

A US Centered Analysis of the Price Level, Inflation and the Neutral Rate of Interest

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Abstract

In this paper we develop a Federal Reserve Bank centered framework for the analysis of the price level and inflation first presented by Mosler (2023). Both the source of the price level and the dynamics behind changes in the price level are identified and inflation, as academically defined, is shown to be a direct function of the central bank policy rate. The neutral rate, as currently defined by central banks, is then analyzed and revealed as an anachronistic narrative that echoes analyses of convertible currency fixed exchange rate regimes, which are inapplicable to the US non-convertible currency floating exchange rate regime.

Key words

Price level, Inflation, Interest rates, Monetary Policy, Neutral rate (R^*), fiscal policy

Introduction

In this paper, we further develop the *Framework for the Analysis of the Price Level and Inflation* presented by Mosler (2023) in the context of the Federal Reserve monetary policy.

In section 1. we identify the currency itself, the \$US, as a case of a public monopoly, which is thereby the source of the price level.

In section 2. we identify and analyze the sequence of monetary operations.

Section 3. is a discussion of inflation.

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Section 4. introduces the commercial banking system and critiques current central bank monetary policy.

Section 5. concludes.

1. The Source of the Price Level: The Currency as a Public Monopoly

The analysis of the origin of a non-convertible currency like the \$US begins with the imposition of coercive tax liabilities that both identifies the \$US as the tax credit and contains information regarding the quantity of \$US required to satisfy the tax liabilities. These requirements create a notional demand for \$US, evidenced by sellers of goods and services seeking \$US in exchange. That total notional demand is the sum of both the \$US needed to pay taxes and \$US denominated net savings desires. Stylized, the non-government sector offers goods and services for sale to satisfy their need to pay taxes and their desires to net save (Mosler, 1993).

The Federal Reserve Bank (Fed)³, as with any bank, is the single source of credit balances in client accounts on its balance sheet. The \$US credit balances of commercial bank members at the Fed are called reserves. As the single supplier of reserves, the Fed necessarily sets the rate of interest it pays on reserves as well as the rate of interest it charges the commercial banks to borrow \$US. Fed operations staff implement a politically determined policy rate either by the rate of interest paid on reserves or the interest charged for reserve deficiencies. The interest paid on US Treasury bills- short term discount notes sold by the US Treasury, as well as the rate of interest paid on longer term US Treasury notes and bonds, is determined by market forces, and is largely a function of the Fed's overnight policy rate along with expectations of changes in the policy rate.

US Treasury securities are, functionally, \$US balances in time deposits, known as securities accounts, that are serviced by the Fed. The purchase and sale of US Treasury securities is evidenced by \$US balances shifting between reserve accounts

³Congress sets the operating procedures for the Fed and the US banking system, including regulations regarding overdrafts (negative balances), which are accounted for as loans from the Fed. The Fed itself neither has, nor does not have, \$US. Rather, it acts as the "scorekeeper" for the members, crediting and debiting their accounts as per their instructions, and accounting for what it does with debits and credits in accounts on the Fed's balance sheet.

The Fed also keeps accounts for the Treasury and for foreign central banks, and marks balances in the various accounts up and down- credits and debits- on instructions from those entities with accounts (Mosler and Armstrong, 2019).

and securities accounts. The purchase of US Treasury securities is settled by debiting reserve accounts and crediting securities accounts, and at maturity, the securities accounts are debited and reserve accounts are credited.

Single suppliers (monopolists) set two rates. The first is known as the “own” rate, which is how the item controlled by the monopolist exchanges for itself. For a currency monopolist, like the Fed, the own rate is the policy determined \$US interest rate. Additionally, monopolists set terms of exchange for how their item exchanges for other items. For a currency that is called the price level, which is necessarily a function of prices paid by the currency monopolist.

With the US government (through agents) the sole supplier of the \$US that it requires for the payment of taxes, the US monetary system is a public monopoly. Government spending is settled by the crediting of reserve accounts, which only the Fed can do, and tax payments are settled by debiting reserve account balances credited by the Fed⁴. The government, as a single supplier, is thereby (de facto) setting terms of exchange when spending \$US to purchase goods and services⁵.

