Comment on Paul Krugman's "It's Baaack: Japan's Slump and the Return of the Liquidity Trap," Brookings Papers on Economic Activity 2, 1998.

Kenneth Rogoff: This is a truly inspired paper on Japan's ongoing "Great Recession," although I have to keep pinching myself to ask if its main thesis can really be true. Is the equilibrium (full-employment) medium-term real interest rate for Japan actually negative, so that unless the Bank of Japan (BOJ) resigns itself to sustained inflation, the zero bound on nominal interest rates will present serious problems? Has the BOJ so thoroughly convinced the public of its anti-inflation credi-

bility that it has lost the power to rekindle inflation now that Japan needs it?

The idea that the non-negativity constraint on nominal interest rates may pose problems in a world of low inflation has been receiving a growing amount of attention. Lawrence Summers has warned that there may be times when optimal stabilization policy calls for temporarily inducing negative nominal interest rates, but that this may be impossible for a central bank that has successfully drained all inflationary expectations out of the economy.[1] Recent papers that explore this issue in more detail (without necessarily calling it the liquidity trap) include those by Jeffrey Fuhrer and Brian Madigan, Alexander Wolman, and Athanios Orphanides and Volker Wieland.[2] All of these authors, like Krugman, use well-specified maximizing models to understand the importance of the zero bound. What distinguishes the present paper from the others (aside from its open economy perspective and the extraordinary clarity of its prose) is Krugman's contention that in Japan, negative real interest rates are not merely a useful weapon in the arsenal of monetary policy but an absolute necessity. Even if Japan were not in a recession, he argues, generational imbalances would still result in a negative real interest rate, at least in the short to medium run. If this is true, any full-employment equilibrium must have expected inflation (at least over the horizon that the equilibrium real rate is negative), and monetary policy is powerless to stop it. Thus the BOJ's efforts to maintain price stability are not merely neutral; they are actually contractionary in an economy badly in need of stimulation.

Few academic economists would disagree with Krugman's general conclusion that after seven years of deep recession, the time has come for the BOJ to stop trying to stabilize prices and to allow at least a bit of inflation. This part of the story is conventional wisdom, right or wrong. But Krugman's specific recommendation is far more unorthodox: he would have the Bank of Japan try to bring inflation (and inflationary expectations) up to 4 percent and keep it there for fifteen years. In a world where central banks are still congratulating themselves for conquering the inflation of the 1970s and 1980s, this is a truly radical suggestion. But if the full-employment equilibrium (medium-term) real

1. Summers (1991).

2. Fuhrer and Madigan (1997); Wolman (forthcoming); Orphanides and Wieland (1998).

interest rate is indeed negative, then, as Krugman elegantly demonstrates, inflation is eventually going to express itself in some form, no matter what the BOJ does. For example, Krugman's first model illustrates that an attempt to target next period's price level will tend to drive down the current price level (so the economy can have the inflation it needs to achieve a negative real interest rate).

This is an interesting and remarkable insight, but the prescription for long-term doses of inflation is predicated on the assumption that the full-employment real interest rate should be negative. Is this plausible in a country that is still investing well over 20 percent of GDP? What about the fact that Japanese savers can lend their surplus savings to the rest of the world, rather than accept negative real rates at home? I admit that Krugman makes a forceful case that "crazy" just might be "right." His casual argument is that the aging Japanese population, desperate to provide for its own retirement, is saving so much that it would take a negative rate of return to clear the market. He goes on to offer a simple overlapping generations model in which land yields a negative real return, even though its marginal product is positive. I should note that while this result turns on the empirically plausible assumption (at least for Japan) that future working generations will be smaller than the current one, labor-augmenting technological progress could substantially mitigate or even eliminate this problem.

As for why Japan does not simply lend its surplus to the rest of the world, where equilibrium real rates are presumably still positive, an obvious answer is that international capital markets are far from fully integrated. Moreover, Krugman notes that even if capital markets were fully integrated, imperfect integration of goods markets can still lead to real, consumption-based, interest differentials. Admittedly his model, in which the relative size of traded and nontraded goods production is exogenous, exaggerates the prospects for negative real rates. If nontraded goods are really going to be so scarce in the future, there should be a strong incentive to shift investment in that direction. This would raise future nontraded output and therefore raise the consumption-based real interest rate. Still, all in all, Krugman builds an interesting case that equilibrium real interest rates may be much lower in Japan than is suggested by historical norms.

Whether or not real interest rates need to be negative for fifteen years or just for two or three years, it is hard to argue with the view that the

time has come for Japan to risk some inflation. No one should seriously believe that the BOJ would face any significant technical problems in inflating if it puts it mind to the matter, liquidity trap or no. For example, one can feel quite confident that if the BOJ were to issue a 25 percent increase in the current supply and use it to buy back 4 percent of government nominal debt, inflationary expectations would rise. The real obstacle is that the BOJ does not want to blemish its record of price stability. As Krugman's formal analysis shows, in fact, if the BOJ does not realize that it needs to let go of its long-term price level anchor, it might as well forget about even short-term stabilization policy—but that would seem a very second order issue in the midst of a record recession. The real problem is that the BOJ does not have the big picture right. It does not realize that a good conservative central bank should be willing to let the price level rise on a rainy day—and Japan is experiencing a typhoon.

