

Fiscal/Monetary Coordination in a Time of Crisis

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May 16, 2009

Outline

An eerie new landscape

Implications for monetary policy instruments and their effects

Implications for “central bank independence”

Some fallacies

Expanding the fiscal theory of the price level

A model with two interest rates

What's new

- ▶ Size of the balance sheet.
- ▶ Assets no longer mainly Treasuries.
- ▶ Large “special” Treasury deposit.
- ▶ Swaps with foreign central banks.
- ▶ “Excess” reserves now far bigger than required reserves.
- ▶ Deposits bear interest, at rates for now above Treasuries.

How did we get here?

- ▶ To stabilize markets, the Fed acquired non-Treasury assets.
- ▶ It could to some extent do so without expanding its balance sheet, by selling Treasuries in corresponding amounts.
- ▶ But it began to run out of Treasuries to sell: Two ways to get around this.
 - ▶ The special Treasury deposit. Provided T-bills, with a corresponding deposit liability to the Treasury.
 - ▶ Interest on reserves. Allowed raising funds directly from deposit inflows to the Fed.

Alternatives

- ▶ While interest rates are positive and there is no interest on reserves, expansion of the Fed balance sheet results in approximately proportionate expansion of the money stock and commercial bank balance sheets (the money multiplier).
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- ▶ However in fact it seems to have been used as a reserve — maintaining a stock of liquid assets that could be sold in open market operations to contract, if necessary.
- ▶ Because, when the power to pay interest on reserves was enacted, this provided an alternative way to contract quickly,
- ▶ The special Treasury deposit has been declining and may no longer be necessary.

Alternatives, II

- ▶ Like the Treasury deposit, interest on reserves allows expansion of the balance sheet without expansionary effects on bank behavior.
- ▶ It is not clear to me (but may be clear in the legislation) whether interest-bearing deposits at the Fed count against the Federal debt ceiling.
- ▶ Probably they don't, in which case they create a major leak in the US system for legislative control of debt creation.

Alternatives, II

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- ▶ It is not clear to me (but may be clear in the legislation) whether interest-bearing deposits at the Fed count against the Federal debt ceiling.
- ▶ Probably they don't, in which case they create a major leak in the US system for legislative control of debt creation.
- ▶ Or, they are not backed by the “full faith and credit” of the US government — which has implications for inflation control.

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Why interest on reserves?

- ▶ Traditional argument: paying no interest and requiring reserves is a tax on banking and presumably therefore distorting.
- ▶ Interest at close to market rates can achieve the effect of the “Friedman rule” (satiating the public in money balances) without requiring deflation — at least if we ignore currency. (Now 1/3, instead of over half, of Fed liabilities.)
- ▶ In the current circumstances, the main appeal may be that raising the rate on reserves can create a strong contractionary effect without requiring sale of (illiquid) assets.

The money multiplier, the Fed Funds rate

- ▶ “High powered money” no longer has high power, if interest on reserves is at or above the rate on T-bills and the perceived return on private sector loans.
- ▶ The Fed still sets a Fed Funds target, but there is little trading now on this market and the actual rate remains below the announced target and below the rate paid on deposits.
- ▶ In effect, the policy rate is now the rate on deposits, and commercial banks are not using the Fed Funds market.

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Fiscal dimensions of monetary policy

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- ▶ Central bank operations generate fluctuating levels of net earnings (seigniorage), most of which are turned over to the Treasury as revenue.
- ▶ Central bank balance sheets sometimes go into the red. The Treasury may then recapitalize it by creating, and giving to the central bank, new government debt.

The old working definition of Fed independence

- ▶ Balance sheet risk was negligible, as assets were interest earning, dollar-denominated, US debt and liabilities were also dollar-denominated government paper.
- ▶ Seignorage was therefore always positive, though varying.
- ▶ Interest rates were low and debt not very high, so the interest expense item in the budget was modest. (Though it rose to 20% of the budget for a few years in the early 80's.)
- ▶ Independence meant that the legislature and the Treasury did not complain (much) about seignorage fluctuations or about the effects of interest rate changes on the Treasury's interest expense.

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- ▶ Nonetheless it has taken on risk, most notably in its recent issuance of guarantees in the CitiBank rescue and in the “Maiden Lane LLC” invention that supported Bear Stearns, but also in some of the other new types of assets it is acquiring.
- ▶ With interest being paid on reserves, the flow of seignorage will be smaller, and could become negative.

