

Monetary Growth, Financial Structure, and Inflation

The Post-Pandemic New Normal

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It is argued that a key question of the operation of monetary policy is its decomposition into a price effect and an output effect. Specifically, the association between the easing of global monetary and liquidity conditions on the one hand, and the significant spurt in inflation, on the other, in recent times is probed to conclude that across the world, there seems to be an association. The issues of monetary stability, price stability and financial stability are also intimately interlinked.

Economists have always been interested in monetary theory as one branch of economics that is closest to reality (Hicks 1967). However, perceptions have differed on the impact of money on the economy. Right up to the 1980s, monetary policy was almost synonymous with changes in the money supply. In the 1990s, however, widespread disillusion with monetary targeting set in, and emphasis shifted away from money supply to interest rates as the main instrument of monetary policy. The transmission of monetary impulses to the macroeconomy, viz, output, capacity utilisation, employment, and inflation, have been, over historical time, viewed through different lenses. It is in this context that this paper investigates the post-pandemic spurt in inflation and its association with the huge expansion in money supply, consequent to the policy of quantitative easing.

The focus of this paper is threefold. First, we take review of the link between monetary policy on the one hand, and growth and inflation on the other. Second, in light of the recent spurt in inflation, we look at its possible association with excess monetary growth globally. Third, we examine whether the transmission process is strongly influenced by the financial superstructure of an economy.

How Does a Monetary Expansion Translate into Higher Growth and Inflation?

Analytically, the traditional way to capture monetary policy is via a change in money stock. In the undergraduate textbook IS-LM model, this is captured through a shift of the positively sloped LM curve (capturing the output-interest rate combinations for all of which the money market is in equilibrium). However, as most of the central banks operate through a policy rate, there are apprehensions that a number of “central banks, including the US Federal Reserve, now pay little attention to monetary aggregates in conducting policy” (Romer 2000). Hence, Romer (2000) tried to capture the essence of IS-LM model via a horizontal monetary policy (MP) curve and the usual negatively sloped IS-curve.

Whatever be the interpretation or representation of monetary policy, in terms of first principles, the impact of an expansionary monetary policy can be thought of in terms of two distinct entities, viz, (i) its impact on demand and (ii) its impact on output/supply. We will treat these two effects separately.

Impact of an expansionary monetary policy on aggregate demand: There is a large literature on the transmission mechanism of monetary policy. Broadly speaking, we can

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distinguish at least five broad viewpoints, viz, (i) The Quantity Theory (QT) approach (1800–1935); (ii) Keynesian Theory (1936–65); (iii) Monetarism (1965–90); (iv) New Consensus Macroeconomics (NCM) (1990–present); and (v) Post-Keynesian Theory. We refrain from reviewing this vast literature and instead focus on the currently prevalent standard mainstream version of NCM.¹ Admittedly, there are two components in the monetary transmission mechanism: (i) the speed at which the commercial banks pick up the central bank's signals (the “inside lag”) and (ii) the mechanism of pick-up of the signals sent by the commercial banks to the real sector (the “outside lag”) (Rangarajan 2020).

The macro dynamics of the NCM (in its closed economy version) is usually described in terms of the following three equations:²

$$Y_g(t) = \alpha_0 + \alpha_1 Y_g(t-1) - \alpha_2 r(t) + u_1(t) \quad \dots (1)$$

$$\Delta\pi(t) = \beta_1 Y_g(t) + \beta_2 E_t(\pi(t+1)) + u_2(t) \quad \dots (2)$$

$$r(t) = i(t) - E_t(\pi(t+1)) = \delta_1 Y_g(t) + \delta_2 (\pi(t) - \pi^*) + r_n \quad \dots (3)$$

where the Greek letters are all positive parameters, $u_i(t)$, $i = 1, 2$ are stochastic shocks at time t , $E_t(\cdot)$ denotes expectations of a variable formed at time t and Δ is the usual first difference operator.

The variables are defined as follows:

$Y_g(t)$ = output gap [$(Y(t) - Y_n)$]; $Y(t)$ is current output and Y_n is the non-accelerating inflation rate of unemployment (NAIRU);

$\pi(t)$: inflation rate;

$i(t)$: nominal interest rate;

$r(t)$: real interest rate;

π^* : target inflation rate;

r_n : equilibrium real rate of interest

Equation (1) is the aggregate demand equation and postulates that the output gap (actual GDP minus potential GDP) depends on (i) its own past value; (ii) its expected future value; and (iii) the real rate of interest. This equation derives from the inter-temporal optimisation of lifetime expected utility subject to a budget constraint (Blanchard and Fisher 1988).

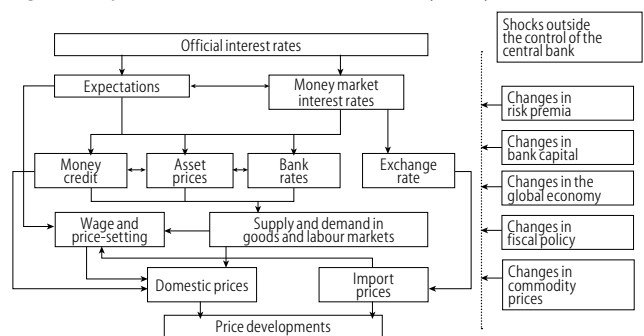
Next in equation (2), we have the vertical Phillips curve with inflation determined by (i) the current output gap; (ii) past inflation; and (iii) future expected inflation. As we will see below, this can be interpreted as the short-run aggregate supply function.

