run anticipated growth prospects (Mauro et al 2013) and will effectively be coordinated. Of course, it may be argued that the economic experience of Japan has been that of deflation/disinflation, whereas the experience of the UK has been that of periods of strong inflation and modest growth.

This contrast may account for the Japanese government’s recently stated position on economic policy[13] that: "The government hopes the Bank of Japan achieves its 2% inflation target in a stable, sustained fashion accompanied by wage growth." However, the BoJ estimates that there is a negative output gap and that despite rising wage growth it is not sufficient to sustainably achieve 2% inflation. There is here an awareness of the dangers of financial instability of the accompanying reduction in liquidity.

On the other hand, the UK government position is that its fiscal policy is fully supportive of the policy of the BoE to continue with increasing interest rates to “squeeze inflation out of the economy” and wants to see reduced wage growth. Certainly, there appears

to be a government intention not to increase public spending beyond that which is deemed to be absolutely necessary for specific political reasons. A further inhibiting factor is the UK has now reached a net public debt to GDP level of just over 100%!

The June increase of 50 basic points by the BoE appears to be based on a) near panic about the recent high April and May core inflation figures (see below), b) an acceptance of the financial market consensus of the need for a significant increase, and c) a belief in a *lasting* wage-price spiral (embedded inflation) against the historical evidence of an IMF analysis (Angelini et al 2022).

It is worth noting that, contrary to an assumption made by many commentators, wage growth per se does not necessarily lead to inflation if it leads to increased productivity and economic growth by stimulating labour-saving capital investment at the same time as increasing aggregate demand.

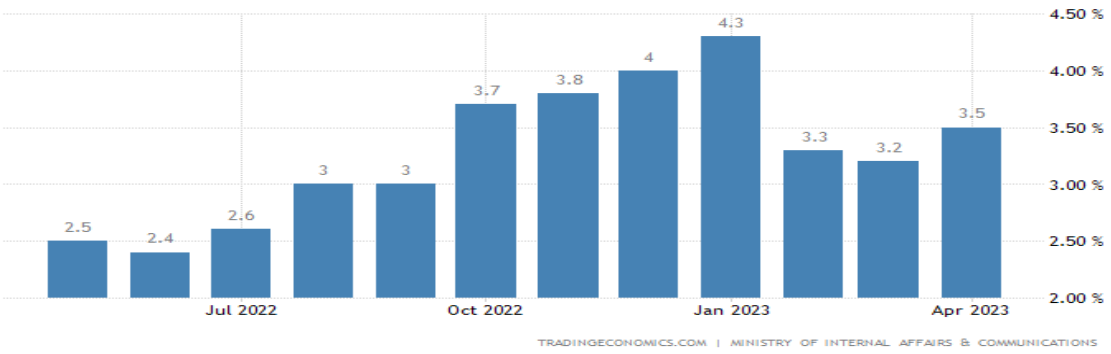
As already indicated above the historical inflation related economic experiences of UK and Japan are very different. Nonetheless, over the past 12 years there is a similarity of experience in having a decade of slow growth, pandemic and global supply chain issues, and an energy supply shock resulting from the Ukrainian conflict that have led to inflationary pressures.

The *differences* have been in the policy reactions in the two countries. In the case of the UK, with comparatively higher average headline inflation, especially in relation to food prices (partly related to Brexit), and also core inflation (Figure 16), sharp and sustained interest increases have occurred. In Japan this has not happened, at least not yet.

The UK financial market situation has also been marked by problems in the sovereign bond market, affecting negatively both the government budget primary balance and the private sector, including the mortgage markets. The problems for the sovereign bond market are covered in section 4.4 UK Fiscal policy, though as indicated above these problems contrast with the strong, stable domestic sovereign bond market in Japan.

Core inflation in Japan is lower on average than in the UK, though it peaked in January 2023. However, it has since fallen, except for a slight of 0.3%-point increase between March and April (Figure 15).

Figure 15 Core inflation, Japan (April 2023)



Source: www.tradingeconomics.com

Core inflation in the UK is higher at 7.1% in May 2023, up from 5.8% in January 2023, with a 0.3%-point increase between April and May (Figure 16). The anomalous high core inflation rises during April and May in the UK could be related to the increased impact of the value of imported services as the dampening effect of Covid begins to unwind[14].

Figure 16 Core inflation, UK (May 2023)

Source: www.tradingeconomics.com

There are various domestic *structural* factors that may contribute to this discrepancy between the two counties in terms of the average level of core inflation, but here we will mention only two of them:

First, the differences between the two countries in respect of the proportion of services in each of the economies, in respect of GVA[15] and of employment. In the UK, services represent 79% of GVA whereas in Japan the figure is 75%. Taking this figure and comparing the respective figures for services employment, we find for the UK the percentage is 83% and in Japan the corresponding percentage is 73%. There are two implications: **first**, that the higher level of services in the UK may partly account for a likely slower fall in services inflation and **second**, that the inflation situation will be exacerbated by the apparently lower productivity in the services sector.

Second, though both economies are relatively open economies, the UK is substantially more open than the Japanese economy. In Japan the proportion of GDP taken by external trade is 37% whereas in the UK the proportion is

57%. This means that though both are exposed to the US$ exchange rate the sensitivity of the UK is far greater. It is also the case that a US$/Yen exchange rate is well below 150, which helps the economy avoid importing inflation[16]. It is unclear whether the BoE has an informal target exchange rate in relation to the US dollar, although that is officially denied.

Finally, in its review of Japan's monetary policy (IMF 2023) comments, interestingly, that:

> It would be interesting to study an explicit interaction between fiscal and monetary policy. Specific topics of interest include fiscal space in a low interest rate environment, the link between price stability and fiscal credibility, or fiscal consequences when there is an uncertainty in interest rate movement (such as when policy makers face a situation with inflation and employment moving in different directions). Further, in addition to the discretional fiscal response, the optimal design of automatic stabilizers is a promising avenue for consideration.

In our paper, it is an implicit assumption - not simply because the experience of Japan suggests such – that monetary and fiscal policy need to be more overtly integrated, rather than the current rigid division of labour. Economic history and the current conjuncture in the UK both confirm the necessity of such an analytical approach to dealing with inflation in the UK. We discuss the issue in Section 4.

The US and the UK

The US presents an interesting comparison with the UK, perhaps principally because of the tendency of the BoE to closely follow the US interest rate trajectories, notwithstanding the considerable differences between the two monetary jurisdictions. Part of the reason for the affinity may be because of the need for the sterling/dollar rate to stay within a reasonable range, even though maintain a specific exchange rate is not a formal objective of the policy remit of the BoE. The recent pattern of the evolution of US core inflation is shown in Figure 17.

Figure 17 Core inflation, US (May 2023)

Source: www.tradingeconomics.com

The pattern of the evolution of US core inflation over the past six months is quite different from that of the UK. However, in August and September 2022 the rates were very similar at around 6.5%. It is the contrast between the steady decline to the May figure of 5.3% in the US and the increase to 7.1% in the UK.

As can be seen from Figures 18 and 19, the upward trajectory of interest rates is similar for both countries, though slightly steeper in the case of the US.

Figure 18 The US trajectory of interest rate rises

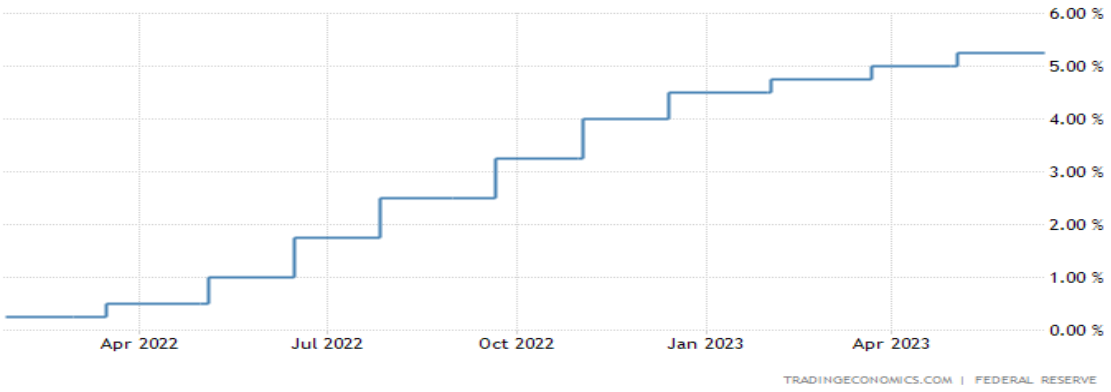


Figure 19 The UK trajectory of interest rate rises

Source: www.tradingeconomics.com

The explanation of the different economic performance of the US and the UK, probably lies elsewhere than in the trajectory of interest rate rises. One factor which may provide a partial answer is in the more aggressive Quantitative Tightening (QT) in the US, which would add to the overall monetary policy tightening. Insofar as this level of QT may have had impacts on financial stability in the US, replication in the UK - with a weaker sovereign bond absorption capacity of financial markets (section 4) - would not be possible. Moreover, the fact that: “Foreign investors alone absorbed nearly 60% of the net supply of US Treasuries in 2022. Increased foreign demand may have offset, at least in part, the impact of the higher actual and expected bond supply from (US) QT” (Schnabel, 2023a) would be unlikely to be replicated in any strong UK QT.

