U.S. Monetary Policy and the World Capital Market

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Four Central Banks, Four Topics, Four Exchange Rates

Focus on the Fed, ECB, BOE, and BOJ

- Mandates and Methods of Policy Implementation
- The Outlook
- Recent Monetary Policy Actions
- Exchange Rates
    - ◇ will also touch on CNY

The United States: Fed's Mandate

For the U.S., the Federal Reserve Act mandates goals of:

- maximum employment
- stable prices (inflation target 2% per yr. on core PCE)
- moderate long-term interest rates (a consequence of the first two)

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Contrast with other advanced economies

- ECB has a single mandate, on price stability alone

  ⋄ but worries about countries exiting the euro; policies to preserve the euro (↓ "redenomination risk") may conflict with inflation objective. Widely seen as reason for greater caution in ECB rate hikes now.

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- BOJ has only a price stability mandate.

The United States: Monetary Policy Implementation

U.S. monetary policy decisions are made by the Federal Open Market Committee (FOMC). Its primary means of adjusting the stance of monetary policy is by changing its target for the Federal Funds Rate (FFR).

The FOMC holds regularly-scheduled meetings eight times a year, most recently on Sept 20-21, 2022. Releases a Statement after every meeting and the Fed Chairman subsequently holds press conference.

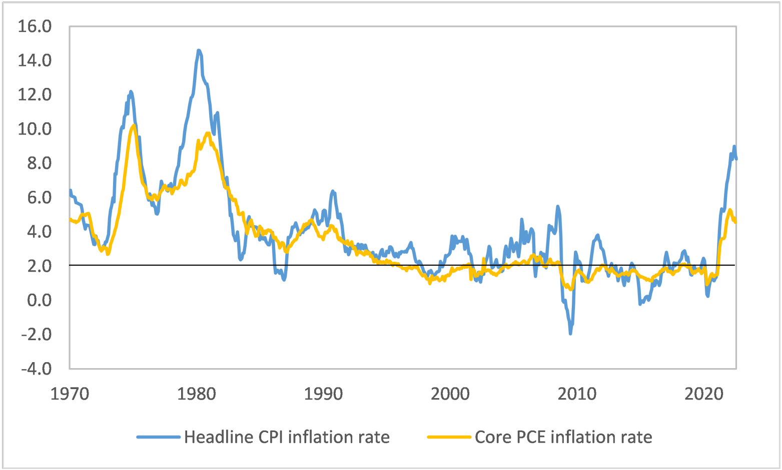
Summary of Economic Projections, a communication of the Fed's outlook for the economy and its own policy, released after *every other* meeting.

The United States: Fed's Outlook

U.S. unemployment is low, labor markets are very tight, inflation is stubbornly high. The FOMC Statement on 21 Sept 2022 begins

- "Recent indicators point to modest growth in spending and production. Job gains have been robust in recent months, and the unemployment rate has remained low. Inflation remains elevated, reflecting supply and demand imbalances related to the pandemic, higher food and energy prices, and broader price pressures."

U.S. Consumer Inflation

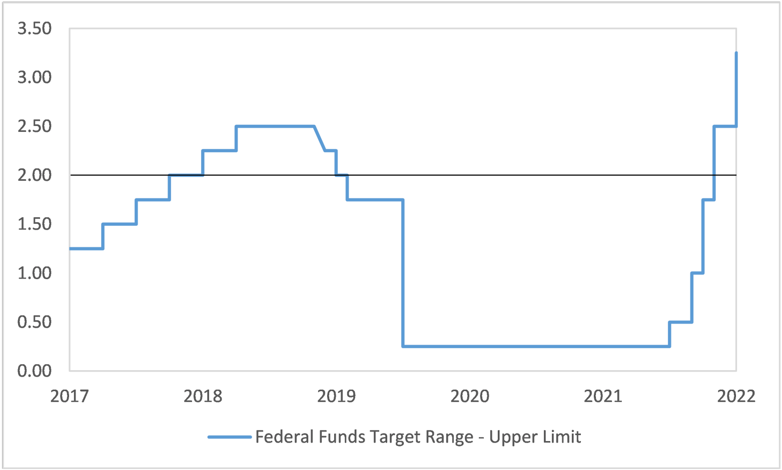


21 Sept. 2022 Policy Decision

Tightened policy again and clearly signaled that more is on the way

- "The Committee seeks to achieve maximum employment and inflation at the rate of 2 percent over the longer run. In support of these goals, the Committee decided to raise the target range for the federal funds rate to 3 to 3-1/4 percent and anticipates that ongoing increases in the target range will be appropriate. ... The Committee is strongly committed to returning inflation to its 2 percent objective.