The last NCM equation (3) is a monetary policy rule specifying the real interest rate as a function of (i) deviation of current inflation from the “inflation target,” (ii) past output gap, and (iii) the equilibrium real rate of interest.³

The question that naturally poses itself is whether the steady state defined by neoclassical economists as $Y_g(t) = 0$ also assures us of $\pi(t)$ equals the target inflation rate π^* in which case we would also have the real interest rate at its natural level $r(t) = r_n$. In the NCM system as described above, such a steady state is not guaranteed (Taylor 1980). However, as shown in Setterfield (2005), this can be remedied by a slight modification to the monetary policy rule (3) as follows:

$$\Delta r(t) = \delta_1 Y_g(t) + \delta_2 (\pi(t) - \pi^*) \quad \dots (4)$$

Figure 1: Major Transmission Channels of Monetary Policy



Source: ECB, Transmission mechanism of monetary policy (undated), <https://www.ecb.europa.eu/mopo/intro/transmission/html/index.en.html>.

Turning now to the transmission channels of monetary policy in the NCM, Bernanke and Gertler (1995) first discuss the conventional direct interest rate effects that focuses on the impact of short-term policy rate changes on the cost of capital (Ravenna and Walsh 2006). In this view, it is emphasised that working capital is a necessary input to the production process (particularly for activities with high liquidity needs such as agriculture). After some lag, short-term rate changes also affect the long end of the yield curve. Thus, interest rate increases act like adverse cost-push shocks with changes in interest rates affecting money market rates and then affecting the cost of capital and investment (Rangarajan and Arif 1990; Hawtrey 1919). However, while direct interest effects are undeniably an element of the transmission narrative, it is doubtful if they can account fully for the magnitude of the effects that monetary policy seems to have on the real economy. It is also doubtful if the direct interest rate effect can account for the significant impact of monetary policy changes on residential investment and its relatively muted impact on inventories.⁴

Going beyond the direct interest rate effects channel, NCM proponents have therefore considered a number of other channels (Figure 1).

Asset prices channel: This channel works via an effect on equity, real estate prices, etc. So far as consumer spending is concerned, with a fall in the policy rate, there is a perceived increase in wealth effect due to a rise in the values of equity and real estate. This could spill over into increased consumer spending. The impact of monetary policy on private investment can be understood via Tobin's q (Tobin 1969). This is defined as the ratio of the stock market value of a firm to the replacement cost of its physical capital. A lowering of interest rates shifts investors' portfolios from debt instruments to equities, leading to a rise in the price of the latter. For the firm, a high value for its stock means a greater volume of investment being financed by a given IPO lot size. Thus, a rise in q brought about by a fall in the policy rate increases aggregate demand through investment spending.

Credit channel: This channel of Bernanke and Blinder (1988) relies on two important concepts, viz, the external finance premium (EFP) and the financial accelerator. The EFP is defined as

the difference in the cost of raising capital externally via equity, debentures and bank loans versus the cost of internal capital such as retained earnings. The EFP is positive since external finance is usually more expensive than internal finance. Corresponding to these two key concepts, the credit channel comprises two sub-channels, viz, bank lending channel and balance sheet channel.

Exchange rate channel: Changes in the stance of monetary policy can have important effects on aggregate demand via the exchange rate. Lower domestic interest rates relative to foreign rates lead to depreciation owing to reduced inflow of foreign capital. The rise in the price of imported goods leads to a rise in domestic inflation, while increased surplus on BoP via a rise in exports implies a rise in aggregate demand (Kuttner and Mosser 2002; Martins et al 2017).

Expectations channel: Expectations play an important role in the transmission of monetary impulses. Unanticipated monetary policy can impose heavy adjustment costs on the economy. The ability of monetary authorities to influence market inflationary expectations depends on the central bank's credibility and communications strategy (Woodford 2005; Goyal and Parab 2021).

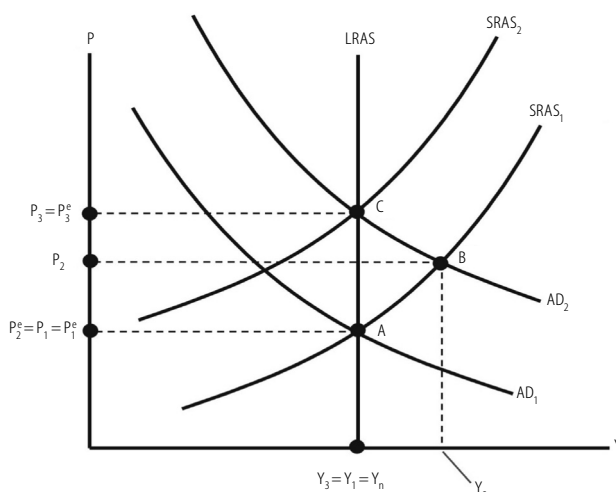
The upshot of the above description indicates the plurality of thinking on the channels of monetary policy transmission. Insofar as monetary policy is concerned, by the early 2000s there seemed to be a near consensus of central banks across the world, towards indicating the preference for the new Keynesian channels. The broad channels may be described in terms of Figure 1. In essence, equations (1) and (3) together give rise to a negatively sloped aggregate demand curve in the (output, price) plane, which gets shifted by any change in the demand management policies, monetary or fiscal.