If we look at the same two structural factors as in the UK/Japan analysis then the respective figures for the US, trade is 26% of GDP as opposed to the UK's 57%, so lower likelihood of the US importing significant inflation. In the case of services, the US proportion measured in GVA is 78%, just below the UK at 79%. However, as with Japan, but with a less extreme disparity, the proportion measured by employment is 79% in the US, compared with the 83% in the UK[17].

The Federal Reserve appears perhaps to be less swayed by contemporary data or by market expectations than the BoE. Moreover, economic growth appears to be slowing – first quarter figures showed an increase of 1.3% compared with the 2.6% in the final quarter of 2022. This slowing is confirmed by an analysis of federal, state, and local government spending that suggests a neutral impact of *fiscal* expansion during the first quarter in the US. This appears linked to the ending of the substantial pandemic financing of households, confirming the decision of the Federal Reserve to adopt a steeper interest rate trajectory to deal with the earlier and more substantial increase in aggregate demand in the US than in the UK, (Brookings 2023).

The Eurozone and the UK

Comparison with the 20-country Eurozone monetary jurisdiction and the UK is problematic as far as any direct comparison is concerned. The comparison here is therefore restricted to monetary policy alone. As already observed, the theoretical basis of the ECB approach to policy (Lane 2023a) is similar to that in the UK. Moreover, forward guidance appears to have been abandoned, aside from the exegesis performed by commentators and financial market participants on the "gnomic" responses to questions by Christine Lagarde.

The June rate increase of 0.25% is related to Eurosystem core inflation falling for the past two months, down to 5.3% and to the ECB forecasts of 3% in 2024 and 2,2% in 2025. Economic growth is expected to be 0.9 per cent in 2023, 1.5 per cent in 2024 and 1.6% in 2025 (Lagarde 2003). Borrowing costs have increased steeply and growth in loans is slowing. Tighter financing conditions are a key reason why inflation is projected to decline further towards the ECB target, as they are expected to increasingly dampen demand (Lagarde 2023). On wage pressures the ECB, unlike the BoE does not see any second-round wage effects and are not therefore seeing a wage price spiral[18] (Lagarde 2023). The ECB seem to have taken note of the IMF historical analysis:

> We conclude that an acceleration of nominal wages should not necessarily be seen as a sign that a wage-price spiral is taking hold. Indeed, the history suggests that nominal wages can accelerate while inflation recedes from high levels. In fact, this is what tended to happen after past similar episodes. (IMF 2022)

The difference in perception between the ECB in relation to the Eurozone position in respect of inflation and the UK BoE perception are as suggested above: a) a near-panicked reaction to the unexpectedly high core inflation figure; b) an unnecessary acceptance of the financial market consensus for a significant rate increase, and c) an ill-considered acceptance of the embeddedness of the short-term wage-price spiral.

All three of these assumptions are challengeable. The embedded inflation hypothesis is challenged by the IMF historical analysis of wage-price spirals (Alvarez et al (2022). The reaction to the April and May surprise increases in core inflation is challenged in two ways. First, that the BoE, having almost itself lost faith in its DSGE modelling is now paying too much attention to contemporary data. Second, an unwillingness (except for the two MPC members who voted against the 0.5% rise) to take sufficient account of the need to allow the previous interest rate hikes to have an impact over the appropriate time horizon. Third, the Bank is supposed to lead the financial markets and not follow them. Moreover, the sharp increases in sovereign bond rates have much to do with the unstable domestic bond market and the general international increase in bond rates. This is partly a problem of inadequate Bank and FCA regulation and the unattractiveness of holding sterling. The last-mentioned issue is the fault of the government not the Bank.

3.4.1 Concluding remarks

Insofar as these three brief comparative analyses permit conclusions to be drawn it confirms the general view of this paper that central banks, and especially the BoE need to seek a price stability target that permits a broader perspective on the movement of the economy through time that takes account of inflation and deflation, without the obsession with rates of inflation as targets. There is also a need to take account of fiscal policy and key structural factors in developing monetary policy. The Bank might, for instance, have paid more attention in looking forward at the trend in producer prices, as Figure 20 indicates.

Figure 20 UK Producer prices (April 2023)

Source: www.tradingeconomics.com

It is not clear why this slow but steady fall in producer prices from August 2022 has not been replicated by a progressive fall in retail core inflation since that time, especially the apparently inexplicable increases in April and May. One factor may be the ending of the generous business support for non-domestic businesses and its replacement by a less generous schemes. However, this may explain the high April and May retail figures for core inflation, but not the lack of consistent following of the steady decline in producer prices. The figures for June may provide more evidence.

3.4.2 The Treatment of Excess Reserves and Interest Rate Setting

Before moving to a consideration of the next section on *UK Monetary Policy Situation,* it is discussing briefly a somewhat technical monetary policy issue which relates both to the question of how to handle the impacts of large central bank balance sheets, potential for QT, linked also to the relative efficiency of interbank credit markets in the current monetary economic environment. The issue concerns the management of reserves between the central bank and commercial banks and the level of excess reserves, which impinges of interest rate setting by central banks.

The topic was discussed in March 2023 in a speech by Isabel Schnabel (Schnabel 2023b). To simplify a complex argument, the non-trivial problem is that the management of central bank reserves in relation to the liquidity needs of commercial banks has required changes from the norm before 2008 and the era of QE. Its resolution in the contemporary monetary environment is tackled differently by the BoE, the US Federal Reserve, and its resolution is now being considered by the ECB.

The normal central bank management of reserves prior to 2008 was to provide just enough reserves to meet the net liquidity needs of the commercial banks in aggregate. This was achieved by setting the rate at which central banks paid on commercial banks reserves at roughly at a mid-point between the unsecured overnight rates and the ECB Refinancing rate, the Bank rate in the UK, and the Federal Reserve Funds rate in the US. This was known as the corridor system and relied on being able to estimate the net aggregate reserve requirements of the commercial banks. Post-2008, the increase of the volume of excess reserves in the monetary system, as a result of QE and other stimulus measures during the pandemic, pushed the overnight rates to the operational monetary policy interest rates, that is to the *floor* of the corridor.

As Schnabel (2023b) describes in more detail, the US Federal Reserve solution establishes a supply-driven *floor,* and the BoE solution is a demand-driven *floor*. Schnabel appears to suggest that the ECB may consider the system used by the BoE, rather than moving back to the corridor system.

This issue matters for monetary policy and financial stability for essentially two, partly linked, reasons. **First**, the increase in reserves, essentially not determined by the needs of the commercial banking system means that changes in liquidity requirements have very little effect on the level of short-term interest rates in the market. As excess

reserves are reduced in line with QT, there is uncertainty as to when this situation may change and there would be upward pressure on short-term interest rates. Such a spiking of market interest rates happened in the US in late 2019.

The **second** reason relates to the behaviour of banks, and their customers business and personal that significantly affects the liquidity needs of the commercial banking sector, especially in a contemporary febrile financial environment. The needs of individual commercial banks vary and the distribution of reserves between them vary considerably[19]. Hence, the operation of the interbank lending market is less likely to be efficient and thus requiring a higher level of excess reserves. Moreover, other factors such as: the requirements of Base 3 (increasing the demand for high-quality liquid assets; the shift towards less liquid savings and investments attracting higher rates, by banks and their customers; and concern about financial stability may all increase the perceived liquidity requirements for banks.

In this context, an attempt to revert to the corridor system would make difficult attempting to estimate the aggregate needs of the commercial banks. Retaining the floor system is the better option.

The BoE demand-driven floor system, effectively, insulates the policy rate decisions from any impact of QT. In this approach the Bank currently offers reserves through regular short-term repo operations at the same rate that it pays to banks depositing reserves, ensuring that money market rates trade closely to the policy rate at every level of excess reserves. Any unwinding of the Bank's bond holdings (QT) is thus independent of commercial banks' demand for excess reserves.

