US Dollar appreciation and global dollar shortage: Implications and emerging concerns

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As I pen this article, the news of the US dollar rising to ₹ 82.24 by approximately 32 paise from ₹ 81.92 dominates the late evening headlines of July 28. The depreciation of the Indian rupee is attributed to outflows of hot money seeking higher returns in the world's safest haven. This was triggered by positive macroeconomic news from the United States, declaring that the US economy is no longer facing difficulties. The successful implementation of contractionary monetary policy changes since 2022, along with other positive economic indicators, including a robust labour market, suggest that a recession is unlikely.

On July 27, the US central bank, the Federal Reserve (the Fed), raised the policy interest rate by 25 basis points to a range of 5.25% - 5.50%. This marks the 11th increase since the Fed began the monetary tightening process in March 2022. The latest hike brings borrowing costs to their highest level in over 22 years.

It appears that the US rate-hiking cycle is now concluding, which brings some relief to central banks worldwide. However, inflation remains a concern, as the current year-on-year inflation (July 2022-June 2023) stands at 3%, still above the Fed's 2% target. The Fed Chairman, in a news conference, emphasized that there is still a long way to go, as the 525 basis points increase since April 2022 has not yet brought inflation down to the desired level, and global inflation fears persist. The possibility of two more hikes is not ruled out, as the Fed aims to anchor inflation expectations among all stakeholders.

Emerging Global Concerns

Recent concerns focus on the implications of the appreciating US dollar and the ongoing dollar shortages. The current US dollar appreciation has reached a 20-year peak, leading to declining exchange reserves in various countries, except for China, which remains a major source of manufactured consumer goods.

According to IMF economists Rudolfs Bems and Racha Moussam, who reviewed global exchange rates and foreign reserve holdings, emerging economies are experiencing more significant adverse effects compared to advanced economies due to the spillover of the US dollar's appreciation. Empirical evidence by Maurice Obstfeld and Haonan Zhou confirms that in emerging market economies, a 10 percent US dollar appreciation results in a 1.9% decrease in economic output, lasting for two and a half years. In contrast, the negative effects on advanced economies are smaller (not exceeding 0.6%) and dissipate within one year. As a result, the negative consequences fall disproportionately on both advanced and emerging economies (**Table)**.

In emerging market economies, including India, the appreciation of the US dollar impacts trade and financial channels. Bems and Moussam observe that real trade volumes steeply decline, with imports dropping twice as much as exports. Additionally, credit availability decreases, capital inflows diminish, and tighter monetary policies are implemented, leading to a decline in stock-market activities. The income compression channel plays a significant role, resulting in reduced consumption of imported items. However, the external sector adjustment in emerging market economies is slow due to their higher exposure to the US dollar.

In advanced economies, exchange rate depreciation occurs relatively automatically, with less intervention in market forces. Market interventions, such as selling US dollars and buying domestic currencies to prevent excessive depreciation of the domestic currency, have their limits determined by the availability of foreign reserves. Such interventions aim to reduce volatility rather than control trade deficits or promote exports. The RBI frequently resorts to and defends market interventions, clarifying that they are for reducing volatility and they are not aiming at any particular nominal exchange rate (ER).

Purchasing Power Parity Theory

In connection with this, the Purchasing Power Parity Theory test (PPPT) is often used to determine whether a prevailing exchange rate is overvalued to make imports cheaper or undervalued to promote exports, both with the aim of reducing trade imbalances. Under very restrictive assumptions, the PPPT reveals the extent of undervaluation or overvaluation of a currency. A good class room example is Big Mac Index introduced in 1986 by the Economist of

Exchange Rates and Foreign Reserves of Selected Advanced Countries, China and India : 2015 -2022

(Exch.rate in Units of Domestic Currency per one US$ and Foreign Exchange Reserves in US$ in billion)

Year	2015	2016	2017	2018	2019	2020	2021	2022
Euro Zone								
Exch Rate	0.90	0.90	0.89	0.85	0.89	0.88	0.85	0.95
Foreign Res	701.55	741.79	802.69	822.53	914.23	1077.85	1196.16	1184.87
UK								
Exch Rate	0.65	0.74	0.78	0.75	0.78	0.78	0.73	0.81
Foreign Res	148.11	134.93	150.86	172.66	173.57	180.05	194.18	176.41
Japan								
Exch Rate	121.04	108.79	112.17	110.42	109.01	106.77	109.75	131.50
Foreign Res	1233.10	1216.52	1264.14	1270.47	1322.44	1390.81	1405.75	1227.57
Australia								
Exch Rate	1.33	1.35	1.30	1.34	1.44	1.45	1.33	1.44
Foreign Res	45.41	52.48	65.65	53.91	57.99	42.54	57.88	56.70
New Zealand								
Exch Rate	1.43	1.44	1.41	1.45	1.52	1.54	1.41	1.58
Foreign Res	14.70	17.81	20.68	17.66	17.81	13.73	16.11	14.40
China								
Exch Rate	6.23	6.64	6.76	6.62	6.91	6.90	6.45	6.74
Foreign Res	3405.25	3097.66	3235.68	3168.22	3222.89	3357.24	3427.93	3306.84
India								
Exch Rate	64.15	67.20	65.12	68.39	70.42	74.10	73.92	78.60
Foreign Res	353.32	361.69	412.61	399.17	463.47	590.23	638.48	567.30

London, which publishes two bi-annual test results, which are delectable staple for students of international finance and monetary economics. Under highly restrictive assumptions of no transport costs and no tariff/quota barriers between two countries but with identical manufacturing processes, and with same weight of each Big Mac and same quality of ingredients, prices of the good produced in two countries are compared to obtain bilateral ER. There are also assumptions in regard to non-tradables such as water, electricity and rents of buildings for outlets and manufacturing. Their domestic costs are zero or ignored. The "ideal" "tradable good" is the Big Mac sold by McDonald's outlets almost all over the world except perhaps North Korea. The only difference between two Big Macs of Indian and the US outlets is the Indian Big Mac has no beef or pork, but it has only chicken. However, it is claimed there is no compromise in nutritional properties.

Using two prices of Big Mac, one in US ($ 5.89) and in India the price of the most close to American Big Mac is Mc Spicy Chicken Burger Wrap (₹ 194), we derive the implied PPPT ER. The procedure is, we divide ₹ 194 by $5.89. The quotient is ₹ 32. 94, which is ER per one US $. The market ER on the day, when two country Big Mac prices are obtained, is ₹ 81.92. The difference between the PPPT implied ER, and the actual ER is ₹48.98; and the difference is then expressed as a proportion of actual rate in percentage terms: a negative 59%., which indicates the Indian rupee is undervalued by 59%.

Under most restrictive assumptions, the PPPT test illustrates the extent of undervaluation of a currency. The same example and procedure when applied to advanced countries, we find the extent of undervalua-tion is less than 1%, Sothemessageisself-corrections,whichareneeded,areprovided by a full unimpeded operation of market forces under flexible ER regime.

The policy directions are clear: Emerging market economies with more anchored inflation ex-pectations or more flexible exchange rate regimes fare better. A caveat is in order: Central banks do not use the PPPT implied ER but use the real exchange rate which is nominal trade weighted ER, which is adjusted for domestic infla-tion relative to inflation over-seas, to determine the export competitiveness as well as stability of domestic currency. ■

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