Impact of an expansionary monetary policy on aggregate supply: Coming to the impact on the supply side of the economy, let us note that the standard wisdom is that the long-term supply curve is captured by the Friedmanian natural rate of output (corresponding to NAIRU already defined). In other words, monetary policy (or for that matter, fiscal policy) is helpless in terms of inflecting the aggregate supply in the long run, which is only a function of large shifts in technology. Thus, the long-run supply is vertical at Y_n .

As far as the short-run supply function is concerned, there is a sizeable new-Keynesian literature emphasising the importance of short-run price and wage rigidities, giving rise to an equation of the form (2). In our output, price plane (Y, P), it gives rise to an aggregate short-run supply function of the form: $Y = Y_n + \alpha(P - P^e)$, with $\alpha > 0$. Interestingly, any change in the monetary policy may affect the short-run aggregate supply curve as long as such policies influence price expectations.

Combining the demand and output effects of monetary policy: Let us now combine the impact of an expansionary monetary policy on demand and on output (supply). In Figure 2, the initial

Figure 2: Impact of an Expansionary Monetary Policy on Price and Output



equilibrium is at A, where the initial aggregate demand curve (AD_1), the initial short-run aggregate supply curve ($SRAS_1$) and the long-run aggregate supply curve ($LRAS$) intersect giving rise to the NAIRU-related output (Y_n) and the initial price level (P_1), which happens to be the expected price level (P_1^e) as well. As a result of the expansionary monetary policy, initially the aggregate demand curve shifts outwards to AD_2 , giving rise to a new equilibrium at B, associated with a higher output (Y_2) and higher price (P_2). Since, at B the expected price is lower than the actual price P_2 , economic agents are going to revise their expectations in the long-run with the short-run aggregate supply curve shifting to $SRAS_2$ with C as the new equilibrium where the economy is back to the natural rate of output (Y_n) but with a much higher price level P_3 .

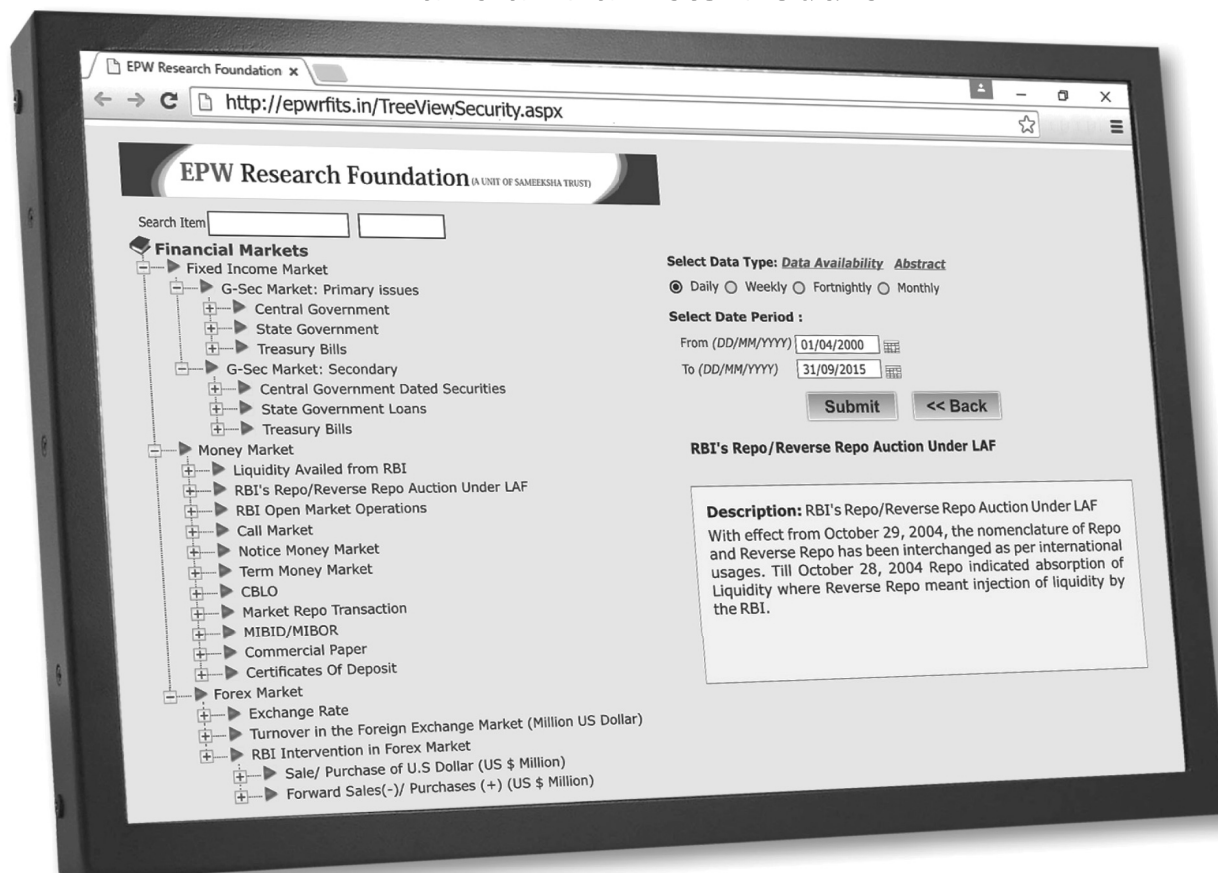
A key question is: What determines the price and output effect of the expansionary monetary policy? Intuitively, it would depend on the slopes of the aggregate demand and of the short-run aggregate supply functions, or the coefficients, α , β , δ 's in the model described by equations (1), (2) and (3). Thus, the key question is empirical in nature. Illustratively, Rangarajan and Arif (1990) estimated a detailed macroeconomic model for India to look at one of the perennial questions of monetary economics, viz, decomposition of the impact of an increase in money supply into price effect and output effect. The key result of the paper is that the price effects of an increase in money supply are stronger than the output effects for India. To put it differently, an expansionary monetary policy can lead to an increase in aggregate monetary demand resulting in an increase in the price level. However, subsequently because of a lowering of the interest rate and other effects talked about earlier, the output expands. It is normally seen that the demand effect is immediate and stronger.