Section 4: Back to the UK: An Analysis of Current Policies

4.1 Introduction

The UK, in common with the USA and the EU witnessed, in 2022, a sudden and unprecedented increase in interest rates, set by their central banks. The BoE base rate increased from 0.25% in January 2022 to 4.5% in May 2023. It had previously, from May 2021 to November 2021 remained at 0.1%. At 4.5% it is also by far the highest *level* for a decade, and a level, via its impact on UK mortgage rates, credit access, and other financial market variables, that may - especially if it persists or indeed, as appears likely, is further increased - have a significant recessionary impact on real incomes. The latest financial market assessment, taking account of the higher-than-expected May figure for core inflation at 6.8% is that it may rise to 5.5%, though perhaps in a number of steps.

At the same time, current UK fiscal policy is also attempting to maintain a stationary level of aggregate demand, motivated by an endeavour to reduce the budget deficit as reported by the Office for Budget Responsibility (OBR 2022). and avoiding raising or lowering taxes. Although of itself not unreasonable - assuming the impact of interest rate rises by the BoE, aimed at reducing inflation does not overly depress aggregate

demand - it appears to be based on keeping the net debt to GDP ratio below 100%. This aim ignores the fact that the most recent budget deficit figures indicate that the increased level of debt was principally not due to increased public debt for expenditure purposes, but because of the high burden of interest payments by the Treasury on short-term, government index-linked debt. We discuss this issue in more detail below.

4.2 UK Monetary Policy

4.2.1 *Explanation 1* One analysis of the BoE approach is summarised in a long speech by Ben Broadbent (Broadbent 2023). He suggests that the Bank appears to be clinging to a policy approach based on a combination of DSGE modelling and an incorrect Keynesian use of IS-LM modelling. Under this approach monetary factors are treated as frictions, rather than facilitators of business and trade, and a facile assumption is made that money supply and demand are either always in equilibrium or that any departure from equilibrium is fleeting. (In fact, money supply and money demand are *not* independent of one another. Hence, there is no equilibrium to be found. The money supply is endogenously determine*d*).

There are a number of crucial assumptions in Broadbent's analysis. Two of these are contained in one paragraph:

> as long as people are free to borrow and lend, demand in IS-LM models is fully pinned down by current and (expected) future real interest rates. The expansionary effect of an injection of money therefore relies on its first depressing the yield curve and the stance of policy is fully captured by the prevailing level of interest rates (relative to some underlying, "neutral" level).

The use of the IS-LM model by Broadbent, even with the minor caveats he enters, is concerning. The model was rejected by both Keynes and Hicks, who initially promoted the model, and there is a deceasing use of the model even as a pedagogic tool. Even if we were to accept its use by Broadbent there are also some empirical flaws in his analysis.

Broadbent makes the assumption that there are no constraints on people borrowing. In practice all are *not* free to borrow and lend, many are credit constrained. Nor is the stance of policy fully captured by the prevailing level relative to a non-observed "neutral" level, that is r* (Black et al 2018).

In developing his argument Broadbent suggests that changes in the aggregate of "broad money", essentially deposits within the commercial bank sector, does not impact on inflation. While not arguing that inflation targeting should be replaced by using monetary aggregates as target variables for central banks, movements in broad money should not be ignored when assessing the impacts on asset purchases or their

prices and hence on any a distributional effect on aggregate demand, for instance in connection with the housing market.

In a support of his contention, Broadbent suggests that the main reason why the purchase of assets, especially sovereign and corporate bonds, are neutral in their impacts on broad money is that they are contained within the commercial bank sector interbank market and of themselves do not increase aggregate broad money. However, in the UK (as opposed to the US) these bond purchases, domestically, are principally made by pension funds and insurance companies, not by commercial banks. It was from these institutions that central banks, including the BoE, purchased bonds, principally sovereign debt, during the QE phase, continuing of course to pay interest on those assets. Broadbent offers no institutional empirical evidence as to the use of the reserves transferred in exchange for the bonds purchased by the central bank, such as, were the reserves used to purchase other assets within the private sector? His is a purely theoretical analysis, based on the IS-LM model in which none of the two sets of variables are independent of each other.

Returning to Broadbent's thesis that QE (and ipso facto QT, the obverse) has no impact on broad money. Instead, his contention is that any impact occurs automatically – via the operation of the IS-LM model – as a reduction of the real rate of interest (measured against an unobservable yardstick, the neutral rate of interest r*) and/or a decrease of asset prices. Not connected therefore to the central bank's *nominal bank rate policy* decreases that occurred at the same time and were aimed at stimulating aggregate demand. His argument also ignores the coincidental impact of fiscal policy.

The reverse is now happening with the BoE attempting to sell £80 billion each year to buyers in the gilt market (QT). One problem, as *the Economist* (2023) has pointed out is that the appetite for gilts by insurance companies is waning, at a time when pension funds want to offload around £40 billion per annum of gilts to pay insurers to take on their liabilities. The stock of gilts held by insurance and pension funds together is around 30% of the market, with the BoE (plus some modest commercial bank holdings) accounting for 40%. The balancing 30% of the market is accounted for by overseas investors. Their appetite for holding sterling, as opposed to the US dollar or the Euro may be limited. Strains in the gilt market are likely to continue and hamper the continuation of QT and make more difficult the UK government funding of its net borrowing from the private sector.

Again, as at the same time as QT is being attempted the nominal bank rate is being aggressively increased. Separating the two impacts, according to Broadbent's thesis, is going to be problematic. However, see earlier discussion of the role of the setting of the interest rates on the excess reserves of commercial banks as a mechanism to protect the setting of the nominal bank rate (Section 3.4.2).

Broadbent's arguments are convenient for the BoE in a number of ways. **First,** by arguing that there was no increase in the net asset worth of those from whom the BoE

purchased the bonds, there is no adverse distributional impact, this suggestion ignores the positive impact of QE on house prices and the benefit to those owning property. **Second,** by confusing the impacts of policy nominal rate changes and the automatic impact of QE/QT on real interest rates, via the invocation of the vacuous IS-LM model. *Third*, his analysis leaves intact the ability of the BoE (and other central banks) to cling to the use of DSGE models of the unobservable "real" economy and regard money as simply creating frictions that may be troubling, though can be ignored as occasional departures from general equilibria.

Broadbent's empirical contention is that the Bank's monetary policy, has maintained average inflation at 2% over a long period. We have suggested above that empirically this may not be an entirely accurate representation.

4.2.2 *Explanation 2* A more technical explanation of key elements of the BoE monetary policy (and that of other central banks) is provided by McLeay and Tenreyro (2018). Their analysis covers two unobserved variables that underlie the UK monetary policy approach, namely the *output gap* (slack in the economy) and the *wage and price Phillips curves* (suggesting that as unemployment tightens wage and price inflation increase*).* Three more recent technical working papers on inflation and the Phillips curve and related uncertainty and risks have been published by the technical staff of the Bank. It is worth considering the broad implications of these papers. Not least because of the way this work is reflected in BoE policy and pronouncements, such as the recent (July 10th, 2023) Mansion House speeches by the UK Chancellor and the BoE Governor which underlined the "resilience" of the UK economy and the persistence of inflation.

McLeay and Tenreyro (2018) suggest that, although optimal monetary policy is set in relation to the degree of slack in the economy, measured by the movement of the output gap. Nonetheless, they maintain, an operable positive sloping Phillips curve still exists and responds to monetary policy, though the curve(s) are hidden in the structural DSGE models. Hence, "the concept of a single structural relationship between inflation and the output gap is no longer well-defined" under optimal monetary policy and the Phillips curve slope may flatten (as has been empirically observed in the US and post-pandemic in the Eurozone).

It is important to recognize that the Phillips curve(s) - there is a price curve and the original wage curve – represent an attempt to link the DSGE real economy with the nominal (observed) economy. This is the reason for so much concern by central banks about any suggestion that the Phillips curve is irrelevant. To avoid too detailed and technical discussion the summary position of McLeay and Tenreyro (2018) is noted below.

> To summarize, the paper explains the identification problem posited by the estimation of Phillips curves, rationalizes findings in the empirical literature, and discusses practical solutions to the identification problem, showing evidence of a steeper Phillips curve in US regional data. In doing so, the paper hopes to address a recent wave of

work questioning the existence of a link between inflation and slack, a key building block of the prevalent monetary policy framework.

Notwithstanding this conclusion, later work in the US (Gali and Gambetti 2019) suggest that there are signs that the Phillips curve relationship may be breaking down and that further research is required. Hence, these two authors conclude:

> We draw two main conclusions from our findings. Firstly, we confirm the existence of a growing disconnect between wage inflation and unemployment. Secondly, more research is needed in order to understand the nature of that phenomenon.

