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coordinated and correlated response**

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**Monetary Policy Implications of Deviations in Inflation Targeting: The Need
for a Global Cooperative, Coordinated and Correlated Response**

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ABSTRACT**Monetary Policy Implications of Deviations in Inflation Targeting: The Need for a Global Cooperative, Coordinated and Correlated Response**

It is argued that “much of the variation in inflation is due to global factors such as imported goods and energy prices” and that much of that variation is expected to be transitory. However there are growing signs that such transitory nature of inflation may not be as transitory as was initially considered. As rightly argued, the extent and deviations of current inflationary levels necessitates extraordinary intervention – such as cannot be easily compared to previous experiences. To which it has to be added that the prevailing nature of inflation also necessitates a coordinated, cooperative global approach which incorporates the harnessing of similarities and expertise in historical supervisory and regulatory practices in facilitating a harmonized and correlated result. In order to better appreciate the magnitude of the issue at hand, reference needs to be made to past and current levels of energy prices, as well as other major contributors to current inflationary levels, and their implications for inflationary targeting and monetary policy. The nature and relationships involved in the inflationary dynamics is also not as straightforward and clear cut as it used to be and as it may appear to be – other previously absent variables having been incorporated into the equation. This paper aims to provide a clearer picture of the nature and relationships involved in the inflation dynamics – as well as illustrate the complexity of the relationships involved.

Further, by highlighting similarities in the review frameworks and approaches by several major central banking economies and regulators, the paper also aims to highlight and illustrate that whilst coordination and cooperation may prove to be a daunting task, several approaches can be adopted to facilitate harmonization and coordination.

Key words: inflation, energy prices, imports, wage rates, monetary policy, central bank independence, the Global Financial Crisis (GFC), the Global Pandemic Collapse (GPC), the Effective Lower Bound (ELB), flexible average inflation targeting

Monetary Policy Implications of Deviations in Inflation Targeting: The Need for a Global Cooperative, Coordinated and Correlated Response

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Introduction

Monetary Policy Implications of Deviations in Inflation Targeting

The current levels of uncertainty in decision making by several major economies in respect of the asset purchasing programs and particularly in respect of when, how or whether to commence winding up activities, bear several monetary policy implications. This could in turn, impact outcomes – both intended and unintended, in relation to carbon, and more specifically, oil pricing strategies – which are ideally targeted at mitigating carbon emissions, whilst fostering climate goals and objectives.

In order to better appreciate the magnitude of the issue at hand, reference needs to be made to past and current levels of energy prices, as well as other major contributors to current inflationary levels, and their implications for inflationary targeting and monetary policy. The nature and relationships involved in the inflationary dynamics is also not as straightforward and clear cut as it used to be and as it may appear to be – other previously absent variables having been incorporated into the equation. This paper aims to provide a clearer picture of the nature and relationships involved in the inflation dynamics – as well as illustrate the complexity of the relationships involved.

Further, by highlighting similarities in the review frameworks and approaches by several major central banking economies and regulators, the paper aims to highlight and illustrate

that whilst coordination and cooperation may prove to be a daunting task, several approaches can be adopted to facilitate harmonization and coordination.

Possible Effects of Oil Price Increases: Intended and Unintended Environmental Impacts

It is argued (see FAZ:2021a) that even though high energy prices should serve towards climate goals and environmental protection – as well as a deterrent to high consumption levels, high oil prices also serve as an incentive for oil states and oil companies to invest more in oil demand. “When the price of oil rises, people consume less and think about more ways to save energy or produce less oil-intensive products - a lesson from the oil crisis of the 1970s.” Furthermore, it is stated that “in order to have a “directional” effect, a high price for energy is fundamentally desirable, since it creates an incentive for careful or economical use - however, high energy prices on the supply side naturally also create an incentive to expand the supply.”

Could the afore mentioned effects be really considered to be “the revenge of the old economy”, which understandably having lost out on investment to the digital economy, in recent years, can simply find alternative ways of triggering the need to invest in greater production? More importantly, how can technology be harnessed to ensure that those intended effects, through oil price increases, are realized? The inflationary impacts of high energy prices² and monetary policies will now be considered.