In the light of such findings, what follows below is a discussion of the possible inflationary effect of the expansionary monetary policy on inflation for advanced countries in recent times. In particular, we will argue that the post-pandemic spurt in inflation can be symptomatically associated, inter alia with an ultra-expansionary monetary policy in advanced countries.

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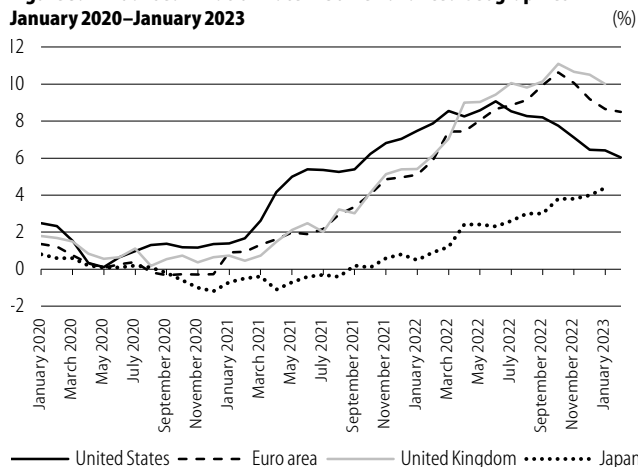
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Figure 3: Annualised Inflation Rate in Some Advanced Geographies—January 2020–January 2023

Source: IMF World Economic Outlook, April 2023.

Recent Trends in Inflation and Monetary Expansion

Trends in inflation: By this time, it is well known that inflationary trends all over the world have been on the upswing since the mid-2020. The spurt in inflation has been unprecedented in the developed world. Illustratively, in August 2022, the United States (us) inflation soared to 8.2%, the highest in 40 years and reminded one of the oil shocks of the 1970s. Similar upward trends in inflation were noticeable in others geographies like the euro area or the United Kingdom (Figure 3). Even in Japan, which traditionally tended to experience dis-inflationary tendencies, inflation touched as high as 4%.

Global inflation at 8.8% in 2022 has turned out to be the highest since the mid-1990s and the inflation in advanced countries in 2022 at 7.2% is the highest since the early 1980s. The increase in inflation was not confined to advanced countries alone. Even in the emerging and developing economies, the average consumer price inflation touched almost 10%, the highest since 2000. In fact, for 2022, inflation in emerging and developing Asia has turned out to be lower than the G7 countries—a fact that is rarely observed (Table 1).

What can this increase in inflation be attributed to? Admittedly, the initial spurt in inflation in 2020 can be associated with the supply shocks like introduction of wide-scale lockdowns and the associated disruption in the global supply

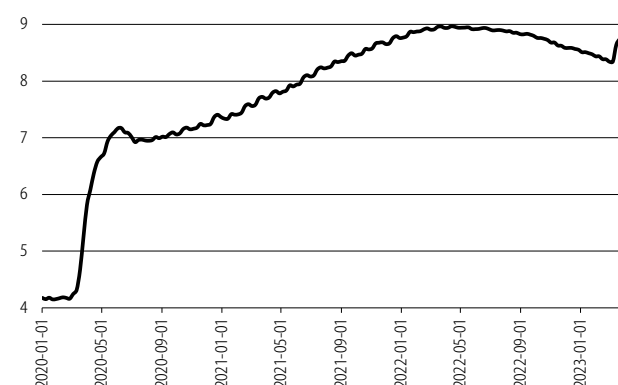
Table 1: Average Consumer Price Inflation (%)—Country Groups

Country Group	2018	2019	2020	2021	2022
World	3.6	3.5	3.2	4.7	8.8
Advanced economies	2.0	1.4	0.7	3.1	7.2
Euro area	1.8	1.2	0.3	2.6	8.3
Major advanced economies (G7)	2.1	1.5	0.8	3.3	7.2
Other advanced economies (excluding G7 and euro area)	1.6	1.1	0.5	2.4	5.6
European Union	1.9	1.4	0.7	2.9	9.2
Emerging market and developing economies	5.0	5.1	5.1	5.9	9.9
Emerging and developing Asia	2.7	3.3	3.1	2.2	4.1
Emerging and developing Europe	6.4	6.6	5.3	9.5	27.8
ASEAN-5	2.9	2.1	1.4	2.0	4.7
Latin America and the Caribbean	6.6	7.7	6.4	9.8	14.1
Middle East and Central Asia	10.0	7.7	10.5	12.9	13.8
Sub-Saharan Africa	8.3	8.2	10.2	11.1	14.4

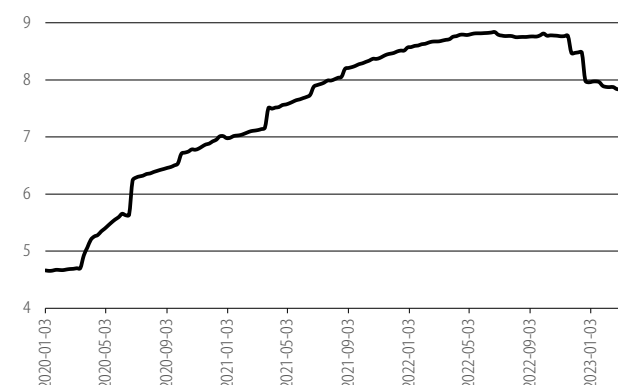
Source: International Monetary Fund, World Economic Outlook Database, October 2022.