The Federal Funds interest rate



Two key items to look for from the Fed on interest rates

(1) What will be the "terminal" Fed Funds rate in this tightening cycle?

- recall $i = r + \pi^e$; Fed sets i with mandate to keep π stable.
- what about r? Define r-star: the real short-term interest rate prevailing when an economy is at full strength and inflation is stable.
  - ◇ r-star is estimated, it's not observable; Fed thinks a lot about it.
  - ◇ r-star seems to change a lot over time; large decline since 2008.
- if r-star is estimated to be 2.0 and Fed wants π to be 2%, it seems that FFR must go to at least 4%.

  ◇ when i was around zero and inflation was climbing, r was well below any plausible r-star (it was negative!) $\rightarrow$very stimulative monetary policy

(2) How long will it take to get to the terminal rate?

Let's see what the FOMC is signalling ...

Summary of Economic Projections

Table: FOMC projections as of Sept 2022 and June 2022

	2022	2023	2024	2025	Longer run
Change in real GDP	0.2	1.2	1.7	1.8	1.8
June projection	1.7	1.7	1.9		1.8
Unemployment	3.8	4.4	4.4	4.3	4.0
June projection	3.7	3.9	4.1		4.0
PCE inflation	5.4	2.8	2.3	2.0	2.0
June projection	5.2	2.6	2.2		2.0
Core PCE inflation	4.5	3.1	2.3	2.1	
June projection	4.3	2.7	2.3		
Federal funds rate	4.4	4.6	3.9	2.9	2.5
June projection	3.4	3.8	3.4		2.5

Signals from the September Meeting

No "recession" but weakness. Unemployment will rise, though not a lot by historical standards.

Inflation is projected to come down relatively quickly. Too optimistic?

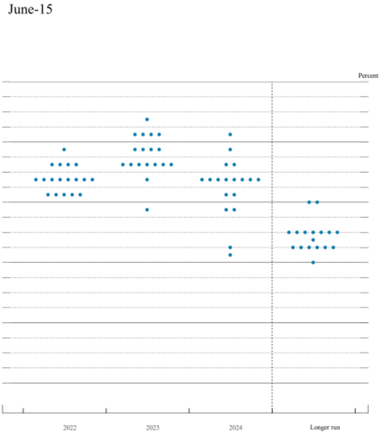
- Larry Summers tweeted generally favorable comments but also: "Happy to bet anyone that we see 6 months of unemployment above 5 before we see 6 months of inflation below 2.5."

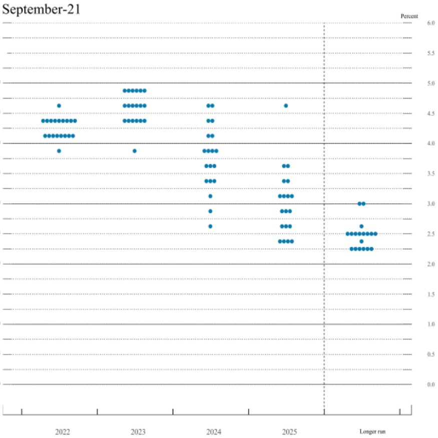
Suggest a terminal rate of 5% that will arrive in mid to late 2023.

The September "dot plots" signal greater and more rapid tightening compared to June, and June's were more 'aggressive' than in March.

- look at that uncertainty/disagreement about 2024!

The Dot Plots: June vs September





What *should* the Fed set the FFR at now?

The Taylor Rule is an equation John Taylor introduced in a 1993 paper that prescribes a value for the Federal Funds rate based on the values of inflation and the output gap. The r^* here is our r-star from above, and π^* is what the Fed tells us it is (2% now).

$$\widehat{FFR}_t = \rho FFR_{t-1} + (1-\rho)\left[\left(r_t^* + \pi_t^*\right) + 1.5\left(\pi_t - \pi_t^*\right) + \beta gap_t\right]$$

- Depending on assumptions about r^*, β, and *gap*, the Fed Funds rate currently implied by the Taylor Rule ranges from 5.2% to 7.2% (https://www.atlantafed.org/cqer/research/taylor-rule?panel=1)
- This large range indicates how difficult things are for the Fed.
- But Taylor Rule(s) imply that the FFR still needs to rise further.

How is all this going over with the public?