² “So far, the oil countries have showed some reluctance and hesitation and do not want to go beyond their slow monthly increase in oil production of 400,000 barrels a day. And that, although the industrialized countries are now even threatening them: Not only America's President Joe Biden has signaled that if the oil-producing countries do not help fight high energy prices and thus inflation by producing more oil, politics could also tap into the national emergency reserves of oil - and flood the market with it.” For further information see FAZ (2021). “Vor der Opec-Sitzung: Das Dilemma der teuren Energie” (faz.net)

Energy Prices: Inflationary Impacts and Monetary Policy Decisions

On the 16th March 2022, Federal Reserve officials voted to increase interest rates and signaled six more rate rises before the year's end – the most “aggressive” pace in 15 years – the first rate increase since 2018 – with a rise in the benchmark deferral funds rate by a quarter percentage points to a range between 0.25% and 0.5%.

Even though such a pace in the raise in interest rates by the Federal Reserve, had been anticipated – with a slower pace to be adopted by counterparts such as the European Central Bank, there are concerns about the intended effects of such a pace in the increase of interest rates – with already mounting concerns in respect of possible impending recessions and the loss of employment.

The following day, on the 17th March 2022, the Bank of England, for the third consecutive meeting, decided to raise the bank Rate, back to its pre pandemic level of 0.75%.

Meanwhile the European Central Bank, which had adopted a differing stance to the “hawkish” approach being adopted by its counterparts, particularly in relation to when and in what manner to wind down pandemic stimulus, agreed the week before to “stop pumping money into its markets this summer” paving the way for possible rate increase in 2022 – hence underlining its slower and more cautious approach.

Meanwhile energy prices are at around nearly double their usual rates – when compared to their levels exactly a year before. Rising inflation, at the present, constitutes a challenge for many central banks - with differing views on the tightening or relaxation of monetary policy stances. In a rather unusual turn of events, the Bank of England, initially chose not to follow the Federal Reserve's position in increasing interest rates. However, on the 16th December 2021, following months of speculations and concerns regarding inflation risks, the Monetary

Policy Committee (MPC) of the Bank of England, for the second consecutive month – voting 8-1 in favor of higher interest rates – as well as admitting that “inflation was heading in the direction of around 6%”, decided to raise interest rates from 0.1% to 0.25% - a first increase in more than three years (Financial Times: 2021). Even though it appeared that financial markets were surprised at the announcement, this follows growing and persistent increases in inflation, rising energy prices – as well as costs of living. Further, the MPC voted to end its quantitative easing program – on a unanimous basis – having created £895 billion to purchase mostly UK government bonds.

In highlighting how differing stances from the position taken by the Federal Reserve could impact other monetary policy stances, it is added that “America's stance could place the ECB under pressure in two ways: argumentative and technical. From a purely technical point of view, the pressure on Europe's central bank could increase if the transatlantic interest rate differential widened and the exchange rate of the dollar against the euro became stronger and stronger..... Immediately after the Fed's decision, the dollar's exchange rate rose against the euro. “FAZ (2021b).

Differing Monetary Policy Responses

Further differences in monetary policy approaches are also illustrated by the timing and manner of winding up, in respect of the asset purchase programs. As reported (FAZ :2021b):

- “Whilst the Fed announced its intention to stop its bond purchases by the end of June 2022 in eight even steps;
- The ECB, so far, has “only scaled back its crisis program”

The ECB meanwhile has signaled that since it is expecting inflation to fall in the coming

months, there will be an eventual hike in interest rates - although this, it is expected, would follow at a much slower pace than is the case with the Fed Reserve or the Bank of England.

Given the current focus on cutting drastically on fossil fuels – on which certain economies appear to be significantly dependent, could efforts also be channeled to other sectors – which if not equally are as culpable for environmental impacts, do have some contributory impacts – and particularly those whose involvement and private sector expertise could potentially be harnessed towards achieving environmental goals and objectives? In this respect, the role of renewable energy also becomes highly relevant and important.