Figure 4: Central Bank Assets—The US and Euro Area

(A) US Fed Balance Sheet (\$ Trillion)



(B) Central Bank Assets for Euro Area (Euro Trillion)



Source: Data of Federal Reserve Bank of Minneapolis.

chains. Such supply shocks could have been accentuated by geopolitical tensions like the Russia–Ukraine military conflict and associated spurt in energy and food prices. But, supply shocks (a shift of the SRAS curve in Figure 2) cannot perhaps explain the totality of inflationary trends.

Huge expansion of central bank liquidity facilities and the balance sheets: Justifiably, the solution to the human tragedy and the associated job and output loss has been in terms of an unprecedented expansionary economic stimulus—both in terms of monetary and fiscal policies. Monetary policy, in particular, has been ultra-expansionary and unduly prolonged. Illustratively, the size of the us Fed balance sheet has gone up from \$4.2 trillion in January 2020 to around \$8.9 trillion by August 2022—an increase of nearly \$5 trillion over a span of two and a half years (Figure 4)! Various liquidity facilities introduced to counter the adverse impact of the pandemic have all added to such unprecedented spurt in the Fed balance sheet.⁵ Similarly, in central bank assets for the euro area, aggregate assets experienced a spurt from €4.6 trillion in January 2020 to €8.8 trillion by November 2022. It is no wonder that the chickens of such liquidity expansion have come home to roost in terms of higher inflation.

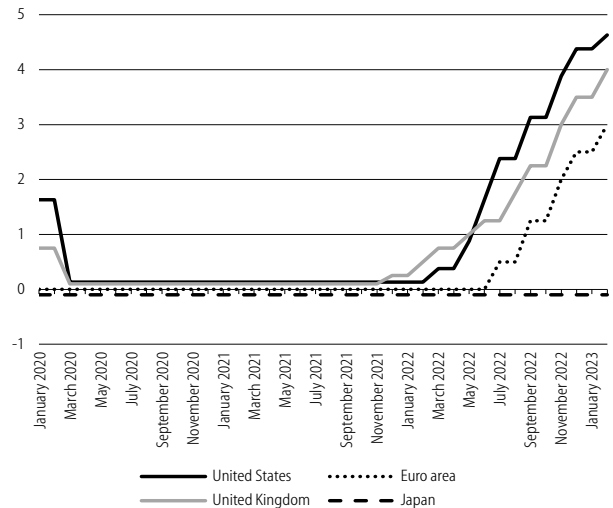
Trends in global liquidity: What have been the trends in global liquidity in recent times? A useful place to look at such an issue is the BIS global liquidity indicators (GLIs) that track “credit to

non-bank borrowers, covering both loans extended by banks and funding from global bond markets through the issuance of international debt securities (IDS).⁶ Admittedly, “global liquidity” is used by the BIS to mean “the ease of financing in global financial markets.” Two points may be noted in this connection. First, credit is among the key indicators of global liquidity. Second, global liquidity in general and credit in particular tend to influence the build-up of financial system vulnerabilities in the form of asset price inflation, leverage, maturity or funding mismatches.

Table 2 reports indicators of global liquidity as a percentage of respective GDP. Clearly, international claims of all sectors stood as high as 47.2% in Q4 2020, indicating the worldwide impact of ultra-loose monetary policy. Similar upward trends in global liquidity are noticeable in total claims in the private non-financial sector, both in terms of claims on advanced economies and emerging market economies. These numbers are indicative of the abundance of liquidity in the post-COVID-19 situation. In more recent times, there has been some tapering off in global liquidity indicators in sync with the return of measures of monetary contraction and increasing trends in the policy rates (Figure 5).

Relation between monetary growth and inflation: Is there any association between monetary growth and the spurt in inflation in recent times? Using cross-country data, Borio et al (2023) found an interesting regularity in this regard; they specifically commented, “The strength of the link between money growth and inflation depends on the inflation regime: it is one-to-one when inflation is high and virtually non-existent when it is low.” Furthermore, they found a link between

Figure 5: Central Bank Policy Rates



Source: Compiled from BIS data.

monetary growth and inflation in the recent transition from a low-inflation to a high-inflation regime; specifically, a spurt in money growth tended to precede the inflation flare-up. Also, countries with stronger money growth saw markedly higher inflation (Figure 6, p 29).