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- ▶ Fed can always “print money” to pay its bills.
- ▶ There is no possibility of a run on the Fed, since its liabilities make no conversion promise.
- ▶ A commitment to a path for inflation or the price level makes the balance sheet matter.
- ▶ Without Treasury backing, the Fed must rely on seigniorage to raise revenues, and that can conflict with inflation-control goals.

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- ▶ The Fed needs to be allowed to issue debt on its own account
- ▶ The Fed could have trouble “unwinding” its balance sheet as fast as necessary to control inflation
- ▶ The vast expansion of reserves in itself poses an inflationary threat
- ▶ Fiscal stimulus can get us out of recession; then a resolute Fed can prevent inflationary consequences
- ▶ The administration should be setting targets now for when it will have the budget back in primary surplus

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The basic idea

- ▶ The price level is the rate at which *all* mature paper liabilities of the government trade for goods.
- ▶ Nominal debt issue promises only a stream of returns in the form of government-issued paper.
- ▶ Its real value is determined by the future primary surpluses, plus seigniorage, that generate real payments to the debt holders.
- ▶ This is the same algebra that determines the price of a firm's equity.
- ▶ Neither private equity nor public nominal debt promises any specific real return. Their value depends on expectations of what real resources and commitments back them up.

Why “expand” FTPL?

- ▶ The existing formal FTPL models mostly assume all government liabilities to be domestic-currency denominated. (One or two also introduce “dollar” denominated debt to discuss developing countries.)
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- ▶ We are now considering a unified government balance sheet that includes substantial holdings of assets that are not risk free.
- ▶ The asset returns may not rise in proportion to a rise in the interest rate on government liabilities — indeed may well move in the opposite direction.
- ▶ With interest paid on reserves, the central bank has to set (at least) two interest rates — that on reserve deposits, and that on government debt held for their yield alone.

The fiscal multiplier

- ▶ A formula for FTPL price level determination

$$\frac{B_t}{P_t} = E_t \sum_{s=1}^{\infty} \Phi_s \tau_{t+s} .$$

- ▶ A deficit backed by expected future increases in primary surpluses has no impact on prices.
- ▶ A deficit unbacked by any expected future increases in primary surpluses has an impact on prices — until prices increase, it makes individuals' wealth, and hence their desired spending, rise.
- ▶ This is the right way to think of Keynesian multipliers (if we introduce sticky prices).
- ▶ They can be very large or non existent, depending on how deficits affect expectations of future fiscal policy.

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A precedent

Sargent and Wallace showed long ago that a policy of setting the interest rate on reserves equal to the rate on private investment leads to indeterminacy of the price level.

Agents maximize $E[\sum \beta^t \log C_t]$ subject to

$$C_t(1 + \gamma f(v_t)) + \frac{B_t + M_t}{P_t} + \tau_t = Y_t + \frac{R_{t-1}B_{t-1} + R_{t-1}^*M_{t-1}}{P_t}$$
$$v_t = \frac{P_t C_t}{M_t} .$$

$$GBC : \frac{B_t + M_t}{P_t} + \tau_t = \frac{R_{t-1}B_{t-1} + R_{t-1}^*M_{t-1}}{P_t}$$

$$MPolicy1 : \frac{R_t^*}{R_t} = \psi < 1$$

$$MPolicy2 : R_t = \beta^{-1} \left(\frac{P_t C_t}{P_{t-1} C_{t-1}} \right)^\theta, \quad \theta \geq 0$$

$$FPolicy : \tau_t \equiv \bar{\tau}$$

Solution

- ▶ This framework leads to a determinate price level.
- ▶ But it requires active fiscal policy to allow this result. With passive fiscal policy, the price level is indeterminate.
- ▶ The result does not depend on $\theta > 1$ (the Taylor principle).
- ▶ The price level is determinate with any $\theta > 0$, but with $\theta > 1$ inflation and the growth rate of money and debt is likely to be explosive. With $\theta = 0$, so both rates are pegged, there is sure to be an equilibrium with stable inflation.
- ▶ I think, but am not yet completely sure, that pegging R , while setting

$$R^* = \kappa \left(\frac{P_t C_t}{P_{t-1} C_{t-1}} \right)^\theta, \quad \theta > 1$$

leads to a unique price level in the presence of passive fiscal policy.