U.S. Inflation Expectations

Fed monitors them closely, wants public expectations "anchored"

> ◇ caveat: it's not clear that expected inflation, especially *short-run* expected inflation, reliably affects *actual* inflation; everyone talks about it nonetheless

How do we measure inflation expectations?

- conduct surveys: ask people and businesses
- estimate models
- from bond markets

Surveys of Consumer Inflation Expectations

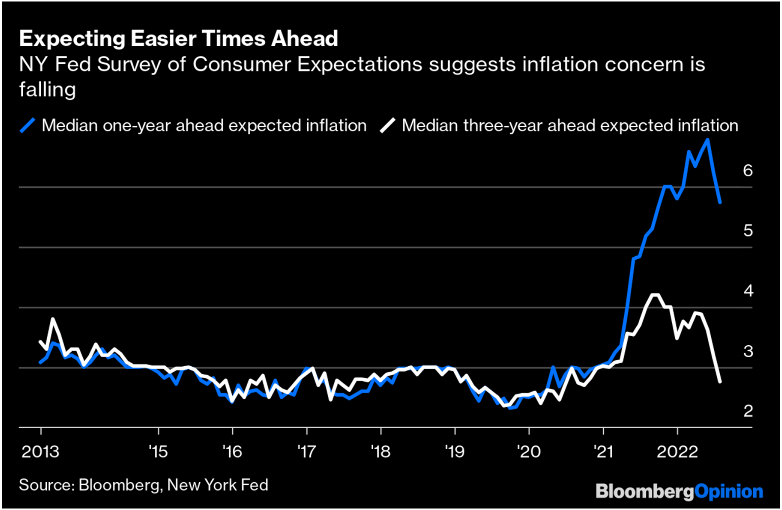
FRB-New York Survey of Consumer Expectations, 12 September 2022 (released the day *before* the disappointingly high Aug. CPI print)

- "Median one- and three-year-ahead inflation expectations both posted steep declines in August, from 6.2 percent and 3.2 percent in July to 5.7 percent and 2.8 percent, respectively. Median five-year-ahead inflation expectations also declined to 2.0 percent from 2.3 percent. Expectations about year-ahead price increases for gas also continued to decline, with households now expecting gas prices to be roughly unchanged a year from now."

University of Michigan Survey, 16 September 2022

- "One-year inflation expectations dropped to 4.6%, the lowest since September 2021, from 4.8% in August. The survey's five-year inflation outlook slipped to 2.8%."

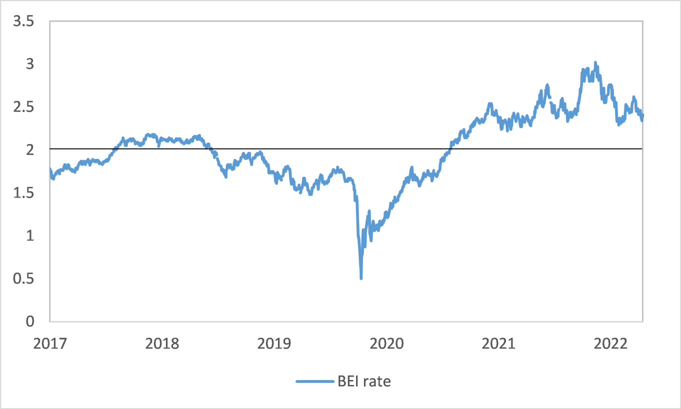
FRBNY Survey of Consumers



Long-run expectations seem well-anchored for now.

Market-based Inflation Expectation

- Nominal minus real (TIPS) Treasury yields.
  - ◇ is the breakeven inflation rate, a (risk-neutral) forecast of inflation, depicted here for the 5-yr horizon



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Are similar things happening in other countries?

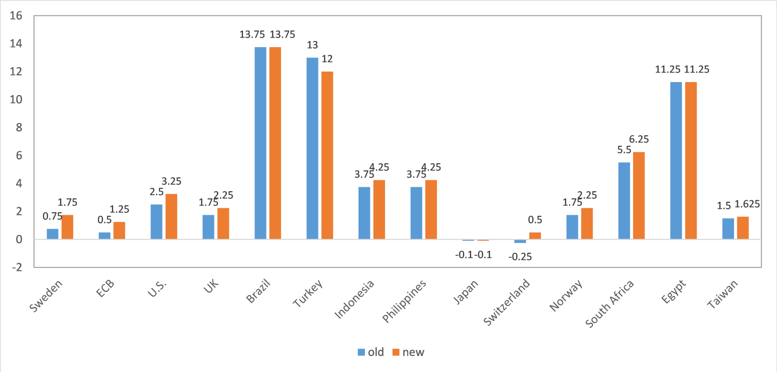
Remember that the Fed's mandate is silent on developments in exchange rates, foreign financial markets and economies, etc.