Their cross-country evidence tended to show that there is a significant positive correlation between excess money growth in 2020 and average inflation in 2021 and 2022. Their hypothesis is as follows:

In the low-inflation regime, i.e., when inflation has settled at a low and stable level, measured inflation mostly reflects the short-lived effects of largely uncorrelated sector-specific price changes—that is, the

Table 2: Trends in Global Liquidity

	(% of GDP)										
	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022
International claims on all sectors (1)	43.8	42.9	45.3	47.2	45.4	43.9	42.5	41.5	42.3	41.3	40.9
On the bank sector	21.2	20.5	20.9	21.8	21.1	20.4	19.7	19.3	20.1	19.9	19.7
On the non-bank sector	21.6	21.4	22.1	23.0	22.3	21.6	21.0	20.5	20.4	19.6	19.1
Total claims on the private non-financial sector (2)	111.1	114.8	117.1	118.3	119.1	115.8	114.5	114.1	114.3	112.4	111.6
Local claims	95.0	98.8	100.9	102	102.6	100.2	99.1	98.7	98.8	97.3	96.4
Cross-border claims	16.1	16	16.2	16.3	16.5	15.7	15.4	15.3	15.5	15.1	15.2
Claims on advanced economies											
On euro area (3)	114.2	119.2	120.0	121.0	122.6	118.7	117.5	116.8	115.8	115.3	115.1
On the United States	69.8	70.6	70.5	71.0	71.0	68.0	67.2	67.3	66.9	66.2	66.1
On other advanced economies (4)	137.1	142.3	144.5	146.6	147	143.5	142	141.7	142.8	144.3	145.7
Claims on emerging market economies											
On emerging Asia (5)	156.4	160.6	164.1	164.3	164.8	162.6	161	159.3	161.9	162.4	162.1
On central Europe (6)	57.4	57.6	57.5	57.2	57.7	55.6	55.1	55.2	54.1	53.4	51.8
On Latin America (7)	53.5	55.1	55.6	55.9	54.9	53.6	52.9	53	54.1	53.6	53.7
On other emerging market economies (8)	64.3	67.1	69.4	69.7	70.4	67.7	66.5	66.3	65.4	60.4	60.4

(1) Cross-border claims denominated in all currencies plus local claims denominated in foreign currencies.

(2) Cross-border claims refer to claims on the non-bank sector, including claims on the non-bank financial sector and the government sector.

(3) Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain.

(4) Australia, Canada, Denmark, Japan, New Zealand, Norway, Sweden, Switzerland and the United Kingdom.

(5) China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, Singapore and Thailand.

(6) The Czech Republic, Hungary and Poland.

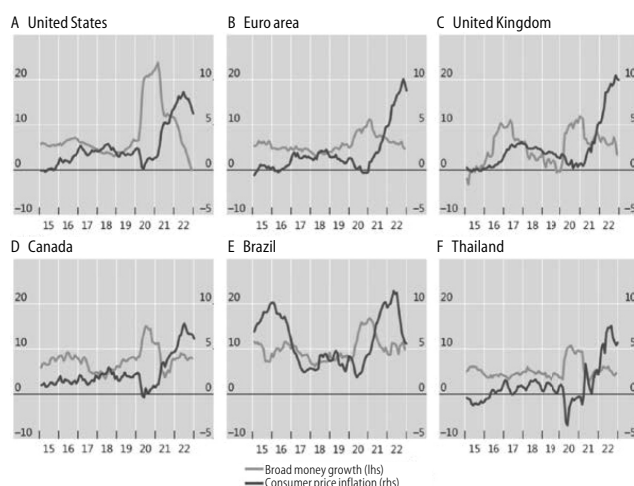
(7) Argentina, Brazil, Chile, Colombia and Mexico.

(8) Israel, Russia, Saudi Arabia, South Africa and Turkey.

Source: BIS.

Figure 6: Money Growth and Inflation Year-on-year

(%)



Source: Borio et al (2003: 2).

importance of the “common component” of price changes is low—while wages and prices are only loosely linked As a result, the inflation process has certain self-stabilising properties. In the high-inflation regime, by contrast, sectoral price changes are much more correlated, inflation is more sensitive to changes in salient prices, such as those of food and energy, or the exchange rate, and wages and prices are more tightly linked. As inflation rises and the importance of the common component increases, price hikes become more similar and synchronised, acting as a kind of coordinating device for agents’ decisions. This, in turn, increases the likelihood of wage-price spirals. (Borio et al 2023)

While the causality structure between excess money growth and inflation in a high-inflation regime is yet to be established, insofar as the post-pandemic experience is concerned, their association is loud and clear.

Transmission Mechanism and Financial Superstructure

The textbook exposition of the monetary transmission mechanism is usually done without any reference to the financial superstructure. There is, thus, often a disconnect between the theory and empirical reality. One of the pioneering attempts to incorporate institutional features within the perimeter of mainstream economics is the bank lending channel. After all, the stickiness of bank lending rates with respect to money market rates is often regarded as an impediment to the smooth transmission of monetary policy impulses.

In considering this channel, we may distinguish two kinds of bank borrowers—the first group comprises bank-dependent borrowers (households and small firms who have little access to other sources of finance such as equity markets or retained funds); the second group is made up of corporates, etc, who have access to alternate sources of finance. There is also a parallel dichotomy between small banks and large banks, the former being principally dependent on bank deposits as a source for their lending. A restrictive monetary policy forces a reduction in bank reserves as also a rise in market interest rates. The reduction in loanable funds forces banks, especially the smaller banks, to curtail their loan portfolio. The bank-dependent borrowers now face a double squeeze—via credit rationing as well

as a rise in loan rates. The larger borrowers may tap alternate sources of funding but these are usually more expensive than bank loans. All in all, a rise in the policy repo rate raises the EPF for both small and large borrowers forcing cuts in investment.