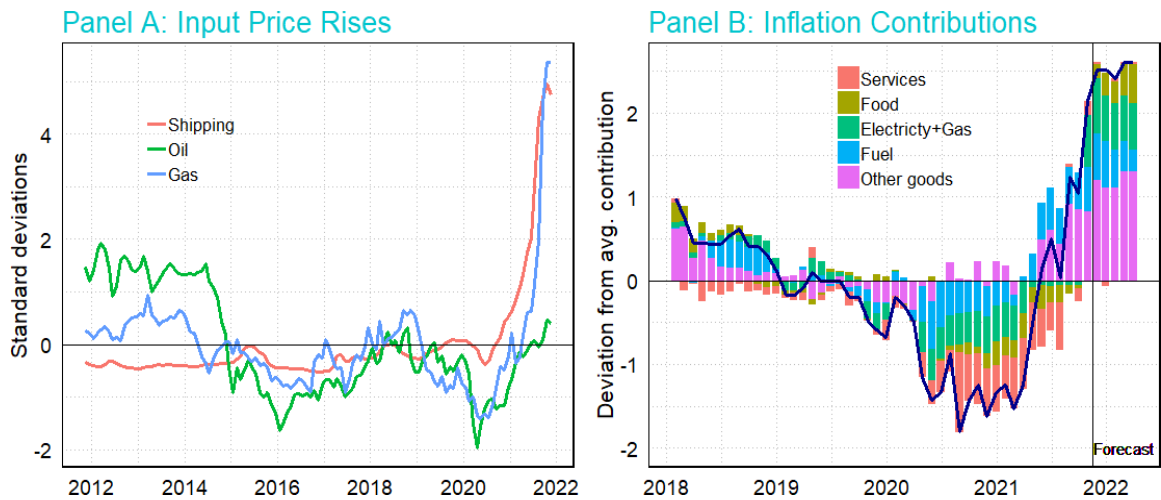
Is there any gain or effectiveness from global policy cooperation, or coordination? Would global cooperation result in additional and overall net gains in practice – as well as theoretically? These constitute some of the questions which this paper aims to address.

The next section proceeds with a discussion on the background to the topic, namely the literature review section. As well as introducing the concept of the “output gap”, historical comparisons in inflation trends, namely between the UK and US, are discussed. Further, in illustrating appropriate monetary policy responses, the Clarida, Galí, and Gertler (2002) Model is introduced. The third section illustrates and considers the complex nature of inflation and contributory factors – with consideration of how energy, labour and capital have impacted inflationary levels – as well as the need for consideration of other factors such as the more recent “secondary objective” of the Bank of England to support environmental sustainability.

The fourth section considers how the facilitation of consistency, transparency and disclosure of reporting instruments – as well as global coordination across other instruments, can be

Source: Bank of England, (2021). “Inflation Now and Then”, Remarks given by Jonathan Haskel, External Member of the Monetary Policy Committee, Bank of England, and Imperial College Business School, Imperial College, London Adam Smith Business School, University of Glasgow 23 November 2021 at page 16

Chart 8: Inflation outlook



Source: ONS, Eikon by Refinitiv, Bank of England & Author calculations

Note: Panel A shows three series normalised by their mean and standard deviation for the period 2011-2021. Shipping is the HARPEX shipping price index. Oil is the spot price for Brent crude oil. Gas is the UK national balancing point price for next day delivery. All series plotted as monthly averages with the last data point in November 2021. Panel B shows the contributions and forecasted contributions from the Bank of England November 2021 MPR of different components of the CPI basked to CPI inflation. Each contribution is expressed as deviations from its average contributions from 2010-2021. The forecast ends in March 2022.

Section Two - Literature Review and Background to the Topic

In illustrating and asserting the point that:

- i) “inflation today is driven by long run expected inflation plus all current and expected future deviations in real marginal costs plus adjustment costs”, with the requirement that inflation-targeting central banks must not only look at expectations, and the costs incurred, and expected to be incurred by firms, if they want to understand how firms are likely to be setting their prices;
- ii) It is also important to “understand and communicate not just recent input price moves, but also how those input prices might be expected to move in the future”, as well as understanding the importance of businesses and households expecting these gaps³ to close in the long run – a role which the central bank has a part to play in;

Jonathan Haskel makes reference to the following concepts and equations:

That, namely:-

- “for an open economy like the United Kingdom, it's useful to further divide cost drivers into external and internal ones” – illustrating through an equation which accentuates the distinction by “expanding the input price terms with the external terms for energy and import prices ” (Haskel, 2021: 5):