This means that the FOMC weighs such developments only to the degree that they will affect the achievement of dual mandate objectives.

- but there are legions of international meetings among central banks, with Fed participation at all levels of staff. Everyone is well-briefed on Fed thinking. There's an entire Division of International Finance.

Central Banks that met within 24 hours of the Sept FOMC

Who's (not) afraid to (not) follow the Fed?!



The European Central Bank

ECB Governing Council makes euro area monetary policy decisions. Sets three key interest rates deposit facility rate, main refinancing operations (MRO) rate and marginal lending facility rate.

- these are, respectively, the interest rate banks receive for depositing money at the ECB overnight, the rate at which banks borrow from the ECB for one week, and the rate for borrowing overnight.
- all three raised by 0.75% on September 7, 2022. Thus, all are now (slightly) above zero.
- The deposit rate had been at zero or *negative* since June 2014, and is now 0.75. Signalled more hikes.

The European Central Bank

New “MBM” operating framework moves away from forward guidance:

- “Having completed this initial stage of monetary policy normalisation, our September monetary policy meeting will be the start of a new phase. Our over-riding goal is to make sure that monetary policy will deliver the timely return of inflation to our medium-term two per cent target. In terms of execution, this new phase will consist of a meeting-by-meeting (MBM) approach to setting interest rates. At a basic level, the transition from rate forward guidance to the MBM approach is in line with our monetary policy strategy, which assessed that forward guidance was primarily an appropriate response to the lower bound constraint. As policy rates move away from the lower bound, the inherent flexibility of the MBM approach is better suited to calibrating monetary policy in a highly uncertain environment.”
    - ◇ ECB Chief Economist and Executive Board Member Philip Lane

ECB: September 2022 Macroeconomic Projections

Inflation will remain high in the short term due to soaring energy and food prices, supply shortages and effects from the reopening of the economy. As these factors fade, inflation will fall from 8.1% in 2022 to 2.3% in 2024, still supported by higher wages and the weaker euro.

Mounting headwinds from gas supply disruptions and surging energy prices imply that activity will stagnate in the winter. Economic growth will decline from 3.1% in 2022 to 0.9% in 2023, then recover to 2.3% in 2024 as gas markets improve and inflation and uncertainty decline.

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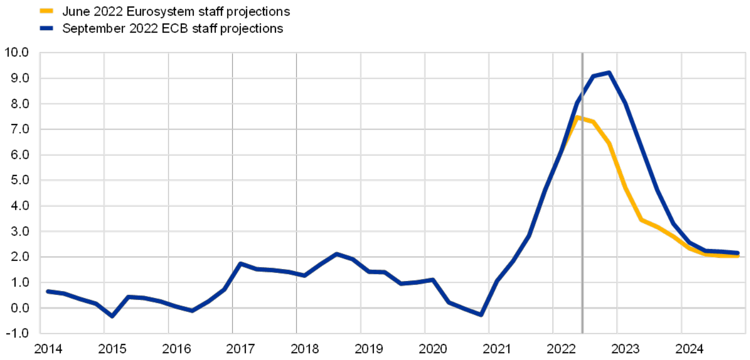
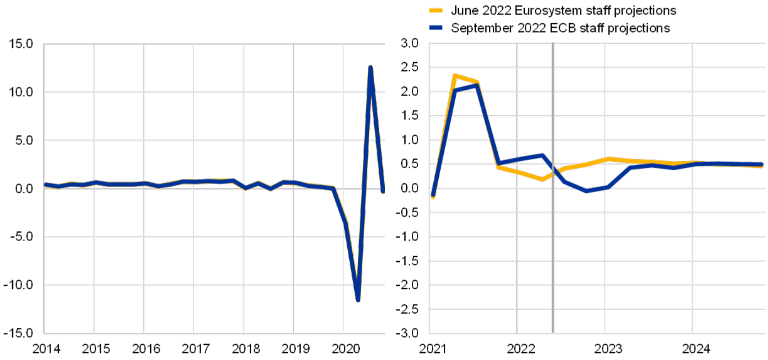
- wait, can someone call Larry Summers?

ECB Inflation projections



ECB GDP growth projections



The U.K.