On the other hand, the balance sheet channel, a mechanism of financial acceleration, is also in action. The financial accelerator emphasises the importance of balance sheet conditions in the disbursement of credit. The crucial point for the financial accelerator is that the size of the EPF depends on the borrower firm’s net worth as reflected in its balance sheet. A restrictive monetary policy (such as a rise in interest rates) lowers the net worth of borrowers owing to the decline in equity values and the price of other assets such as real estate held by the borrowers. It also raises the burden on interest payments. The decline in borrowers’ net worth raises the EPF on the one hand and on the other requires them to increase the value of their collaterals. Both factors contribute to a reduction in the demand for loans (Bernanke and Gertler 1995; Gilchrist and Zakrajsek 1995).

A pertinent question in this connection is: What is the impact of financial deregulation on the monetary transmission? It is instructive to turn to Kneeshaw (1995: 2), who said:

It is generally assumed that following deregulation the transmission of monetary policy impulses to expenditure has become increasingly dependent on effects operating through interest rates, asset prices and exchange rates. A question often raised is whether a weakening of credit rationing effects could imply that large changes in interest rates are now necessary to have a given effect on private expenditure.⁴ However, where changes in financial structures have augmented wealth, income or cash-flow effects which operate quickly, the impact of given changes in interest rates on aggregate demand may actually have increased. At high debt levels, cash constrained debtors may have a stronger tendency to respond to rises in interest rates than creditors. The possibility that credit institutions could be more inclined to ration credit might enhance the effects of interest rate increases. The wealth effect of declines in asset prices, greater importance of the housing stock in personal wealth and increased consumer borrowing against higher market values of housing all potentially increase the effectiveness of interest rate increases.

A typical laboratory experiment of the impact of heterogeneous financial structure can be observed in the euro area. It has been found that the impact of the single monetary policy across the euro area has been asymmetric. Two specific aspects of financial structure in the euro area have been emphasised in particular: (i) the heterogeneity of retail banking markets and (ii) the heterogeneity of the balance sheet structure of firms and households (Mojon 2000). The efficacy of the traditional interest rate channel in a particular country will depend on these two aspects of the financial structure.

Drechsler et al (2016) proposed a new channel for the transmission of monetary policy, the deposits channel, and showed, “When the Fed funds rate rises, banks widen the interest spreads they charge on deposits, and deposits flow out of the banking system.” Empirically, they found that these relationships turned out to be strong and their aggregate effects large. Specifically, they argued that the deposits channel is the result of banks’ market power over liquidity provision to households and when interest rates rise, households’ alternative sources of liquidity, cash and currency, become more expensive to hold,

and this raises banks' effective market power over liquidity provision. In such a situation, banks could take advantage of this greater monopoly power by maximising profits by raising prices (deposit spreads) and restricting quantities. In particular, their results indicated that "monetary policy has a significant impact on how the financial system is funded, on the quantity of safe and liquid assets it produces, and on its lending to the real economy."

The role of bank capital could also play an interesting role in determining banks' behaviour. Bolton and Freixas (2006) showed that bank lending could be constrained by capital adequacy requirements, and asymmetric information could add a cost to outside bank equity capital. In their model, "Monetary policy does not affect bank lending through changes in bank liquidity; rather, it operates through changes in the spread of bank loans over corporate bonds, which induce changes in the aggregate composition of financing by firms, and in banks' equity-capital base." The model produces multiple equilibria—one in which the possibility of a "credit crunch" looms large.

A related issue could be the relationship between monetary policy and financial policy. While financial policy aims at maintaining and promoting financial stability, and it is operationalised via the standard modes of supervision and regulation (including capital and liquidity requirements). Admittedly, in crisis times, various instruments are being utilised by the authorities; these include lending of last resort; variable rate lending at longer maturities (credit policy, credit easing); special resolution regimes for insolvent financial firms; government lending guarantees; government capital injections, etc (Svensson 2011). However, these policies, viz, monetary and financial policies could be inter-linked so that financial policy may influence growth and inflation, and monetary policy, in turn, could affect financial stability. Svensson (2011), for example, noted,

Monetary policy affects activity in the real economy, the rate of default among firms, and thereby credit losses on loans to those firms, asset prices, and balance sheets. All else equal, it thereby affects financial stability. The financial policy affects the operation of financial markets

and, thereby the monetary policy transmission mechanism. Through risk premiums (for credit, liquidity, counterparty, and other risks), it also affects financial conditions, which, all else equal, have an impact on inflation and resource utilization. This means that monetary policy should be conducted taking financial policy into account, and financial policy should be conducted taking monetary policy into account.

The global financial crisis of 2008–09 exposed the world to unexpected vulnerabilities and taught policymakers, in general, and central bankers, in particular, the importance of financial policies. At the current juncture, how far are those lessons important? A key difference between 2008 and now needs to be kept in mind. In 2008, the crisis originated in the financial sector, and to counter the associated concerns of growth and financial stability, a number of central banks resorted to quantitative easing; inflation was never a concern then. At the current juncture, the ultra-lax monetary policies initially were resorted to mitigate the growth challenges arising out of the pandemic, and the present reversal of monetary policy stance happened when inflation surpassed past trends and emerged as the major concern. However, going forward, could concerns regarding financial stability re-emerge?