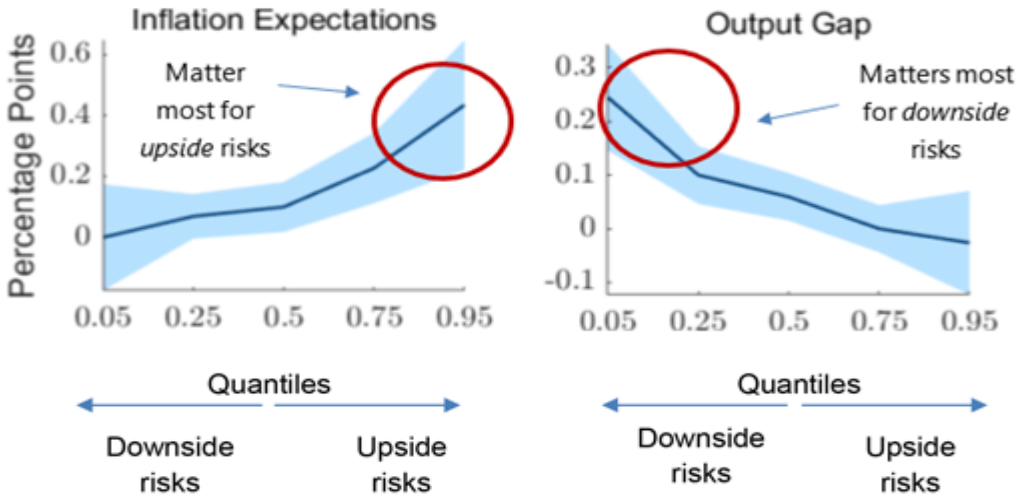
The more recent work by the BoE in the three working papers noted above suggest that:

1) Global supply constraints, rather than the inflation-relevant output gap accounted for the initial strong inflationary impulse in 2022 and, assuming global bottlenecks continue to ease, that inflation will fall in 2023. Identification of a specific Phillips curve effects are empirically difficult to confirm. (Bank Underground (1))

2) Exploration of a neural network Phillips curve model suggests that the recent rise in UK services inflation "has been associated with a rise in nominal inertia related to lagged service inflation dynamics and pay growth". The rise may also result from goods' prices and input costs and possibly a pick-up in inflation expectations. (Bank Underground (2))

3) Inflation risks appear to have risen steadily during 2020 materialising only in 2021. Expectations appear to matter more for upside inflation risks whereas economic slack is more relevant for downside risks. The graphic (Figure 21), taken from the working paper, portrays the relationships in the familiar Bank fan diagrammatic form.

Figure 21 Inflation Expectations and Output Gap



Source: Bank Underground (3)

In sum, these various contributions, provide some useful, though predictable, insights, albeit indicating the need for further research. However, it seems clear that the increasing complexity of the modelling and search for relevant and comprehensive data, in an attempt to maintain the relevance of operational Phillips curve(s) - as a link between DSGE models of dubious validity - is proving problematic. This difficulty perhaps indicates the use of simpler data based BVAR models may achieve as valid results.

4.3 UK Financial Markets Policy

Lately, it has become clear that the Bank appears to be giving increasing weight to its other role than that of monetary policy (Bank of England 2023a). The aim of the Bank's Financial Policy Committee (FPC) is tasked to ensure the stability of the UK financial system, guarding against risks, and dampening the impact of any financial market shocks. Another way of describing these actions is macroprudential policy. An example was that in late 2022, a disruption in UK government debt markets revealed vulnerabilities in the liability-driven investment (LDI) funds used by UK pension schemes. The Bank subsequently recommended that these funds increase their resilience to interest rate shocks substantially.

In their March 29th report (Bank of England 2023b), the Bank indicated that:

> There remain vulnerabilities in market-based finance. There is an urgent need to increase resilience. We need to work with other regulatory authorities to achieve this, as many firms involved in market-based finance are not regulated by the Bank of England.

Furthermore,

> Money Market Funds (MMFs) are vulnerable to rapid and large investor withdrawals and could be a source of risk to the financial system and the wider economy. That is why the Bank of England is working with other authorities to improve their resilience. The UK authorities are set to consult on these issues soon.

More generally, global high-yield bond, leveraged loan and private credit markets have almost doubled in size over the past decade. Within that, estimates suggest that private credit has tripled in size over the same period. The opacity of the private credit market complicates the assessment of potential risks for both regulators and market participants. Moreover, commercial real estate remains a potentially vulnerable sector globally, as higher interest rates reduce property values along with borrowers' ability to service debt (Bank of England 2023b).

The Bank takes a more sanguine approach to the strong reliance of the major UK banks and the overall banking system, given its tight regulation and support from the

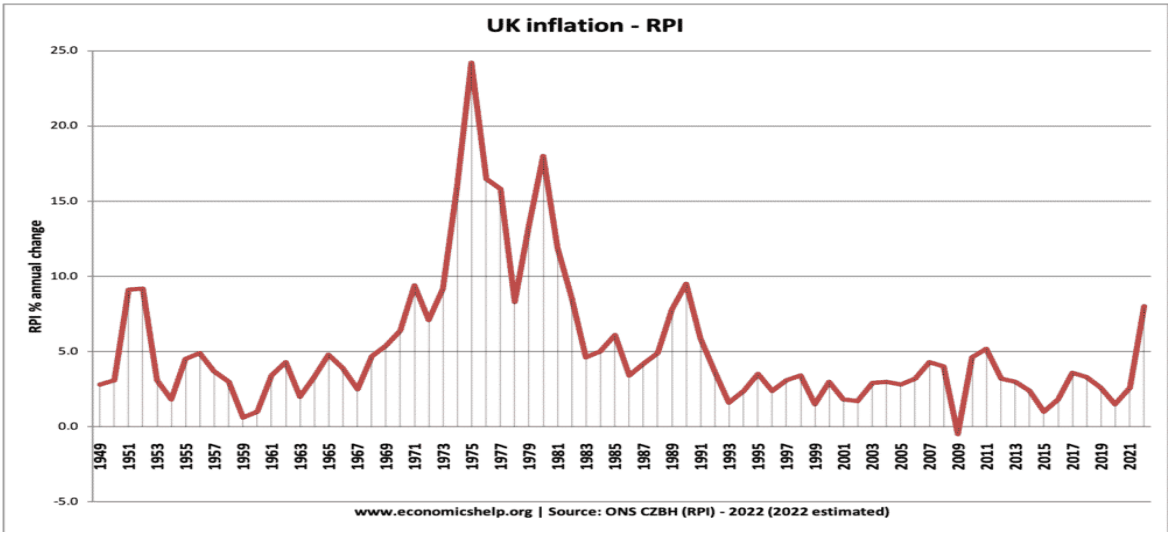
Bank itself. There is clearly, interaction between the monetary policy actions taken by the bank and their impact on financial stability. Improved coordination between the MPC and the FPC is essential.

4.4 UK Fiscal Policy

From the 1970s to the late 1980s UK, fiscal policy as the principal policy tool, was used both to attempt to stimulate growth and to deal with bursts of inflation. This period was the era of "stop and go" (or perhaps more accurately as Christopher Dow (Dow 1998) described it, go-stop), with short periods of economic growth followed by short periods of economic stagnation.

In the 1950s and 1960s, as argued in the Radcliffe Report (Radcliffe 1959), the policy preference was to use credit controls to supplement conventional interest rate monetary policy. There was considerable scepticism about the impact on aggregate demand of interest rates, given the long- and variable-time lags involved before impacts were observed. For a more recent analysis see a BoE analysis (Aikman et al 2018). Credit controls - effectively a form of macroprudential policy - did not directly target inflation, nonetheless, accompanied by fiscal policy the aim was to suppress aggregate demand. Currently, though a specific 2% inflation rate is targeted the central bank policy is principally to suppress aggregate demand and thereby reduce inflation. Average annual inflation from 1955 to 1965, when credit controls were being actively used, was around 3:

Figure 22 UK Inflation (RIP) 1949-2021



However, the main policy approach from the mid-1960s and throughout the 1970s was targeted on stimulating economic growth by loosening fiscal policy to increase aggregate demand - though without sufficient attention being paid to increase supply capacity - and then having to increase taxes and reduce public spending to reduce aggregate demand as inflation started to increase, again (see Dow 1998). Monetary policy was not principally used during this period to influence domestic inflation, as

indicated above it was prophylactically used to avoid a falling exchange rate and imported inflation.

Of course, there is a problem with such historical analyses in the fact that both institutional and other economic environmental (domestic and external) factors were different from the contemporary UK (for instance the low level of household mortgages). Moreover, as indicated by the Radcliffe Report, the academic consensus influencing policy responses, also makes difficult the drawing of lessons for contemporary policy. There is also the analytical problem of path-dependency to accommodate in reviewing historical data.