³ He adds that “the reason for that is the economy is constantly buffeted by shocks....With few huge ones recently with the economic impact of Covid-19, and the related global supply shortages and swings in energy prices. These shocks often move faster than firms and households are willing or able to adjust and lead to short-term inflationary pressures represented by gaps between actual marginal costs and an unobserved theoretical marginal cost mc^* consistent with what we expect marginal costs to be absent these shocks. When these gaps, open up firms are moved away from their desired/required markup and will adjust prices accordingly.” See page 5

The Output Gap

In making reference to the assumption is that “if demand moves ahead of what the domestic economy is able to supply, that will tend to put pressure on wages as workers are asked to work harder and are able to move more easily between competing firms seeking to expand, and that similarly, higher utilisation rates of the capital stock [CAPU] leads to higher returns in the short run (higher p_k) but eventually creates costs pressures as the capital stock strains under demand,” the output gap is introduced as follows (see Haskel; 2021:6) :

$$\bar{p} - \bar{p}^* \propto y - y^* \quad \text{and}$$

$$\bar{p}_k - \bar{p}_k^* \propto CAPU \propto y - y^*$$

- “The proportional relationships between these demand-induced marginal cost gaps and real quantities are folded together in the summary statistic that is the output gap $[y - y^*]$.”

He further adds, that substituting the output gap for the p_l and p_k terms results in a final expression for the determinants of price inflation.

As highlighted under the introductory section, the Monetary Policy Committee (MPC) of the Bank of England, for the second consecutive month – voting 8-1 in favor of higher interest rates – as well as admitting that “inflation was heading in the direction of around 6%” decided to raise interest rates from 0.1% to 0.25% - a first increase in more than three years in December 2021. This was followed by a rate rise to 0.5% on the 3rd February 2022, “its first back-to-back interest rate rise since 2004” – with a forecast that inflation would increase to 7.25% in April 2022 (Financial Times, 2022d).

Historical comparisons in inflation trends (the UK and US)

- In the United Kingdom, inflation, as measured by the annual rise in the consumer price index (CPI), was 4.2% in October 2021. Latest MPC forecast projects inflation to peak at around 5 percent in the second quarter of 2022. Since 1997, average inflation has

been... 2%, the current target.

- There has been variation around that 2% since then. On average, of every deviation of inflation from target,
 - a. 24% has been due to food and energy,
 - b. 13% due to taxes like VAT and
 - c. 25% due to sharp exchange rate movements and imported prices.

“ Thus around 62% of inflation deviations from target is due to outside forces that are difficult for a central bank to control in the short run.” (see Haskel; 2021:2).

According to Bank of England officials, following the rate rise to 0,5% in February 2022, the rise in official interest rates - coupled with “the highest rate of inflation for more than 30 years”, would reduce disposable household incomes by 2% in 2022 – with a further 0.5% decrease in 2023 – the biggest annual reduction in spending power since 1990.

With a 5-4 majority, the Bank’s Monetary Policy Committee, on the 3rd February 2022, also voted to increase the cost of borrowing from 0.25% to 0.5% (with the minority even wanted an increase to 0.75%). (Financial Times, 2022d).

In the United States,

- The October consumer price index report showed an unexpected surge in inflation. The monthly print corresponding to an annualized rate exceeding 10 percent, while the year-over-year increase was 6.2 percent—the highest since December 1990. Despite the highest wage gains in years, inflation this year has wiped out any real wage increase for

the average worker.⁴

- There has been a notable increase in the prices of energy, food, goods, and services as well as the cost of owning a home. Even trimmed mean measures of inflation that exclude some big price increases, such as the Cleveland Fed and the Dallas Fed measures, report inflation rates above the Fed's 2 percent target. Diffusion indexes of price changes, which are often useful in detecting turning points in the data, show an increasing number of categories with 3 or 12-month inflation exceeding 3 percent, compared with earlier this year.”

In its summary of economic projections, as highlighted in the March 2022 Report on economic projections from the Federal Open Market Committee and Federal Reserve Board, indications of impending uncertainty are illustrated whereby it is stated that:

“The economic projections provided by the members of the Board of Governors and the presidents of the Federal Reserve Banks inform discussions of monetary policy among policymakers and can aid public understanding of the basis for policy actions. Considerable uncertainty attends these projections, however... ..”

