Report on the article:
"It's baaack: Japan's slump and the return of the liquidity trap"

P. Krugman,

Brookings Papers on Economic Activity 1998: 2, 137—187

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A brief summary

In this article, Krugman deals with Japan's liquidity trap, i.e. that situation in which the nominal interest rate is close to zero, such that conventional monetary policy becomes ineffective due to the perception of monetary base and bonds as perfect substitutes. The aim of the paper is to develop a suitable framework to analyze the situation, both theoretically and empirically, understand its causes and suggest some possible solutions.

The rationale driving the author's work is the consideration that the occurrence of a liquidity trap was thought of being highly unlikely; however, its actual emergence, in a country like Japan, makes the topic interesting both from an economic theory and from a political economy perspective. The key message that Krugman wants to convey is that a liquidity trap involves a fundamental credibility problem: the public expects monetary policy to be only temporary, so that it becomes ineffective. Should the central bank be able to develop a reputation as "irresponsible", i.e. not targeting price stability in the future, monetary policy would regain its grip. The solutions suggested at the end of the paper should be interpreted as an attempt to revert this credibility problem and make the central bank commit to pursue a permanent policy.

In the first part of the article, the "enriched Keynesian" theoretical model is presented: the author starts from an IS-LM-like model and builds on it, by integrating rational behavior and intertemporal consistency. First, he develops a simple setting with a one-good, representative agent economy with flexible prices and no distortions; then, he modifies the model so as to include additional features: sticky prices (aka Hicksian liquidity trap); productive and investment possibilities; international trade under imperfect good-tradability; financial intermediaries. With this simple but revealing exercise, he shows the emergence of a liquidity trap and the consequences in each situation.

Some major insights are worth mentioning. First, in the basic model the flexibility of prices somehow prevents the potential perverse effect of an expansionary monetary policy during liquidity trap and full employment is still possible. The idea is that, although the nominal interest rate cannot be pushed below zero, price adjustment will leave the real interest rate unchanged. Conversely, when price rigidity is added to the picture, it is output that needs to adjust to consumption: however, its adjustment can only be limited and unemployment arises. It is as if, with low expectations on future income, people want to save more than the economy can absorb. Second, the paper sheds some light on the apparently contradictory conclusion that a liquidity trap can occur even with positive and significant levels of marginal product of capital: the reason, according to Krugman, lies on the presence of equity premium or low expectations on future Tobin's q, which discourage current investments. Third, even in the absence of distortions in capital mobility, international trade is not a *panacea* to liquidity traps: by adding to the model a non-tradable good, the result shows how, even at zero interest rate, the positive effects brought by an open economy (output increase and nominal depreciation) are of limited advantage and unemployment arises. The conclusion is less straightforward when the presence of financial intermediaries and the possibility for different types of aggregates are accounted for (monetary base, bonds, deposits): the final effects on the economy of the indifference between the three types at a zero interest rate are indeterminate.

In order to develop some suggestions about the possible solutions to Japan's liquidity trap, the second part of the article analyzes the situation of the country, based on some empirical evidence. First, Japan was at the time in a condition of output gap: although different approaches to its measurement (Okun's law-based method, Hodrick-Prescott filtering, OECD technique) lead to

different magnitudes in its estimation (1.2% up to 5%), all seem to agree that some output gap is indeed in place. Second, the Japanese traditionally high propensity to save has acted, according to the author, as an additional block to investments once the economy started to slow down and potential growth was endangered by limited demographic growth and total factor productivity decline. Finally, a microeconomic friction seems to have worsened the macroeconomic problem, i.e. the troubled bank sector situation, heritage of the 1980s asset bubble, which left a huge amount of bad loans. After an initial increase in lending (especially for risky projects), the introduction of new capital adequacy standard in 1998 led to credit rationing.

All of these Japan-specific considerations are taken into account when proposing possible solutions. Given the complexity of the problem analyzed and the somehow unconventional conclusions provided by the "enriched" model developed, the solution suggested by the author is an integrated approach, including three major policies. First, in line with traditional Keynesian theories, the Japanese Government should pursue a long-term (perceived as permanent) fiscal expansion, even though this poses some challenges both from economic (Government's deficit) and political perspectives. Second, the situation of the banking sector should be tackled urgently, although its short run effects might exacerbate the macroeconomic situation (via credit rationing). Finally, the innovative policy proposed by Krugman is the managed inflation: according to it, short of any role left for the nominal interest rate, the mirror approach could be to commit to a long period of sustained inflation, so as to drive the real interest rate below zero and exit the liquidity trap.

Pros of the paper

The article shows certainly some interesting features.