Insofar as it may be accepted that the role of fiscal policy is also to manage aggregate demand, and we relax any balanced budget constraint, though not ignoring the impact of budget deficits, then it is self-evident that fiscal and monetary policies should be pursued in a *complementary* manner in relation to inflation. Nonetheless, it should be borne in mind that fiscal policies involve a range of specific policies, many of which have objectives beyond directly influencing the overall level of aggregate demand, for instance the distribution of income and wealth. Some of these policies will also operate directly or indirectly on aggregate supply capacity and utilisation.

It is clear however, that the shift in policy direction from the 1980s onward - culminating in the abrupt decision in 1997 to grant full independence to the BoE, with the principal national governance responsibility for controlling inflation - has reversed the policy situation that obtained during the 1970s.

Nonetheless, we would argue, it is not possible when dealing with inflation to depend solely on monetary policy operated by an independent central bank. This is clearly the case in 2022/2023.

In 2022, the UK government announced a significant policy package to reduce the pressure on households and businesses from high energy bills. This support is expected to have reduced CPI inflation directly by around 5 percentage points, and to have protected viable businesses and real incomes of households. This package was intended to lay the foundations for long-run growth. This hope has not yet materialised.

To fund this package, the Debt Management Office Net Financing Requirement (NFR) was revised upwards from £161,7 billion in April 2022 to £234.1 billion in September 2022. To fund these additional costs, new gilt sales of £62.4 billion were planned plus net Treasury bill sales for debt management purposes of £10 billion for 2022-23. As of February 2023, the total gilt sales are £150.9 billion with 7 more auctions expected to take place by the end of the accounting year (5th April 2023). Total planned gilt sales are £169.5 billion.

During the previous year (2021-22), the planned sales of Treasury bills for debt management purposes were reduced by £25 billion, which resulted in a stock reduction of £23.2 billion. The final overturn for gilt sales in 2021-22 was £194.7 billion.

As with gilts, Treasury bills continued to attract overseas investor interest, with around 50% of the outstanding amount of bills on 31st Dec. 2021 being held by this group.

In its Spring statement report, the OBR (OBR 2022) indicated that: from its start in March 2009 to March 2022, the APF (Asset Purchase Facility) paid lower interest on its liabilities (Bank Rate paid on reserves) than it received on its assets (coupons paid on gilts), making cash profits, and remitting a total of £120 billion to the Treasury, reducing the central government net cash requirement. Bank Rate has now risen above the interest spending net of the APF and, when added to losses that are crystallised as gilts redeem or are sold, will mean cash starts flowing from the Treasury to the APF. Across the forecast, the Treasury pays £133 billion to cover these net losses. The impact on measured debt is somewhat less than this because the losses associated with the redemption of gilts that were purchased at a premium has already been recorded in PSND. Netting off these and other smaller effects, flows related to the APF raise debt by £61 billion (2.1 per cent of GDP) between March 2022 and March 2028.

The severity of the problem is described by the OBR. The overall maturity of the debt stock has shortened over time (largely as a result of the quantitative easing operations of the Bank of England that in effect swap long-dated gilts for floating rate reserves). This reduced the median maturity of public sector debt from seven years before quantitative easing began in 2008 to less than two years today. That means nearly half the effect of a rise in interest rates is felt within a year today, rather than only a quarter if the maturity structure of debt in 2000- 01 still prevailed. And the combination of the higher debt stock and shorter maturity means that every percentage point increase in short-term interest rates adds £13 billion to spending over the following year, rather than just £2 billion if the stock of debt sensitive to such rates were still at its 2000-01 share of GDP. The debt stock that is inflation-linked has risen in step, also almost quadrupling from 6 per cent of GDP in 2000-01 to 22% today.

This means that every percentage point increase in RPI inflation raises spending by £6 billion, rather than £2 billion if index-linked debt were still at its 2000-01 share of GDP. A far larger overall debt stock, which has almost quadrupled from 28 per cent of GDP in 2000-01 to 102 per cent in 2022-23. That means a 1 percentage point rise in the effective interest rate paid across all debt adds £26 billion to spending, whereas it would add only £7 billion if debt were still at its 2000-01 share of GDP. In fact, prior to the launching of QE as a means of redressing deflationary pressures and attempting to maintain the inflation target, the average maturity of UK public debt was 14 years, that is higher than the 2008 figure provided in the OBR report quoted above.

The Bank has begun the process of selling off its stock of financial assets accumulated over a decade of QE. This should be done over a longer period by not renewing as the term date is reached. The Kwarteng/Truss plan would have required a significant expansion in gilts sales. The less aggressive, but sustained, gilt disposal current being implemented by the Bank will make this possible, without exceeding the capacity of

the bond market. To provide stability to the long-run growth, it is important to maintain fiscal sustainability in the medium term. There may, however, be a further problem is selling long-term sovereign debt, as reported by the *Economist* magazine in 2023, and also covered in the July OBR report.

> However, with the APF now a *seller* of gilts and net issuance by government also expected to remain high across the medium term, private sector buyers will need to absorb an average of 6.5 per cent of GDP each year between 2023-24 and 2027-28, more than twice the post-financial-crisis average, and a level not seen since the financial crisis itself. (OBR 2023)

The Sunak government's fiscal "discipline" for public finances, aimed at working in harmony with the Bank's monetary policy, is currently built on three key pillars:

a. Fiscal responsibility and reducing debt as a proportion of GDP over the medium term;
b. Keeping public spending under control;
c. Maintaining strong institutions and frameworks.

Due to the energy package, borrowing has increased, though it is expected to have mitigation effects on the risk to the UK economy to enter a deep and damaging recession. The Figure 23 demonstrates the weak growth in 2022, with a negative rate of (-0.2%) in Q3 and 0.0% in Q4, avoiding a technical recession at the end of 2022. The labour market tightness has been easing too and the ratio of vacancies to unemployment fell to 0.9 in December, from a peak of 1.1 in August 2022. Naturally, the significant tightening of the UK monetary policy has affected aggregate demand, and it might be the case that cumulatively the former has been tightened too much. Therefore, still there is a risk of a mild recession in the UK during 2023, and in these circumstances, it is challenging for both the monetary and fiscal authorities to find the balanced new path for growth.

Figure 23 GDP, 2022

Source: Office for National Statistics, February 2023 Note: CVM – Chained Volume Measures

The problem with the current government fiscal policy approach is that it is based on a balanced budgetary mantra that regards fiscal policy as principally a matter of balancing public expenditure with tax revenue. In this model there is no room for managing aggregate demand as this is a matter for monetary policy. The inevitable departure from this desideratum, resulting in an increase in net public debt, the UK government is committed to avoid.

Section 5: A More Appropriate Mix of Monetary and Fiscal Policies for the UK

We have provided above a critique of the monetary policy pursued by central banks – and specifically the BoE – and indicated a concern about the UK government's current fiscal policy. We will in this section suggest an alternative policy mix in relation to managing inflation in the future starting from a position around the middle of 2023.

The basic proposition of our critique has been the inappropriateness of an over-reliance on monetary policy to manage aggregate demand and hence control inflation However, control of inflation is effectively defined as the continuous achievement of a specific, proximate medium-term target rate of inflation. We argue that the objective of monetary policy should be defined as the maintenance of price stability on an ongoing basis, rather than targeting what appears to be an arbitrary and unsustainable 2% inflation target.

As we have indicated, the popularity of inflation targeting as the optimal monetary policy stems partly from the assumption - set in the context of DSGE modelling - that relative prices in goods markets are 'sticky'. Given the impact of both demand and supply shocks these price rigidities lead to market distortions (Woodford, 2003). Moreover, in the real world - where disequilibrating forces are influential in determining the path-dependence of prices - there must be doubt on the assumptions built into a model in which essentially *tatonnement* is the mechanism to find the equilibrium solution.

Returning to the historical economic evolution of the UK economy from 2010, in the aftermath of the GFC, *four* distinct periods may be observed. The first period from 2010 until around 2014 saw subdued nominal wage growth and moderately high inflation, with the accompanying austerity policies followed by Osborne as Chancellor. This was followed by a period from 2014 to 2019 when inflation was quiescent and real wages grew, though not making up for the earlier period's reduction. The continuation of austerity meant continued weak economic growth and productivity during this period. The years 2020 and 2021 were hit by the Covid pandemic where economic growth and real wages fell, both being partially mitigated by state-funded financial support. The final contemporary period, covering 2022 and 2023,

experienced the energy price and other supply chain shocks caused by both the aftermath of the slow recovery period from the Covid slump and the impact of the Russia-Ukraine conflict. These impacts ushered in a rapid rise in headline inflation, accompanied by an equally rapid escalation of interest rates during the 2022/2023, with an emerging recessionary impact on growth.