As with real activity and inflation, the outlook for the future path of the federal funds rate is subject to considerable uncertainty. This uncertainty arises primarily because each participant’s assessment of the appropriate stance of monetary policy depends importantly on the evolution of real activity and inflation over time. If economic conditions evolve in an unexpected manner, then assessments of the appropriate setting of the federal funds rate would change from that point forward.”

⁴ “High inflation is painful to Americans who have little choice about the goods and services they buy for everyday living. Prices are up significantly at the grocery store, which is a major problem for many individuals and families. Unlike earlier this summer, price pressures are no longer concentrated in a few categories, they appear to have broadened.” See Speech by Governor Waller on the economic outlook - Federal Reserve Board, November 19, 2021 *Economic Outlook* Governor Christopher J. Waller At the Center for Financial Stability, New York, New York

Even though prevailing economic uncertainty is a crucial factor that has contributed to the reluctance on the part of several major economies' central banks to tighten monetary policies, as well as set stipulated programs and schedules for the winding down of their asset purchase programs,

Arguments propounded by Waller in support of the need to reduce the Fed Reserve's balance sheet are as follows:

- First, it was expanded for emergency reasons due to the pandemic. As the emergency passes, those actions could be undone to get the balance sheet down to something close to its pre-pandemic trend.
- Second, by doing so, the balance sheet space could be freed up in the event that expansion was required in the future to deal with economic shocks.
- Third, the private sector appears to be inundated with liquidity, as evidenced by the large take-up at the overnight reverse repurchase agreement facility. Draining some of this liquidity would help maintain smooth market functioning.
- The Committee would need to decide what type of reinvestment policy to have in place.⁵ Based on past experience, an effective way to gradually reduce the balance sheet to a more efficient level is to change that reinvestment policy to limit, or cease, reinvestment.

He also adds that in his opinion, inflationary pressures could be attributed to constraints on the supply side, which may be beginning to improve, as well as strong demand – with rising wages on a more sustained basis than they have in more than 20 years. Furthermore, and of

⁵ “Currently, when securities on the Fed's balance sheet mature, the proceeds are reinvested in new securities, keeping the balance sheet growing in line with net purchases. Under this policy, when net asset purchases cease, reinvestment will keep the balance sheet constant at the size at that time.”

crucial importance “to the path of inflation”, in his view, will be whether input cost increases are consistently reflected in final goods prices. In support of his argument that inflationary pressures could be attributed to constraints on the supply side, Haskel adds that while oil prices and shipping rates can be quite clearly linked to the pandemic and global supply issues, the recent volatility in gas prices could be linked to recent efforts to decarbonise the economy.

Monetary Policy Responses: What is Considered Appropriate?

In highlighting the difficulties and challenges confronted through global monetary policy cooperation, coordination and correlation, Clarida (2021) makes references to the goals and objectives of the ECB, the Bank of England and the Federal Reserve and adds that even though all major central banks are mandated to achieve price stability in some form or fashion, their mandates typically include other obligations that vary across jurisdictions. “Because these obligations can, and sometimes do, require central banks to make a tradeoff - for example, in the United States, between inflation and employment in the presence of supply shocks - defining the objective that a cooperative agreement would choose to maximize would be a formidable task.”⁶

Given such challenges, he draws attention to a model through which “globally integrated capital markets can introduce policy correlation even in the absence of policy coordination or cooperation” and which is illustrated as follows:

The Clarida, Galí, and Gertler (2002) Model

- Which provides a simple illustration of how such correlation can come about. In the "home"

⁶ “For example, the Federal Reserve is mandated to pursue policies that achieve maximum employment and price stability. The European Central Bank (ECB) is mandated by treaty to pursue price stability but also has a secondary mandate to contribute to achieving the objectives of the European Union, which include balanced economic growth and full employment. Similarly, the Bank of England's primary objective is to achieve the U.K. government's target of 2 percent inflation, but its secondary objective is to support the government's policy aims, including those for employment, growth, and—more recently—environmental sustainability.”