Market forces only determine relative value, expressed by how quantities of various goods and services exchange for each other. Absolute value in terms of the conversion rate of a numeraire is necessarily introduced to a market exogenously. To express absolute value in terms of a numeraire, markets require information as to the conversion rate between the numeraire and at least one of the goods and services exchanged in the market. For example, markets need to know the price in \$US of at least one item before the market prices all other items in \$US.

The prices paid by the state, as single supplier of \$US needed to satisfy coercive tax liabilities, exogenously transmit the value of the \$US⁶, thereby providing the information

⁴ Commercial banks act as agents for their depositors. Fed credits to commercial bank reserve accounts as instructed by the Treasury are most often for what is called “further credit” to the commercial bank account of the recipient depositor’s account. And when a commercial bank depositor instructs his bank to make a tax payment, the commercial bank instructs the Fed to debit its reserve account on behalf of the taxpayer.

⁵ US government spending is through its agents, which include the Treasury, the Fed, and other agents that conduct government spending, including those receiving transfer payments.

⁶ Increases in the price level are not per se a result of increases in the *quantity* of spending (or increases in the money supply), rather they are about the *prices paid by the government*. The value of the currency is defined by what a given amount of it buys. So, for example, if the government increases purchases at current prices, regardless of the quantity of money spent, that additional (price constrained) spending has not driven up prices, and the value of the currency has not been altered.

However, if the government instead pays more for the same items purchased, the value of the currency, by definition, has become lower, as it takes more of it to buy the same quantity than was previously the case.

Of further note is the following inverse relationship. For a given fixed nominal tax liability and savings desire, when paying higher prices the state both redefines the value of the currency downward and purchases less in real terms. Therefore, the state can, as a matter of arithmetic, when paying higher

of nominal value that market forces then incorporate as they continuously allocate resources by price. Without that information there could be no \$US denominated expression of relative value. The nominal value of the \$US would be unspecified, and there would not be effective \$US denominated aggregate demand. Only with state spending can the \$US express a nominal exchange value, and non-government \$US denominated spending take place. As all nominal prices can necessarily be traced back to prices the state pays when spending its currency, the price level therefore consists of prices dictated by government spending policy along with all other prices subsequently derived by market forces, all of which operate within the government's institutional structure.

With a convertible currency fixed exchange rate policy such as a gold standard, the government sets the price of gold and allows all other prices to adjust and express value relative to gold. The US government, for example, has previously fixed the \$US to gold by standing by to buy or sell \$US at the conversion rate, and allow market forces to set all other \$US prices⁷.

With the US's current floating exchange rate policy, the prices paid by government, in general, continuously send pricing information to the private sector, with the only open ended spending at the margin being unemployment compensation.

In the US, tax liabilities tend to increase as the US government pays higher prices, due to transaction taxes that are a function of prices. These include income taxes where higher nominal incomes result in higher tax liabilities, and sales taxes where higher prices also result in higher tax liabilities. Additionally, nominal savings desires are also a function of prices, as they are grounded on real rather than nominal considerations. So as prices rise, nominal savings desires rise accordingly. Business liquidity needs and inventory and receivables financing needs also rise as prices rise. Therefore, in general, in an economy experiencing a continuous increase in prices there is an increasing demand for \$US denominated net financial assets⁸ which are a direct consequence of US government deficit spending. Without this increase, real savings desires cannot be achieved, as then evidenced by unemployment and excess capacity in general⁹.

prices only buy more real goods and services by increasing tax liabilities or through increased savings desires (Tcherneva, 2002).

⁷ "If the fixed link between national currencies and gold is preserved, stability of exchange between such is ensured, and a broadly based community of interest is created for keeping the purchasing power of gold itself stable and free from violent fluctuation. Expressed in simplest terms, the necessary requirement for the maintenance of the established ratio between a currency and gold consists in the obligation of the Government, or the currency authority, to buy and sell gold at a fixed parity on demand..." (Kisch and Elkin, 1928).

⁸ Such a view is consistent with the endogenous money approach (Wray, 2015)

⁹ Mosler's explanation of the 1979 recession in the US follows from this point. The US fiscal balance adjusted for inflation tightened as the inflation indicators increased faster than government spending, resulting in a contraction of the real public debt that caused a severe recession (Mosler, 2023).

The US Congress has designated agents to act on its behalf. These include the Fed which operates the monetary system, the Treasury which executes purchases and sales as directed by legislation by instructing the Fed to debit or credit appropriate accounts, and the commercial bank members of the Federal Reserve System that are regulated and supervised.