U.K. monetary policy decisions are made by the BOE Monetary Policy Committee (MPC); has nine members, meets eight times a year. Explain monetary policy decisions in quarterly Monetary Policy Report. The Committee raised its key Bank Rate from 1.75% to 2.25% on 22 Sept 2022, the day after the Fed hike.

BOE outlook: Monetary Policy Report August 2022

Table 1.A: Forecast summary of the MPC's baseline projections (a) (b)

	2022 Q3	2023 Q3	2024 Q3	2025 Q3
GDP (c)	2.3 (2.9)	-2.1 (-0.8)	0.0 (0.4)	0.4
CPI inflation (d)	9.9 (9.5)	9.5 (5.9)	2.0 (1.8)	0.8
LFS unemployment rate	3.7 (3.5)	4.4 (4.1)	5.5 (4.8)	6.3
Excess supply/**Excess demand** (e)	**+¾ (+¼)**	-2¼ (-1½)	-3¼ (-2)	-3¾
Bank Rate (f)	1.6 (1.5)	3.0 (2.6)	2.5 (2.3)	2.2

Bank of Japan Outlook: 22 July 2022

BOJ as kept its policy rate <u>effectively at zero</u>, even now.

Japan's economy is likely to recover toward the middle of the projection period, with the impact of COVID-19 and supply-side constraints waning, although it is expected to be under downward pressure stemming from a rise in commodity prices due to factors such as the situation surrounding Ukraine. Thereafter, Japan's economy is projected to continue growing at a pace above its potential growth rate.

Consumer price inflation is likely to increase toward the end of this year due to rises in prices of such items as energy, food, and durable goods. Thereafter, the rate of increase is expected to decelerate because the positive contribution of the rise in energy prices to the CPI is likely to wane. Meanwhile, in terms of inflation excluding energy, the year-on-year rate of change in the CPI is expected to increase moderately in positive territory on the back of improvement in the output gap and rises in medium- to long-term inflation expectations and in wage growth.

Who's outlook is less bad? Global asset markets effect?

Again, from Bloomberg: "For the Barclays analysts, whether considering equities or debt, the cleanest shirts are in the US: The one standout for us is not an asset, but a geography. Specifically, the US is in better shape than other major economies."

- Its growth outlook, while poor, is better than for Europe and China. And alone among Western economies, despite the upside surprise in August, we believe that US inflation could moderate in 2023. We expect US consumer prices to rise at sub-3% next year, a big gap to the 6.3% that we expect in Europe or the 5.5% we see in the UK. Moreover, the Fed is further along in hikes than either the ECB or the BoE. The US has a better chance than other developed economies of escaping without a significant recession, so USD assets still look attractive in a relative sense.

Exchange Rates: Theory

Much analysis views exchange rate movements through a "monetary model" of exchange rates. Exchange rate changes driven by two factors:

- difference in interest rates between countries. Tighter monetary policy at home raises real interest rates and appreciates home currency.
- difference in real economic activity (like GDP) between countries. Greater activity at home increases demand for currency and appreciates home currency.

    ◇ but what happens to the exchange rate if your country experiences (a) tighter policy, but (b) that kills economic activity?

    ◇ models do ok explaining exchange rate movements in-sample, but perform poorly forecasting exchange rates out of sample.

Euro Exchange Rate and U.S.-German Real Interest Rates

Suggests the key explanator from the monetary model does well in-sample

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Is Good News Bad News?

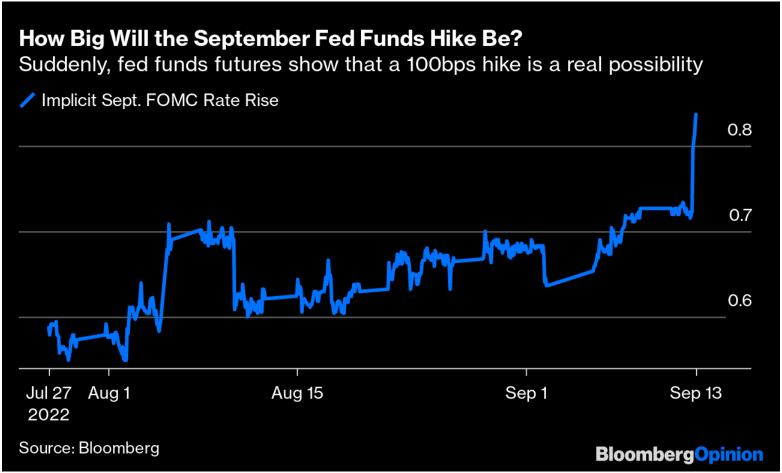
Part of the explanation why exchange rate models perform poorly is the crucial role of *expectations*. So is good news bad news?