Despite the continuing increase in interest rates, “core inflation” appears to be reluctant to decline. Financial market expectations, which earlier in 2023 had been expecting, at least a pause in rates, are now pricing in a rise from the 4.5% in May to 6.5%, though possibly over a period of three to four months.

The slow decline of core inflation should have been expected as the energy price rise and imported food price rise - linked partly also to the “Brexit effect” - were always going to take time to come through, especially in relation to services. Moreover, the ending of fiscal support for households and businesses at the end of March 2023 may have delayed a fall in core inflation in April and May.

The current problem for the BoE is two-fold. The additional data modelling now used does pay greater attention to current data and financial market expectations. However, this may also lead to potential over-reaction to proximate data and over-reliance on financial market expectations. Second, the system hysteresis and the impact of rate hikes and low bond prices *already in the system* seems to be being given insufficient weight in influencing rate decisions. The excuse provided is that price inflation is becoming embedded, though the empirical evidence for this assumption is not unequivocal and appears to be based mainly on modelling assumptions.

It is important to recognize that whatever monetary policy is adopted the rate of inflation is likely to vary unpredictably, with periods of relative quiescence broken by demand and supply shocks of variable speed and intensity. It is also the case that among the financial and economic forces influencing inflation will be monetary policy itself. Although much attention is paid to core inflation and its persistence, in the case of supply shocks, is to be expected as the impact of services is delayed in comparison with goods. Moreover, given the high weight of services in the UK economy the reduction in core inflation will be slower. Nonetheless, it will fall, albeit at an unpredictable speed. It remains, therefore, a balanced judgment for the UK central bank to make, bearing in mind the recessionary impact of the already implemented sharp rate rises.

Given this empirical situation applicable to inflation in developed country economies it seems prudent for monetary policy to be rule-based, so as to achieve policy consistency. In the past, prior to the period 2010 to 2022 in the UK (and broadly for various other jurisdictions), the rules, varied between the use of money supply targets, the Taylor rule, and then culminating in the current narrow, symmetrical inflation target of 2% from 1994 in the UK. Between 2010 and 2022, principally in an attempt to stimulate economic growth, various monetary policy actions supplemental to interest

rate rises, especially quantitative easing and forward guidance, in a (failed) attempt to manage financial market expectations, were employed. This era of unconventional monetary policy could not be considered an unalloyed success.

The evidence and arguments in this article suggest that a return to a broad rule-based approach that allows for a longer-term perspective on inflation to be taken should be considered for a revised monetary approach in the UK, implicitly taking into account wider considerations pertaining to economic growth. Hence, given our general scepticism that the efficacy of direct inflation-rate targeting is more a matter of belief rather than evidence, we believe such a change is required as set out in the next section (see Williamson 2020).

5.1 Monetary Policy: A Move to Nominal GDP Targeting

We argue that, for an effective monetary policy, the use of Nominal GDP *level* targeting is superior to the use of inflation targeting (Beckworth 2019) in achieving price stability without sacrificing growth, particularly at a time when there remains low productivity and apparent supply constraints. Moreover, Nominal GDP *level* targeting appears better suited to handle supply shocks. Given global uncertainties, supply shocks are likely to be the prevailing characteristic faced by monetary policy for some time to come.

Some idea of what is implied by NGDP-level targeting in simplistic terms involves a monetary framework seeking to target a level of nominal GDP set at the long-term potential growth of the economy, *plus* an inflation target. For the UK economy, for instance, that might mean keeping the NGDP level on a path that might be assumed/estimated to grow at a rate of, say 4%. That would entail a 2% long-run real growth *potential* plus an estimated 2% inflation rate. The central bank would then ease monetary policy - still principally using short-term interest rates as the policy weapon - when the level of NGDP is (expected to be) below the targeted path and tighten policy if it is (expected to be) above. Should the NGDP level fall below or rise above target in a particular year, the central bank would seek to make up for that in subsequent years. It is important to note that the variables measured and targeted during the operation of the policy will be observable (within estimation parameters) and *not*, as in (Flexible) Inflation Targeting, include *unobservable* variables such as the output gap, the natural rate of unemployment, and the neutral rate of interest (r*).

We appreciate that the idea of NGDP-level targeting is controversial among monetary economists. The economic conditions faced in the UK now, make it an ideal time for re-examining the arguments in favour and against. The current circumstances where there is concern not only about persistent high core inflation caused by supply shocks, but also financial instability, suggests strong grounds for shifting to NGDP-level targeting. Such an approach can, for instance, take account of financial market imperfections such as the non-contingent mortgage and consumer debt problems (Sheedy 2014); issues such as collateral constraints and spreads between internal and external finance, and overall financial stability. These factors alone suggest a

strong case for consideration of "nominal income targeting" as a new single target for the BoE. Added to these potential benefits is the ability to combine *in an understandable single target variable*, NGDP, encompassing output and employment growth, together with the moderating of inflation (Hall and Mankiw 1994; Garín et al., 2015).

Finally, by communicating a central bank target/policy rule to the general public, which targets the *nominal income of the average household* – rather than one which, bizarrely, targets, in some circumstances, higher inflation as being desirable – the public will have a clearer view of the positive direction which monetary policy is trying to achieve, that is in line with their own expectations of *nominal* household income growth over time.

5.2 The Wider Case for NGDP-Level Targeting

The NGDP combines formally, in *one indicator,* a 'dual mandate', incorporating both inflation and wider economic and employment effects, while also encompassing financial stability objectives. Essentially, targeting NGDP-level is *history dependent*, so that any deviations from the target path will be remedied, even if inflation continues initially to increase, it can be returned relatively soon to its required trend path, providing appropriate policy measures are taken. Essentially, this will mean not only appropriate adjustment of short-term interest rates, but also restrictions on bank-lending to companies. The opposite would be the case if inflation was below trend.

In the long run, the trend rate of inflation would be anchored by the NGDP-level target. It is critical to appreciate that price stability, as argued earlier, entails a constant trend price path, and avoidance of any potential over-reaction to, say, major oil price falls (as happened with the interest rate increase in 2008 in reaction to supply shocks caused by earlier oil price increases). It has been argued that in 2008, and for some time following the GFC, monetary policy by the US Fed and other central banks in 2008 exacerbated the severity of the GFC. Hetzel (2009; 2012) argues that:

> With the energy price shock that began in the summer of 2004, central banks initially allowed headline inflation to rise. I argue in the next section that the world's major central banks, in the summer of 2008, despite deteriorating economic activity, became unwilling to lower their policy rates because of fear that headline inflation in excess of core inflation would raise inflationary expectations. The resulting monetary stringency turned a moderate recession into a major recession. (Hetzel 2009: 211–212).

By achieving a constant growth of potential output and hence trend inflation stabilisation, the overall monetary objective of *price stability* will be achieved. Hence, fears of the de-anchoring are also misplaced.

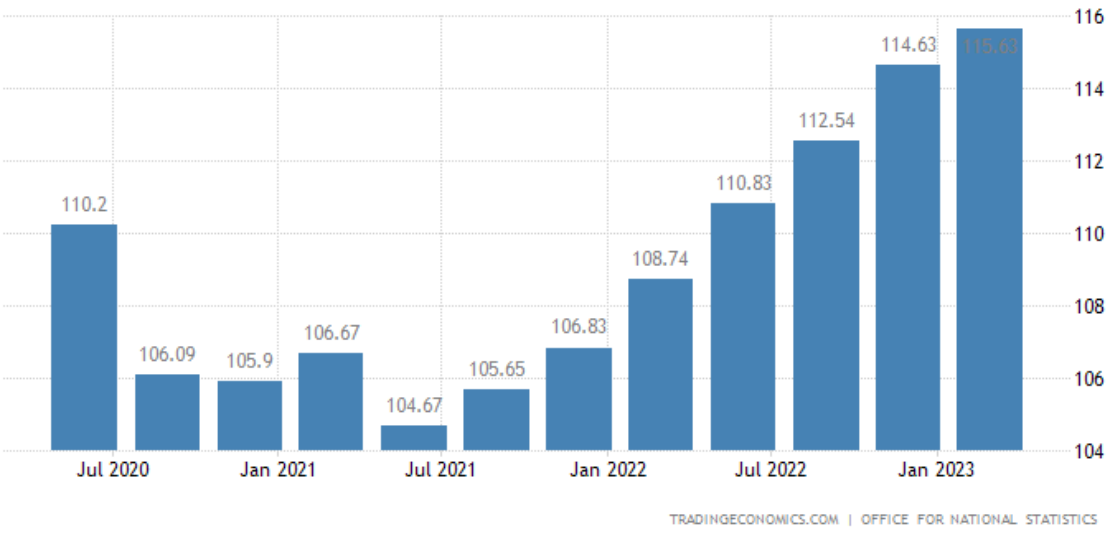
> Nominal GDP is likely to provide a good nominal anchor in the long run. Under nGDP level targeting long run price stability is guaranteed, since the target path is specified in such a way that under steady state growth it is consistent with low inflation. Even if temporarily higher nGDP growth is required after a downward deviation from the target path (which will be divided between higher output growth and higher inflation), once the target path is reached and shocks die out, inflation should come down in order to comply with the target. In any case, monetary policy cannot influence real output on the long run, so compliance with the nominal GDP target must come through the adjustment of price level. If the target path is specified correctly, an nGDP targeting monetary policy results in the desired, low inflation over the long run. Compared to inflation targeting (IT), nGDP level targeting does not mean systematically looser monetary policy, as upward deviations from the target path must also be compensated for, by generating temporarily below average nGDP growth (and inflation). (Motyovszki 2013)