US commercial banks, as agents of the US government, have a direct influence on the price level. Bank lending supports private sector deficit spending that purchases goods and services. Through regulation and supervision, the scope of government policy includes the establishment of terms and conditions of bank lending, including the size of the loans and prices paid by those who borrow from the commercial banks. Without regulation restricting bank lending, the inherent unlimited liquidity of a floating exchange rate policy could result in accelerating, inflationary private sector deficit spending that could also undermine the government's ability to provision itself (see below).

2. Analysis of The Sequence of Monetary Operations

The following is the causal sequence of events for the US monetary system:

1. Establish tax liabilities with the \$US as the tax credit
2. Government spending of \$US
3. \$US tax payments and payments for securities purchased from government

The process of government provision begins with \$US denominated tax liabilities that result in goods and services being offered for sale in exchange for \$US. The US government can then spend \$US to provision itself. After receiving payment in \$US, taxpayers can then pay their \$US denominated tax requirements and buy government securities from the government¹⁰. It is inherent in Fed monetary operations that, from inception, government spending precedes and thus provides the funds for payments to the government. At the Fed, crediting of reserve accounts necessarily takes place prior to debiting reserve accounts. Fed monetary operations staff say it this way: "You can't conduct a reserve drain without a prior reserve add." They have to credit member bank reserve accounts before they can debit them¹¹.

To this point, the Fed stands by continuously to engage in what are referred to as open market operations in order to carry out what they call a "reserve add" to facilitate both

¹⁰ The driving force of the monetary system is the private sector's need for the government's spending of \$US to pay its taxes, and not the widely assumed government's need of \$US to be able to spend.

¹¹ Furthermore, an overdraft should be understood as, functionally, a loan to the commercial bank that functions as a credit to its reserve account.

tax payments and securities purchases. This includes what are called repurchase agreements whereby the Fed lends the banks the needed \$US and accepts the newly purchased Treasury securities as collateral for the loans. Monetary operations personnel call this process, which is their prime responsibility, offsetting operating factors. The critical micro foundation of the monetary system is that the \$US required to pay taxes and purchase government securities originate from the government through its agent, the Fed.

From the understanding of the sequence, what is called the public debt is best described as the \$US spent by the government that have not yet been used to pay taxes. And those \$US remain outstanding until used to pay taxes. They take the form of \$US balances in reserve accounts at the Fed, \$US balances in securities accounts at the Fed, or physical cash, all of which are liabilities of the Fed. The sequence is:

- 1) the government (viewed on a consolidated basis) spends first, crediting reserve accounts and, subsequently,
- 2) Reserve accounts are debited for the payment of taxes and for the purchase of securities¹².

3. Inflation

The standard textbook definition of inflation, in the context of floating exchange rate policy, is “a continuous increase in the price level.” The price level, however, is indeterminate, resulting in the use of inflation indicators such as the Consumer Price Index (CPI), which contains prices of selected goods and services for the politically determined purpose of identifying the cost of living. The continuous rate of change of the CPI, however, is also indeterminate. Central banks can only calculate, for example, how the CPI has changed in the past, and they can forecast subsequent rates of change, but the current rate of change does not lend itself to calculation. Nor, after decades of research, do central banks have a theory as to the source of the price level. By default, the source of the price level is assumed to be entirely historic, derived from an infinite regression of the current CPI into the past.

For purposes of this analysis, the definition of inflation and the term price level are from the reference point of today’s decision making agents. While those agents don’t know what prices may be in the future, current prices for immediate delivery and prices for

¹² Note that the ability of the Fed to make payments is not revenue constrained. The willingness of the US government to instruct the Fed to execute timely payments is the sole variable of credit worthiness.

those same items purchased today for delivery at a future point in time can be calculated.

From this understanding we deduce the determinate academic definition of inflation to be: "The continuous increase in the term structure of prices faced by economic agents today for purchases and sales for future delivery dates." This concept is also known as forward pricing, which also happens to be a direct function of the policy rate of interest administered by the central bank. And it also remains consistent with the standard textbook definition of inflation as a continuous increase in the price level.¹³

There is a critical distinction between changes in the price level over time, and the rate of inflation expressed by the current term structure of prices. The price level changes over time as a function of prices paid by the US government when it spends (fiscal policy), while changes in the term structure of policy interest rates (monetary policy as decreed by the Fed) directly alter the term structure of prices. And while the term structure of prices is not a forecast of changes in the price level, that is not to say it does not influence the future direction of the price level.