Seems like 'yes' for currencies and 'no' for stocks: if U.S. data releases are better (worse) than expected, belief the Fed will (will not) continue to raise interest rates. Thus, good news helps rally stocks but hurts the USD.

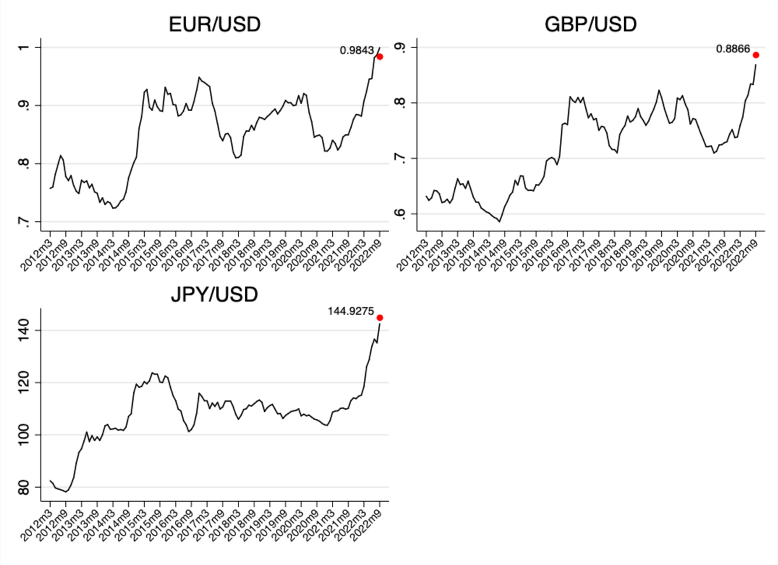
- is there really a "Fed put"?

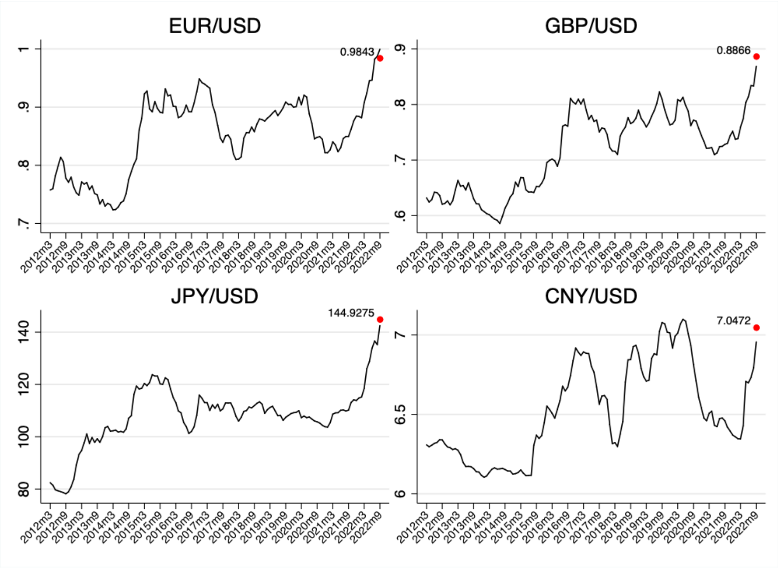
U.S. stock market dropped precipitously, and the dollar rose, on the day of the August CPI print on Sept 13.

Expected Fed Funds Rate Hike after August CPI Print



U.S. Dollar Exchange Rates: 2012 – now




EUR/USD
0.9843
GBP/USD
0.8866
JPY/USD
144.9275
CNY/USD
7.0472

One Final Thought

Central banks are tightening, the U.S. dollar is appreciating

- euro at parity with USD, CNY broached 7, yen weakness ...
- maybe bad news anywhere is good for the dollar

Inflation remains stubbornly high. Europe seems particularly gloomy.

Depreciating currencies raise import prices, add to inflation at home.

- “doom loop” for economies already suffering rising prices:
    - Fed tightens, depreciates your currency
    - puts upward pressure on your prices, so you tighten too
    - but this offsets some of the disinflationary effects of Fed tightening on U.S. prices, so the Fed tightens ...
    - ... end result may be “competitive revaluations”
- suggests that it’s Pareto improving to coordinate monetary policy across countries, with less aggressive tightening overall. Realistic?