There is also a benefit from NGDP targeting for financial stability. The target level of NGDP, set by the central bank will match the *public's* expected growth path of *nominal* income. Members of the public make economic decisions based on their forecasts of their nominal incomes, *not real incomes*. Households will take out mortgages and car loans based on forecasts of their nominal income. Firms will increase their borrowing to finance cash-flow, employment, and investment on forecasts of their nominal income. Movements in the real economy will adversely affect those involved in nominal contracts. NGDP-Level targeting can partially resolve this problem, contrary to inflation targeting.

With inflation targeting, the actual realization of nominal incomes may turn out to be different from what is expected and, as a result, may be disruptive for households and firms who will not be able quickly to adjust their financial plans, made in *nominal* not real terms. With NGDP targeting, the central bank, by maintaining NGDP on the growth path set out, and therefore expected by the public, can avoid significant financial instability and the disruption of the plans of households and firms (see Koenig, 2012 and Sheedy, 2014).

Under NGDP-level targeting, the central bank would seek to stabilize the GDP deflator (the preferred measure of inflation, though a lagging quarterly measure) to achieve price stability. It may be argued that the GDP deflator measures the price level of only *domestically* produced goods and services. In small, open economies where imports make up a substantial share of consumption, it might be argued that the deflator will underestimate welfare losses. However, in a large economy such as the UK this would be far less of a problem.

Figure 24 GDP Deflator Figures



Source: www.tradingeconomics.com

5.3 Objections to NGDP Targeting

There are, of course, objections to NGDP targeting and these need to be addressed. Among these are:

- Relies on GDP data which is slow to be released and subject to revision. Some argue that overly tight policy in 2008 was more due to faulty GDP data than a commitment to an inflation target. There are two responses to this objection: **first**, at least here we are discussing real data rather than the current use of unobservable variables such as the output gap, the neutral rate of interest (r)*, and the natural rate of unemployment, **second**, there are regularly published statistical revisions of NGDP estimates.
- There may be better macroeconomic measures to target, such as the consumption of final goods or total transactions. This may be true and if they prove to be more useful or more easily measured than NGDP then they could be considered, though they will still have defects.
- Appears to reflect a move towards a monetarist view on the causes of inflation. The suggested move to NGDP-level targeting does take account of monetary factors, but this does not mean targeting any of the various monetary aggregates, which we do not support.
- Leads to greater inflation volatility, and this will concern the public if they think that the central bank is ignoring inflation, leading to the de-anchoring of expectations. What is being suggested is an altering of the anchoring of expectations, not de-anchoring. The public, we suggest, will more easily identify with a NGDP-level target than attempting to hit an inflation-rate target two-years hence! Essentially there is a societal trade-off – accepting slightly higher inflation volatility in order to achieve greater stability of output and employment.

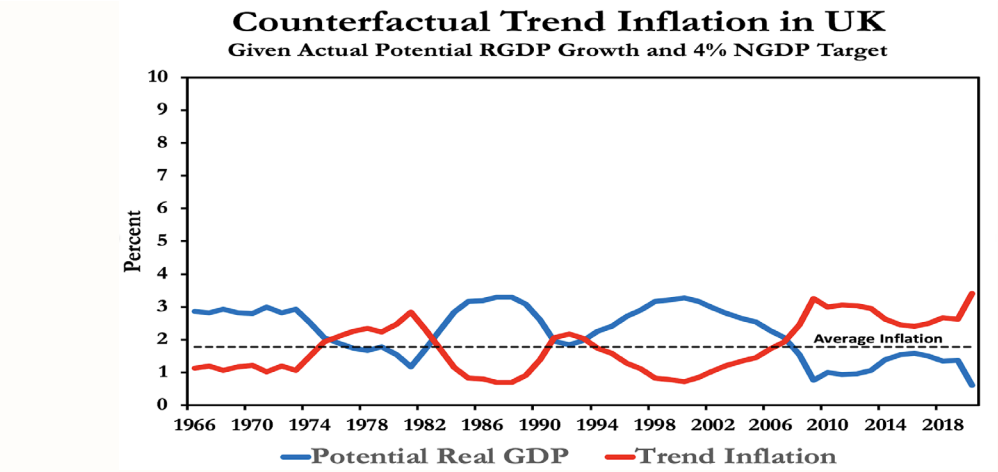
- Doesn't work for all countries - for small, open economies that are reliant on single commodities an NGDP target isn't suitable. Agreed, but the UK is a large economy, albeit an open one.

5.4 NGDP Targeting in the United Kingdom

David Beckworth (Beckworth 2020) argued that moving to a NGDP monetary policy framework "should not be too hard for the British central bank since it already does something that looks a lot like an NGDP target". To illustrate his point, Beckworth suggests to:

> … imagine that the Bank of England had been credibly targeting NGDP at 4% a year since the mid-1960s. Also assume that the potential real GDP (y*) evolved as it actually did over this period. The difference between this imagined NGDP target and the actual growth rate of y*, would be the counterfactual trend inflation experienced during this time. The figure below [Figure 25] shows the outcome. It reveals that trend inflation in the UK would have ranged from about 1% to 3%. The average inflation rate over the whole period would have been just under 2%. Not a lot to see here. Even if we tweaked the NGDP target up a bit, there would still no runaway inflation. Instead, we end up in a world with long-run inflation well-anchored and a stable growth path for nominal income." (Beckworth 2020)

Figure 25 Counterfactual trend inflation in the UK



Source: Beckworth 2020

A central bank operating under a framework of inflation rate targeting attempts to estimate *both* potential real GDP (y*) and real GDP (y), in real time, to avoid making mistakes. This exercise is currently performed by central banks via estimating an unobservable output gap, often incorrectly.

A central bank under NGDP targeting would ignore the value of either y* or y in the short-run, instead aiming to stabilize nominal income over a period, adjusting for any

past deviations. One benefit in not immediately reacting to inflation when departing from 2% would be to assist in maintaining a lower (relatively more negative) ratio of R to G, and hence avoiding upward pressure on the net-to-GDP ratio.

Clearly, any such change from inflation targeting to NGDP-level targeting in the UK would require considerable work and discussion before any such change, led by the BoE and the Treasury and in Parliament. The public would also need to have the change explained to them as would the financial markets. Insofar as the shift is able to be presented as a modification of the present inflation targeting to take account of output and employment, the easier any change might be found acceptable.

It should be noted that a whole raft of monetary policy modifications has been adopted over the past 15 years, notably QE and now QT and inflation-rate targeting without public discussion. A further, and we believe beneficial change to NGDP-level targeting, should not be considered impossible to achieve, with on this occasion also a better public appreciation of monetary policy.

5.5 Fiscal Policy: Working with Monetary Policy

The proposed shift in monetary policy will not invalidate the need to utilise fiscal policy to manage aggregate demand so as to promote economic growth. In so doing it should be recognised that there will be a need to have a close collaboration between fiscal policy and monetary policy, given the ability of the former, aside from its other distributional motivations and public spending priorities, to either increase aggregate demand or decrease aggregate demand by running a net budget deficit or net budget surplus.

The fiscal policy budgetary issue is more complicated than simply deciding to accept a budget deficit or surplus, assuming the abandonment of a balanced budget. For instance, public deficit/net borrowing has two components: *one*, borrowing for day-to-day public spending and *two*, payment by the government of interest on public debt. If there were significant deficits during any period then, insofar as this involved public spending, these deficits, would *ceteris paribus* lead to a stimulus to aggregate demand.

The impact of aggregate demand on economic growth will depend, crucially, on the rate of growth of *productivity* on the supply side of the economy. For instance, the productivity growth rate between 2008 and 2020 of only 0.5%, the productivity growth rate in 2021 was 0.21%[20]. Hence, any growth will be limited to the growth of the labour supply. Indeed, the growth rate of the economy will depend not only on macroeconomic policies, but also crucially on wider supply-side economic policies that impact more directly. These issues are not the main subject of this article.