With the rate of inflation academically defined as an expression of the central bank's policy rates, increases in policy interest rates directly increase that measure of the rate of inflation. Additionally, monetary policy directly alters the fiscal balance. Increases in the policy rate of interest cause government interest expense to increase which is also an inflationary bias given current institutional structure. Of further note is that the payment of interest is a distribution only to savers, and in proportion to the size of their savings. Therefore, while a positive rate of interest constitutes expansionary fiscal policy, it is an entirely regressive public policy (Armstrong and Mosler, 2020).

4. The Commercial Banking System and Monetary Policy

The Fed is a public bank that maintains reserve accounts for its member commercial banks. This allows the commercial banks to transfer funds to each other by instructing the Fed to debit their reserve account and credit a recipient bank's reserve account, in the same way as the commercial banks effect transfers between client accounts within their banks.

Commercial bank purchases are paid for by crediting client accounts on their balance sheet, which constitute new assets of those clients and new liabilities of the bank. Bank

¹³ Ironically, while the term structure of forward prices is a direct function of the policy rate, we have found no evidence of discussion at any central bank meeting in this regard.

lending is a subset of bank spending. It is the purchase of financial assets (loans, securities, etc.) which the bank pays for by crediting client accounts, as is the case for the purchase of non-financial assets. Bank assets and liabilities are increased when the bank purchases assets from its depositors.

The US follows the standard approach to monetary policy employed by central bankers including a Fed monetary policy committee that decides the policy rate of interest for the \$US. The underlying assumption is that inflation (as they define it) is indirectly a function of the policy rate, through several listed channels. Increasing the policy rate is understood to reduce inflationary pressures by reducing aggregate demand. Accordingly, rate increases are referred to as 'tightening' monetary policy to make it more 'restrictive.'

The monetary policy model also assumes a neutral rate that is not a policy choice, so named because it is consistent with desired price stability as mandated by the legislature:

“The neutral rate of interest, which we call interchangeably natural interest rate¹⁴, neutral rate, or simply r^ , can be defined as the level of the short-run real interest rate that is consistent with output near its potential, and stable inflation near its target (see Laubach and Williams, 2003). The neutral rate is determined in the domestic market of loanable funds, so factors that affect this market prompt changes in the neutral rate. We can classify these factors into structural (such as potential growth, demographics, financial-markets development, etc.) and transitory (such as macroeconomic shocks...). Since these factors are exogenous to central banks, r^* is not a policy choice” (Carrilo et al. 2018, parentheses in the original).*

We raise two issues with this model, one tactical and the other strategic. Our tactical issue is in regards to the monetary influence of interest rates of the private sector lending channel, as it directly influences fiscal policy. Within the commercial banking system and for the non-government sector in general, interest rates are entirely distributional. For every interest payer, there is an interest earner. Changes in rates only shift income between borrowers and lenders so any macro effect is a result of differing propensities to spend. Central Banks agree, and assume that when rates rise, for example, borrowers decrease their (deficit) spending to a greater degree than savers increase their spending, and vice versa, concluding that increasing rates is contractionary and lowerer rates expansionary¹⁵.

¹⁴ See Wicksell (1898); See Amato (2005) for discussion of the historic role of the natural or neutral rate in the conduct of monetary policy.

¹⁵ See Andolfatto (2021), who notes, “A tighter monetary policy ends up increasing the interest expense of debt issuance. And if the fiscal authority is unwilling to curtail the rate of debt issuance, the added interest expense must be monetized—at least if outright default is to be avoided.”

Although the propensity estimates of the central bankers may be accurate, the US, with a \$US denominated public debt held by the public of approximately 100% of GDP and a 4.5% policy rate, is a substantial net payer of \$US interest to the economy. This results in government deficit spending for interest payments to the economy approaching 4% of GDP. The macro data for the US indicates the expansionary effect of this deficit spending for interest payments far exceeds any contractionary effects of the differing propensities to consume between private sector borrowers and lenders (savers). That is, higher rates may discourage borrowers, but the total addition to the income of lenders more than makes up for it. Thus higher rates act as a net expansionary fiscal force rather than the net contractionary monetary force assumed by central bankers. Global central bankers have it backwards, easing when they believe they are tightening, and tightening when they believe they are easing.