A few comments are in order. First, the recent monetary policy tightening could potentially lead to financial stress in the days to come. In fact, the recent failure of the Silicon Valley Bank (SVB) in March 2023 could be attributed largely to the bank's investment of its deposits in held-to-maturity securities and the inability to absorb the associated loss arising in an increasing federal fund regime. Second, a loose monetary policy via quantitative easing could have made banks' prudential norms lax; consequently, in the days to come, some of the loans disbursed during the pandemic may turn out to be non-performing. In some sense, the way "fiscal dominance" tended to weaken the operation of monetary policy, "financial dominance" too could dent the effectiveness of monetary policy.

Concluding Remarks

In conclusion, we wish to make three points. First, while discussing inflation, analysts and policymakers focus almost exclusively on the increases in the prices of individual

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commodities like crude oil, as a primary cause of inflation. True, in many situations, including the current one, they may be the triggers. Supply disruptions due to domestic or external factors may explain the behaviour of individual prices but not the general price level, which is what inflation is about. Given a budget constraint, there will only be an adjustment of relative prices. It is the adjustment that happens at the macro level that becomes critical. A long time ago, Friedman (1963) said, "It is true that the upward push in wages produced inflation, not because it was necessarily inflationary but because it happened to be the mechanism which forced

an increase in the stock of money." Thus, it is the adjustment at the macro level of liquidity that sustains inflation.

Second, any action of monetary authorities leading to the expansion or contraction of money or liquidity can have a dual effect—a demand effect and an output effect. The interaction of the two effects will lead to a new price-output combination.

Finally, the financial structure could have a key role in monetary transmission. Thus, the pursuit of price stability, monetary stability and financial stability gets intimately interlinked.

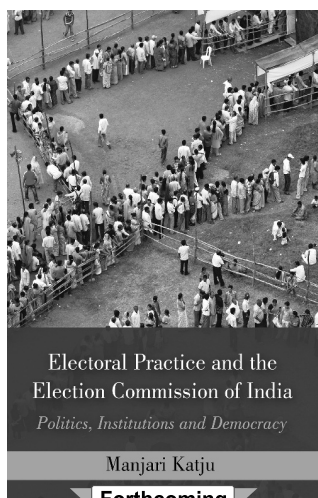
NOTES

- 1 See Nachane (2018, 2023) for a discussion on the new consensus macroeconomics and its critique.
 - 2 The New Consensus Macroeconomics (NCM) which established itself in the 1980s as the *weltanschauung* of the macroeconomics profession, essentially represented an amalgam of the then dominant New Classical School (Lucas 1972; Sargent 1979) and the nascent Neo-Keynesian view (Mankiw 1989; Phelps 1968; Taylor 1980)—grafting the micro-foundations of Keynesian sticky prices and wages on to the macro aspects of the Friedmanian NAIRU (non-accelerating inflation rate of unemployment) and the doctrine of rational expectations. Our formulation closely follows Clarida et al (1999). Its extension to the open economy is given in Arestis (2007), and Angeriz and Arestis (2007).
 - 3 This corresponds to Wicksell's natural rate of interest (Amato 2005; Neiss and Nelson 2005; Fontana 2006).
 - 4 This is paradoxical because inventories are thought to be responsive to short-term rates and residential investment to long-term rates.
 - 5 These include: term auction credit; primary credit; secondary credit; seasonal credit; primary dealer credit facility; asset-backed commercial paper money market mutual fund liquidity facility; term asset-backed securities loan facility; commercial paper funding facility; money market mutual fund liquidity facility; paycheck protection programme liquidity facility; bank term funding programme; and central bank liquidity swaps.
 - 6 The main focus is on "foreign currency credit denominated in three major reserve currencies (US dollars, euros and Japanese yen) to non-residents, that is, borrowers outside the respective currency areas". Effectively, the GLIs monitor "growth in this credit relative to that denominated in those same currencies to residents within these currency areas (as reported in national financial accounts)" (<https://www.bis.org/statistics/gli2301.htm>).
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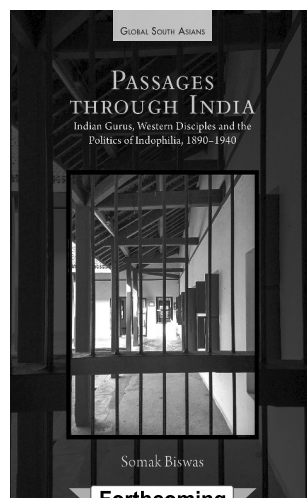


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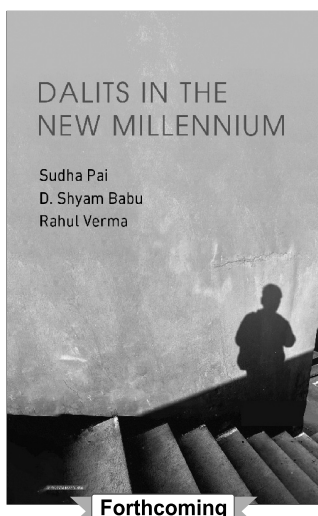
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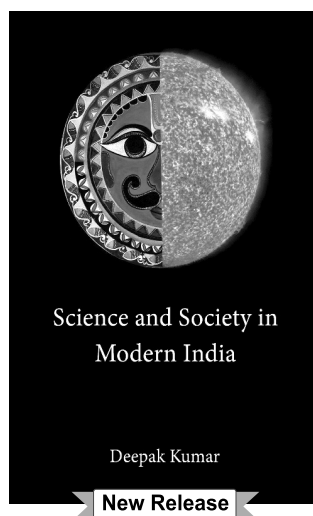
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