In the context of NGDP-level targeting, long-run steady state output is determined by the supply side of the economy (effectively showing up as productivity and increased labour supply) which central banks cannot directly influence. Potential output also represents the supply side of the economy, but it incorporates the effect of temporary shocks in the short run. Once all shocks die out, potential output is in theory equal to the long run steady state. Actual observed output is then determined - with a given labour supply and productivity - by the demand side of the economy, though due to nominal demand rigidities, it may still deviate from potential output. Central banks can temporarily affect aggregate demand, but they have no influence over the steady state potential where real output will be determined by the supply-side factors and policies to improve productivity and increase the labour supply. (See also Motyovszki and Gabriel, 2013; Motyovszki 2013).

5.6 Fiscal Policy with NGDP-level Targeting

What then should be an appropriate fiscal policy to accompany NGDP-level targeting? In practice, fiscal policy choices may be more straightforward than with inflation targeting.

The general line taken by the Treasury currently in the UK is that because of the need to preserve the independent decision-making of the BoE, fiscal policy will be maintained in line with its monetary policy stance. Hence, the Chancellor has recently said, perhaps surprisingly, that, despite the increase the cost of living that the Bank's raising of the interest rate will engender, is to be supported, *even if it drives the UK economy into recession.*

With NGDP-level targeting the BoE would be more relaxed about temporary increases in the inflation rates, especially those created by supply shocks, and not immediately pursue a regime of continuous and rapid rate rises in the short run if there is a surge in the rate of inflation, as has currently been the case in 2022 and 2023.

The switch in targeting to NGDP-level, rather than a specific 2% inflation rate, implies a move towards a longer-term positioning towards inflation and growth. However, it needs to be understood that neither monetary policy nor fiscal policy alone are able to guarantee low inflationary moderate economic growth. An active fiscal policy, in harmony with a reformed monetary policy, can assist in providing fiscal space and fiscal incentives to assist the private and public sectors to increase productivity.

However, despite their importance, fiscal and monetary policy will not be able to deliver the continuous price stability required to accompany the sustained economic growth required in the UK. These demand-side policies will also require supply-side policies

focused especially on investment in technology and human capital, set in the context of systemic institutional reform to ensure optimum delivery of outputs.

There is also a need for an acceptance that - especially in a consumption-dominated economy such as the UK – sustainable increases in real wages are required to stimulate consumer demand, to enable the essential labour-saving and labour-augmenting investment to be made. However, consideration of these economic growth-oriented issues is a subject for another paper.

7. Conclusion

Currently, the BoE and its conduct of monetary policy, set in the context of targeting an inflation rate of 2%, to be achieved in the medium-term, has recently come in for criticism. Some of this contemporary criticism about when the tardiness of the Bank's interest rises may be ill-targeted. Monetary policy is complex, and the Bank's content and timing of its decision-making is not easy. We have attempted to explain that our own criticisms are aimed at what we see as mistaken theoretical approaches to the development of monetary policy, relying still on unobservable variables, and a target that is essentially ephemeral. We also conclude that the orthodox monetary policy pursued has failed empirically. What is required is a new targeting regime to achieve long-run price stability, together with an appreciation of the inter-lacing of monetary and fiscal policy in relation to managing aggregate demand to enable a modest, but sustained, increase in economic growth and in overall productivity.

However, trenchant our criticism may be of its monetary policy: we do not suggest that, *at this time*, this should mean that the independence of the BoE be called into question. Subsequently, unless the Bank's monetary policy development, and its inflation targeting, is reformed then some commentators may indeed question its independence. This position of those arguing against central bank independence rests principally on the proposition decisions which profoundly affect peoples' lives should not be placed in the hands of a technocratic elite, with little democratic accountability (Tucker 2018). Any change in the status of the Bank in relation to independence would require a wide-ranging political discussion.

Our view is that, given the theoretical and empirical criticism in this essay of inflation-rate targeting, a shift to Nominal Gross Domestic Product Level targeting would provide a superior rule-based approach to monetary policy. Such a move would provide a longer timescale framework, better-suited to the achievement of controlling inflation in the medium-term and with an explicit nominal growth objective.

This shift to NGDP-level targeting would deliver a focus on nominal economic growth that would also provide better democratic accountability, by offering better public understanding of central bank monetary policy. Together with an appropriate fiscal, and other supply-side, policies, we estimate that this combination of policies should enable a higher UK economic growth rate of 2% to be achieved, with an inflation rate of still around the current target of around 2%, though one which would be allowed to vary around this figure, without raising concerns or the need to raise interest rates in an obsessive policy to reach an arbitrary and impractical objective, especially when inflation exceeds 2%.

Finally, and taking account of the excessively pessimistic long-term projections of the UK debt-to-GDP ratio in the OBR July 2023 report, it is imperative that the UK returns to a modest economic growth path, encompassing a *minimum* 2% nominal GDP growth rate. We believe our suggested reform will be essential to achieve this desired outcome.

Tail Piece

As this report was concluded in August 2023, it is appropriate to summarize how the Bank of England's monetary policy stance has developed since then and referenced against the ECB and the US Federal Reserve. At its latest Monetary Policy Committee (MPC) meeting on May 9th, 2024, the Bank left interest rates at 5,25%, as they were in August 2023. The principal reason for leaving the rates unchanged during this nine-month period appears to have been that the majority on the MPC are concerned about the "stickiness" of the core inflation rate, especially the high rate of services inflation, and the prevalence of nominal and real wage rises.

As is pointed out in our paper the slower reduction in core inflation is related to a) the preponderance of services in the UK economy, and b) the delayed impact of energy prices rises on services and the inability of technology to achieve productivity increases in various of the services sectors involved.

Similar analyses apply to the Eurozone economy, though here inflation has been more subdued and has allowed the ECB to reduce rates in June by 0.25% points. A similar reduction has occurred in Canada. The US Federal Reserve has not reduced rates, principally because the Biden administration substantial fiscal stimulus is still driving forward the US economy and sustaining the US trade deficit, with negative consequences for the demand for the US long-term bonds.

A further concern of the BoE MPC is the still high real wage rises in the UK economy. However, it should be recognised that wage rises, and profit increases, are currently both consequences and not causes of price inflation. They are attempts by labour and capital respectively to attempt to regain previous shares in the new level of real income. Our recommendation of Nominal Gross Domestic Product Level targeting takes account of this temporary re-setting and would be likely to have led to earlier interest rate reductions, given a lower influence of expected expectations.

It is to be hoped that the MPC will belatedly recognise the gradual attempts of labour and capital to partially restore their relative positions between and within wage and profit shares, and may lower interest rates in August 2024.

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8. References

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Notes

[1] They are also employed by Finance ministries, including the UK Treasury in the United Kingdom
[2] For discussion, see Black et al 2018
[3] See more in Bojkova 2015
[4] See more in 'BOJ normalisation could strain global bond mark', *Reuters,* 31 May 2023, https://www.reuters.com/markets/rates-bonds/boj-normalisation-could-strain-global-bond-markets-ecb-2023-05-31/.
[5] Trimmed mean inflation rate is an alternative measure of the core inflation in the price index for personal consumption expenditure. For more details see Federal Reserve Bank Dallas (2023).
[6] In Europe – Credit Suisse was taken over by rival UBS in a forced rescue deal
[7] See more about the NAWM II model in Coenen et al 2018
[8] See more about the MMR model in Mazelis et al 2023
[9] See more about the ECB-BASE model in Angelini et al 2019
[10] Interview with Luis de Guindos, Vice-President of the ECB (ECB (2023a)
[11] Measures will be undertaken by the Green Deal Industrial Plan
[12] Source: Eurostat
[13] Reuters June 2, (2023), "Japan will vow to end deflation with bold monetary, flexible fiscal policy": https://www.reuters.com/markets/asia/japan-govt-will-vow-end-deflation-with-bold-monetary-flexible-fiscal-policy-2023-06-02/
[14] At the time of writing, data for April and May not available.
[15] Gross value added
[16] The rate is currently as of June 143.
[17] Another reason for the high inflation in the US appears to be the tight labour market. See more in Bernanke and Blanchard (2023), where they suggest that unless the ratio of vacancies to unemployed workers falls back below its pre-COVID level, inflation is unlikely to return to target in the next three years.
[18] The ECB chief economist, Phillip Lane, calls it a "catch-up phase" (Lane 2023b)
[19] Schnabel (2023b) describes the Eurozone situation where 25 banks own 40% of excess reserves
[20] All figures taken from the first report of the UK Productivity Commission, 2022