country, the optimal inflation-targeting monetary policy can be written as a Taylor-type rule:

$$R_t = r_t + (1 + \lambda\alpha)\pi_t, R_t = r_t + (1 + \lambda\alpha)\pi_t,$$

- where r_t is the "neutral" interest rate in the home country consistent with price stability and trend growth and π_t is inflation in the home country. The ratio λ/α captures the extent to which the home central bank trades off its inflation and gross domestic product (GDP) objectives when they are in conflict.
- The parameter α indexes the priority the central bank places on stabilizing GDP growth relative to its trend path. When α is large, the central bank leans against high inflation less aggressively than it would were α small. With an integrated global capital market, the neutral policy rate at home is a function of trend GDP growth at home as well as expected foreign GDP growth:
 - $r_t = 2E_t\{\Delta y_{t+1}^-\} + E_t\{\Delta y_{t+1}^*\}$.
 - To the extent the foreign central bank has a comparative advantage in tracking or forecasting foreign output growth—which, of course, it should, since such growth will depend on the foreign central bank's monetary policy—sharing this information with the home central bank can improve that institution's estimate of the home equilibrium real interest rate and thus the effectiveness of its policy rule in meeting its domestic objectives.
 - The foreign central bank sets its policy rate in an analogous fashion:
 - $R_t^* = r_t^* + (1 + \lambda\alpha^*)\pi_t^*$.
 - The ratio λ/α^* captures the extent to which the foreign central bank trades off its inflation and GDP objectives when they are in conflict, and note that this tradeoff may be different than that of the home central bank. With an integrated global capital market, the neutral policy rate abroad is given by
 - $r_t^* = 2E_t\{\Delta y_{t+1}^{*-}\} + E_t\{\Delta y_{t+1}^*\}$.

In drawing similarities between the Fed Reserve and ECB's framework reviews, he adds that similar to the Federal Reserve, the ECB launched a review of its monetary policy strategy in January 2020 and that since the time of its previous strategy review in 2003, like the Fed, the ECB observed "profound structural changes in the global and euro-area economies that have driven down neutral interest rates and increased the incidence and duration of episodes in which nominal policy interest rates are close to the ELB."

He concludes by saying that "the similarities in the two framework evolutions are due to the fact that powerful common global forces are driving down neutral policy rates and limiting the effectiveness of monetary policy in downturns to offset declines in aggregate demand."

The Complex Nature of Inflation

The unprecedentedly unique nature of inflation and the circumstances which have made it different from that which previously existed, are not only considered to have been triggered through a “drive by pandemic-related imbalances between policy supported demand, which is said to have remained robust, but also COVID disrupted supply, which on the other hand, is regarded as having been slow to recover.” Other factors which have contributed to its unique nature from that which existed previously, are considered to include the economy – considered different because of “weaker links between wage and price inflation, greater global price competition, longer term structural factors – including an aging population”. Of greater impact and significance is the difference in the approach and style adopted by central banks such as the Federal Reserve, according to Daly (2022:5), who is of the opinion that “one major evolution which separates today’s Federal Reserve from that of 50 years ago is a deep understanding that inflation expectations influence future inflation – namely, if people expect inflation to persist, then it does.”

In explaining the underlying causes behind inflation, D’Acunto and Weber (2022) add that whilst production stopped, following strict lockdown policies and COVID closures globally, with consumers accumulating savings – fueled by generous fiscal support through different fiscal measures, with a re start in production activities and supply chains, substantial demand pressure was placed on an already “stressed” supply side – resulting ultimately, to a sharp rise in prices.

Further, they add that in addition to demand pressures and supply-chain disruptions, labour market pressures, as well as the fact that a substantial share of the working population were retiring early, following months of inactivity, constituted part of the additional pressures on

the recovery and restart of processes worldwide.

Even though D'Acunto and Weber are in agreement with the European Central Bank's prediction that the causes of the post COVID 19 surge in inflation "are likely to be temporary and resolve in the medium run as supply activities adjust", they raise concerns about what in their opinion, constitutes an unresolved and unincorporated part of the puzzle, namely , the impact of consumers' inflation expectations.

Hence will the Fed Reserve's approach in engaging the public through greater transparency and communication over the years, a practice and understanding which Daly considers vital in managing actual inflation be key to restoring the commitment to price stability and combating inflation? – *"in order to manage actual inflation, policy makers also have to manage inflation psychology - through the help of households, businesses and market participants."*

Uncertainty, however, it is still admitted, constitutes another piece of the puzzle, which needs to be addressed.