Evidence shows that high nominal rates, often as required by IMF terms and conditions requiring the policy rate to be set above the inflation rate, have not been successful in bringing down inflation, and instead are associated with increasing rates of inflation. Likewise data from Japan, the eurozone, and the US indicate that decades of 0 and near 0 rates did not increase aggregate demand or inflation from private sector credit expansions, and, to the contrary, seem to have promoted low inflation and low demand (Mosler and Armstrong, 2019).

Our second point of concern is that the concept of the neutral rate in the context of floating exchange rate policy is an anachronism, the result of echoes of analysis done in the context of fixed exchange rate regimes. Historically, the neutral rate literature arose in the context of fixed exchange rate, convertible currency policy, and has merit in that context, but is not applicable to non-convertible, floating exchange rate policy. And yet it is at the core of current central bank monetary policy with floating exchange rate regimes.

Amato (2005, p.9) concludes, “The natural rate has figured prominently in the academic literature for many decades, and, in particular, the focus has shifted towards it again with the recent development of New Keynesian models. Given the current mandates of most central banks, we have argued that the natural rate automatically assumes a central role in monetary policy, whether explicitly or implicitly.”

Interestingly, note this statement from the above referenced passages: *“The neutral rate is determined in the domestic market of loanable funds, so factors that affect this market prompt changes in the neutral rate.”*

What is called loanable funds theory applies to reserve constrained, fixed exchange rate convertible currency policy, and not to floating exchange rate policy, where the currency

is not reserve constrained and “endogenous money” theory applies¹⁶. This failure to recognize the core, fundamental distinctions between fixed vs floating exchange rate policy is a fundamental error in central bank analysis of the neutral rate of interest and monetary policy in general.

With convertible currency, interest rates are market determined. The \$HK, for example, is convertible into \$US with the HK Monetary Authority which continuously intervenes as both buyer and seller of \$US at the decreed exchange rate. This intervention is the point of contact where information of the absolute value of the \$HK is transferred to the marketplace, which is the price paid for \$US reserves held by the HK Monetary Authority.

The 90 day \$HK interest rate is expressed by the difference between the spot price which is fixed by the HK monetary authority, and the price 90 days forward which is market determined. Owners of \$HK have the option to convert to \$US, and the term structure of interest rates - as expressed by price differentials of the forward market - expresses indifference levels between holding \$HK vis-a-vis converting to \$US. The interest rate that clears the market is the rate at which the foreign exchange reserves backing the convertible currency are stable, hence the term neutral rate. And this neutral rate changes as a function of perceptions of holders of \$HK. A seller of \$HK versus \$US 90 days forward can, for example, drive down the forward price to a price that attracts a buyer, and thereby increase the 90 day \$HK interest rate to the level deemed attractive to the buyer.

Furthermore, with fixed exchange rate policy, where foreign exchange reserves are obtained by the state purchasing those reserves and paying for them with additional convertible currency¹⁷, and with the price level expressing relative value in relation to the fixed price of the monetized foreign exchange reserves, changes in the quantity of monetized reserves at the given fixed price is defined as changes in the general price level, as described in the Quantity Theory of Money¹⁸. Consequently, state efforts to support an interest rate that differs from the neutral rate results in a change in the quantity of monetized foreign exchange reserves, which, per definition, is a change in the price level. Therefore, with fixed exchange rate policy, inflation is a function of interest rates, and the zero inflation rate of interest is the continuously changing neutral rate, as determined by market forces, which is coincident with foreign exchange reserve stability.

¹⁶ See, for example, Wray (2015).

¹⁷ See Kisch and Elkin (1928).

¹⁸ This study of fixed exchange rate policy, and the gold standard in particular, is called the Quantity Theory of Money. See, for example, Hawtrey (1927) and Bordo (1981).

This theory is only applicable to fixed exchange rate policies (such as those of Wicksell's era) where National Savings included the reserves backing the convertible currency, and a government budget deficit, for example, was accounted for as a net reduction of those reserves. With non-convertible currency floating exchange rate policy a government budget deficit is not a claim on reserves and so this definition of National Savings is not applicable.