Toward the end of the paper, Krugman intimates that the new European Central Bank, with its mandate to keep inflation low, may soon face similar problems, since European demographics are similar to those of Japan. This is an interesting observation, although the European Central Bank has a sufficiently flexible mandate that it could easily target an inflation rate of 1 or 2 percent for an indefinite period—if it were to perceive that such a policy was necessary.

I have glibly asserted that the BOJ can always inflate if it wants to, simply by increasing the rate of base money growth. Compared with the "normal" situation of positive interest rates, however, an inflation-happy BOJ would be flying partly blind. That is, with the short-term nominal interest rate temporarily stuck near zero, the BOJ would have to try to engineer its monetary expansion without the benefit of a very crucial feedback variable. This increases the risk that in trying to engineer a 4 percent inflation, the BOJ might find prices going up by 20 percent. Given the dire straits that Japan currently finds itself in, however, this small risk seems worth taking, for all the reasons that Krugman argues.

It is interesting to contrast Krugman's prescription for Japan with the conventional wisdom. The conventional wisdom is that, in addition to cleaning up its banks, what Japan needs most is real fiscal stimulus (as opposed to phony accounting). Krugman rightly notes that modern models of how government spending affects output do not necessarily

yield a significant multiplier effect, even in the presence of Keynesian price rigidities—a result which does not in fact depend on whether one believes that the country is in a liquidity trap.[3] But he neglects to point out that even if fiscal stimulus does not have a multiplier effect on output, it could still serve to raise the real interest rate, thereby greatly simplifying the task of the monetary authorities. And while tax cuts do not provide any stimulus if Ricardian equivalence holds—though in the model Krugman uses to demonstrate why real interest rates might be negative, Ricardian equivalence does not hold—fiscal stimulus can also be applied by increasing government spending on, say, infrastructure. Certainly, if having more government infrastructure investment means that big construction firms compete to bribe politicians and then build yet another bridge with a $50 toll, it does not sound appealing. But considering that 30 percent of the houses in the greater Tokyo area do not have access to sewage, Narita airport is inadequate, the hospitals are awful, the university system weak, it should be possible to come up with something.

So a combination of temporary government spending and increases in money supply would solve the liquidity trap problem—if there is one. Moreover, using fiscal policy in conjunction with monetary policy might help to temper any depreciation of the yen that a monetary expansion would cause.

Krugman correctly argues that expansionary monetary policy in Japan would most likely benefit the country's neighbors and trading partners, even if it does lead to a significant depreciation of the yen exchange rate. This perspective is quite consistent with recent theoretical research on "new open economy macroeconomics."[4] It is also quite consistent with the interpretation of the Great Depression proposed by Barry Eichengreen and Jeffrey Sachs.[5] They argue that those countries that abandoned gold early and inflated did themselves a lot of good at relatively little cost to the rest of the world.

The lessons of recent research can be carried one step further. Uni-

3. Admittedly, in modern sticky price intertemporal models, the impact of government spending on the real interest rate may be quite different than in flexible price models. If a temporary increase in government spending leads to a concomitant increase in output, there is no tilt in the output available to consumers and no change in the equilibrium real rate. See Obstfeld and Rogoff (1995).

4. See Obstfeld and Rogoff (1996).

5. Eichengreen and Sachs (1985).

lateral Japanese monetary expansion would almost certainly be a good thing. But on top of a big monetary stimulus from Japan, it would be helpful to have a moderate level of stimulus from the United States and Europe, both to mitigate the depreciation of the yen and to enhance the global effects of the expansion. While I agree completely with Krugman that the BOJ should inflate, however, I find the prescription of 4 percent inflation for fifteen years too exotic. A shorter, sharper boost would seem to make more sense—say, three years of inflation cumulating to 20 percent. But then, I do not quite buy the view that short- and medium-term full-employment real interest rates for Japan are negative. And even if they are negative, the right policy is probably to raise the real interest rate through expansionary fiscal policy, which would then free monetary policy from its supposed liquidity trap.

Before closing, I should mention a couple of points about the modeling, which is certainly masterful. First, the theoretical results on the costs and existence of liquidity traps can be quite sensitive to the way in which money is introduced; shopping time models and money-in-the-utility function models can have a Pigou-type effect and yield different results. Second, it should be noted that if one subscribes to the Leeper-Sims-Woodford fiscal theory of the price level—which I do not, but it is darn clever—then there are reasons other than a liquidity trap why the central bank might lose short-term control over the price level.[6]

Although I have taken issue with some of the more unorthodox prescriptions in this paper, let me conclude by reiterating that it is a stunning piece of work. And it is going to make a lot of economists think harder about a problem that we should have been thinking hard about already.