In addressing inflation Haskel adds (2021:7) that :

- Firstly, inflation will be determined in part by shocks to energy and import prices. But these are often independent of domestic economic conditions (e.g. they might be determined by socio-political or natural (e.g. weather) events in raw-material exporting countries). Now, monetary policy could try to offset these effects.⁷
- Second, the effects on inflation of, say, energy prices, depend on what other prices do. If a rise in energy prices is met by a fall in other prices, say wages, then inflation is muted.

⁷ "For example, sharply raising interest rates in response to a significant increase in oil prices may provide a modest cushion against a jump in the inflation rate through a stronger pound. But any real reduction in UK activity stemming from the rise in interest rates, he further adds, will have little to no impact on the fundamental global supply imbalance underlying the energy price change."

- Third, current rises in imports prices are often described as “supply side” problems.⁸ Shortages of, for example, sea containers due to ports being closed due to Covid would be an example. But some of the price rises are due to the inability to supply....

The importance of understanding and appreciating the relationship between rising energy prices, labour and capital, is further, accentuated - since in his view, “inflation can be boosted by rising energy prices as firms react to the prices of their inputs but it can be affected by the prices of other inputs too, such as those of labour and capital (see 2021:10).”

The above mentioned factors, energy, labour and capital have definitely impacted inflationary levels – however other factors such as the more recent “secondary objective” of the Bank of England to support environmental sustainability, need to be considered – in addition to monetary policy initiatives, if inflation is to be effectively addressed. As previously highlighted, the role of renewable energy, as opposed to mere decarbonization of carbon, also becomes highly relevant and important – as well as the role and engagement of key technologies which will make a material difference to combating climate change. Further, the engagement of such technologies in facilitating the transparency of supply chains, could also serve as a means of early detection of possible disruptions in such supply chains – which could greatly alleviate supply pressures.

Facilitating Consistency, Transparency and Disclosure of Reporting Instruments: Enabling Opportunities for Coordination Across Instruments

In respect of environmental targets and objectives, which also in recent years, have contributed to inflation levels, Article 9 of the Paris Agreement sets out various means whereby opportunities for coordination – as well as promoting mitigation and adaptation ambitions – as well as enhancing public and private sector participation in the implementation of nationally determined contributions, can be achieved.

Under paragraph 1, it states that developed country Parties shall provide financial resources to assist developing country Parties with respect to both mitigation and adaptation in continuation of their existing obligations under the Convention.

As well as biennial communication (paragraph 5), the importance of providing transparent

⁸ “And that, at least some “supply side” problems might be due to the strong demand side.”

and consistent information on support for developing country Parties provided and mobilized through public interventions biennially is also highlighted under paragraph 7. This should serve to promote consistency, transparency and disclosure of reporting instruments.

To the extent that COP 26 has taken huge steps and efforts to engage in the above mentioned points, even though challenges still persist in the areas of mitigation and particularly adaptation, a huge realization of the goals and objectives of the Paris Agreement could be considered to have been realized.

Within the framework of transparency and disclosure, innovative techniques could also be engaged in supply chains and their management in tracing their origins and pathways. However, global efforts and ongoing initiatives will not only require a focus – as well as the engagement of innovative technologies, but also a consideration of other channels.

The United Nations Emissions Gap Report also considers “six entry points for progressing towards closing the emissions gap, that is, the path towards net zero carbon emissions, through transformational change in the following areas”:

- (a) air pollution, air quality, health;
- (b) urbanization;
- (c) governance, education, employment;
- (d) digitalization;
- (e) energy- and material-efficient services for raising living standards; and
- (f) land use, food security, bioenergy.

In its roadmap towards achieving decarbonization within the aviation industry, the following elements are highlighted by the International Coalition for Sustainable Aviation (ICSA: page 1):

Deploying near-term technology solutions (efficiency and operational measures and alternative fuels with lower lifecycle emissions than fossil jet fuel);

- Addressing non-CO₂ effects through mitigation measures;
- Investing in transformative, breakthrough clean aviation technologies;

- Strengthening the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA);
- Strengthening the ICAO CO2 standard;
- Revisiting aviation subsidies;
- Developing new mobility solutions to support modal shift;
- Creating new business models for the aviation industry;
- Climate-proofing aviation against the effects of a changing climate; and
- Ensuring compatibility with the Paris Agreement

“Enhanced action by G20 members will be essential for the global mitigation efforts. Legitimacy for decarbonization therefore requires massive social mobilization and investments in social cohesion to avoid exclusion and resistance to change. Just and timely transitions towards sustainability need to be developed, taking into account the interests and rights of people vulnerable to the impacts of climate change, of people and regions where decarbonization requires structural adjustments, and of future generations.”