Amato (2005, p.3) notes, *"For instance, economists during the inter-war period followed Wicksell in emphasising the property of the natural rate as the interest rate that equilibrates savings and investment."* Amato (ibid, parentheses in the original) continues with the following which indicates that fundamental support for New Keynesian floating exchange rate theory is but an echo of fixed exchange rate theory: *"Furthermore, the New Keynesian definition can be seen as a synthesis of Wicksell's definitions. Because the natural rate is the interest rate realised in general equilibrium, it is implicitly the rate consistent with savings equal to investment (in a closed economy)"*¹⁹.

Our point here is that the analysis of the neutral rate arose from the Quantity Theory of Money, as applied to fixed exchange rate policy analysis. The Quantity Theory of Money is inapplicable to non-convertible floating exchange rate policy, which does not share the influence of bank deposits on the price level²⁰.

In contrast to the \$HK, with the \$US and the Fed's floating exchange rate policy, a seller of \$US 90 days forward (vs another currency) puts equal downward pressure on both the forward price and the spot price of the \$US, which is not fixed by Fed intervention, such that the spread between spot and forward continuously discounts the Fed's policy rate. The Fed is the single supplier of credit balances to reserve accounts which do not have the option to convert, and is directly the price setter for rates it pays on reserves, and indirectly on the rates paid on Treasury securities which reflect indifference levels with regard to future Fed policy rate decisions. Interest rates remain set by policy, while the exchange rate is market determined. And with floating exchange rate policy, the price level ceases to be the relative value between the now non-existent monetized reserves and all other prices.

The following example is to illustrate how exchange rate policy results in the same real event results in opposite nominal outcomes. A new gold discovery while on a gold

¹⁹ This is a de facto indictment of New Keynesian theory as, under floating exchange rate policy, the intersection of savings and investment is an identity and not a function of interest rates.

²⁰ Amato (2005, p. 5) notes, quoting Humphrey (1997) "...the cumulative process is squarely in the tradition of the quantity theory of money. He suggests that the cumulative process was 'nothing less than a full-scale extension of the [quantity] theory to account for the influence of bank deposits on the price level...' (Humphrey, 1997, p 82, parentheses in the original)." He continues, "...Second, the cumulative process is a theory of inflation rooted in disequilibrium in the market for loanable funds" (ibid, p.6).

standard- a fixed exchange rate policy where the currency is convertible into gold- causes inflation. The general price level increases as the government buys the new gold at the fixed nominal price and pays for it with new convertible gold certificates, and that increased currency held by the economy reduces the relative value of gold, which is evidenced by an increase in the price level. In contrast, the same gold discovery with a floating exchange rate policy where the price of gold is not fixed by the government drives down the price of gold and is viewed as a deflationary event.

We assert that the fixed exchange rate concept of a neutral rate has no application for the \$US floating exchange rate policy, yet it continues to be the basis for Fed monetary analysis. The notion of inflation being a function of interest rates originated with fixed exchange rate policy analysis. This analysis applied to the \$US when it was fixed to gold, but was rendered inapplicable after convertibility was suspended and a floating exchange rate policy initiated. The narrative of the neutral rate being subject to continuous change has also been carried over from fixed exchange rate policy, without independent fundamental support. Such support is now limited to regression analysis to attempt to find correlations between the policy interest rate and aggregate demand and inflation indicators, all of which have been inconclusive. It is much like navigating with the wrong map, but with sufficient confirmation bias to continue to pursue failed policies.

5. Conclusion

This paper revisits and develops the framework for the analysis of the price level and inflation (Mosler, 2023). The framework describes the currency itself as a public monopoly, with the state setting nominal demand with its tax liabilities, and nominal supply as it provides the tax credits (\$US) that allow compliance with tax liabilities.

This framework facilitates an understanding of the source of the absolute nominal price level and how it changes over time, and the understanding of the determination of relative prices. It also incorporates the monetary and fiscal roles of interest rates with regard to the academic definition of inflation and the influence of policy rates on aggregate demand and market-determined expressions of relative value.

We conclude that The Fed “has it backwards” both tactically, as interest rate increases may be expansionary via the consequent fiscal outcome, and strategically, as the concept of the neutral rate is inapplicable to floating exchange rate policy. We suggest this has led to the errant forecasts of the last several years, and continues to be an obstacle to informed policy decisions.

We look forward to further discussion.

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