It is furthermore added that “Dramatic strengthening of the NDCs is needed in 2020 – with countries having to increase their NDC ambitions threefold to achieve the well below 2°C goal and more than fivefold to achieve the 1.5°C goal.” (UN, 2019: xxi)

Global Coordination Across Other Instruments

Global cooperation between the Federal Reserve and the Bank for International Settlements as established recently, and aimed at fostering “dialogue, collaboration and knowledge-sharing among central banks and other authorities and institutions - as well as increasing the synergies of the New York Innovation Center” – particularly in respect of areas such as central bank digital currencies also demonstrates growing efforts and initiatives aimed at

facilitating global cooperation and partnerships.

Are the current variations in inflation – as well as inflation levels expected to be “transitory”?

Waller adds that even though it has been argued that because price pressures connected to supply constraints are transitory, they will come to an end, hence monetary policy does not need to respond to temporary price pressures, that he finds this argument puzzling for the following reasons:

- First, all shocks tend to be transitory and eventually fade away; by this logic, the Fed should never respond to any shocks, but it sometimes does, as it should.
- Second, the macroeconomic models we use to guide policy typically have cost shocks built in that cause inflation to move. In those models, appropriate monetary policy responds to these inflation movements; it doesn't ignore them, even though they are transitory.
- Finally, the choice to take a policy action depends on how large the shocks are and how long they are expected to persist.

In questioning the effectiveness and gains of global monetary policy cooperation, Clarida whilst highlighting those concerns related to the erosion of central bank credibility and public support for central bank independence as a result of global cooperation, adds that “information about their policy reaction functions can, and in my observation certainly does, enhance the design and effectiveness of monetary policy execution for each country.” However, he also states that while international monetary policy coordination may enhance the efficiency of monetary policy execution, that doubts exist in relation to whether there are additional material, reliable, and robust gains that would flow from a formal regime of binding monetary policy cooperation - at least among major G-7 economies with flexible

exchange rates, open capital accounts, and central bank mandates that include price stability – and that whilst gains might exist in theory, they likely do not exceed the full cost of committing to such an arrangement in practice. Ultimately he concludes that “to achieve the theoretical gains to international monetary policy cooperation, policy in *each* country must be set with reference to an index of inflation in *all* countries party to the cooperative agreement.”

Conclusion

It is argued that “much of the variation in inflation is due to global factors such as imported goods and energy prices” and that much of that variation is expected to be transitory. However there are growing signs that such transitory nature of inflation may not be as transitory as was initially considered. As rightly argued, the extent of current inflationary levels necessitates extraordinary intervention – such as cannot be easily compared to previous experiences. To which it has to be added that the prevailing nature of inflation also necessitates a coordinated, cooperative global approach which incorporates the harnessing of similarities and expertise in historical supervisory and regulatory practices in facilitating a harmonized and correlated result.

As the recent pandemic has illustrated, the nature of uncertainty – and prevailing levels of uncertainty, makes it difficult to restrict the global nature and challenges to just one border and territory. Were the pandemic to be controlled in one jurisdiction or even one continent, there would still be no guarantee that a new variant may not resurface in those neglected territories with low vaccine intakes – which are more vulnerable and prone to variant outbreaks. Hence a globally coordinated response will be required if greater certainty in the decision making process by central banks, is to be achieved. More specifically and importantly in respect of the need to reduce bank balance sheets in winding down asset purchase programs that were instigated at the onset of the pandemic. The Global Pandemic Collapse (GPC), differs extremely to that triggered by the Global Financial Crisis –

principally because of the levels of uncertainty involved as regards when or how the pandemic will end. Not merely by virtue of the medical impact involved, but also impacts attributed to disruptions in supply chains – as well as its resulting impacts on prices.

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