First, Krugman must be praised for bringing back some interest on a topic that had lost attention in the previous decades. Indeed, the liquidity trap caught the attention of few macroeconomists up to that moment: in this, Krugman's paper is one of the first attempting to shed some light on liquidity trap and he has stimulated the debate on the topic in the late '90s, both in favor or strongly disagreeing with his point of view. Japan's situation does not seem to be unique: as mentioned in the article, a reason for focusing on the topic is the risk that it could occur elsewhere. For example, a similar problem could hit Europe, where low nominal and real interest rates (even lower after 2007 crisis) could lead to a similar trap. Therefore, it becomes crucial to understand the mechanisms underlying the liquidity trap. Krugman offers simple and familiar tools, extensions of the widely known IS-LM model, to understand and tackle this danger.

The latter consideration leads to a second nice feature of the article, i.e. the fact that he takes as a starting point the IS-LM model and extends it, by including rational expectations and temporal consistency. This is a wise mixture between simplicity and dynamic modeling. Such an approach allows to provide very direct *prima facie* indications to a number of macroeconomic problems and can be used, as Krugman does, as a first benchmark to compare policies. The simplicity is preserved, while allowing for analyzing liquidity traps issues with familiar tools. The author also shows how a liquidity trap may be predicted even by these very simplified models and that, in these situations, normal macroeconomic advices can be highly misleading. This flexible modeling leads the author to approach the solution in an innovative way: what he proposes is an integrated set of

policies, combining traditional views (fiscal policy – pump priming strategy) and new insights (managed inflation).

Managed inflation seems to be the most interesting idea proposed by the author. Krugman totally inverts the credibility objective of the central bank, which must be able to persuade investors of its irresponsibility, by committing to high prices and low interest rates even when the economy would start recovering. As he showed in the extended IS-LM model, any temporary monetary expansion would not achieve its goal, since investors think that, sooner or later, the central bank will revert to its price stability objective. Thus, it becomes of basic importance to convince them that this inflationary policy will be long-lasting. The point is that, as it is no more possible to achieve a monetary expansion through a lower interest rate (exactly because it reached zero, or it is very close to it), it will be necessary to go through a higher expected inflation – the other way to lower real interest rate. The possible implementation suggested in the article is to give the central bank, through legislation, an inverted version of the usual price stability targets used in other countries: this could be seen by investors as a credible commitment to make prices rise.

A point that Krugman does not challenge is that, however, it is difficult to make investors believe that the central bank will *never* be willing to revert to a stable pricing objective. This difficulty could dampen by much the expectation of permanency of the expansionary policy. Nonetheless, an increase in the expected duration of this policy, even if not infinite, can help Japan to jump out from the liquidity trap.

Cons of the paper and possible critique

The critique that can be moved to the paper is threefold: the existence of the liquidity trap, the role of fiscal policy and the possibility to implement a credible inflationary policy (managed inflation).

Concerning the first point, since mid-1991 the Bank of Japan began a highly expansionary monetary policy as a remedy to the economic stagnation after the collapse of the speculative asset price bubble in 1990. In the IS-LM framework, the aim was to lower the nominal interest rate in order to stimulate investments and consumption, boosting economic growth. Even if the monetary base was effectively increased, this measure did not bring the desired result. Krugman explained the unresponsiveness of the economy to expansionary monetary policy as evidence of the existence of the liquidity trap, as illustrated before. However, there is no consensus about Japan's liquidity trap, and in general that a liquidity trap may occur. In fact, several contributions can be found in the literature and in the press, both in favor of Krugman's point of view (Svensson, 2006) and against it (Motonishi and Yoshikawa, 1999; Weberpals, 1997).

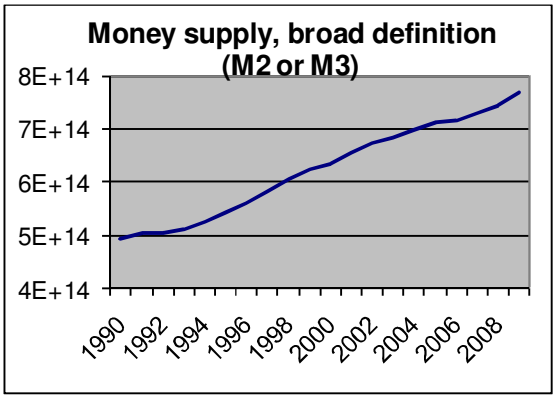
The main alternative explanation for the ineffectiveness of monetary policy to stimulate the economy is the "credit crunch" view. This explanation focuses on the contraction of the supply of bank credit. The reason behind it is twofold. The first focuses on the decline in bank capital, due to the accumulation of bad loans held by Japanese banks after the speculative bubble. Because of banks' suffering conditions, they found difficulties in raising capital on domestic and international financial markets. The second part of the credit crunch explanation focuses on the new cautious lending attitude of Japanese banks following the collapse of the speculative bubble: this made firms less desirable potential borrowers than they used to be, from the banks' point of view. A credit

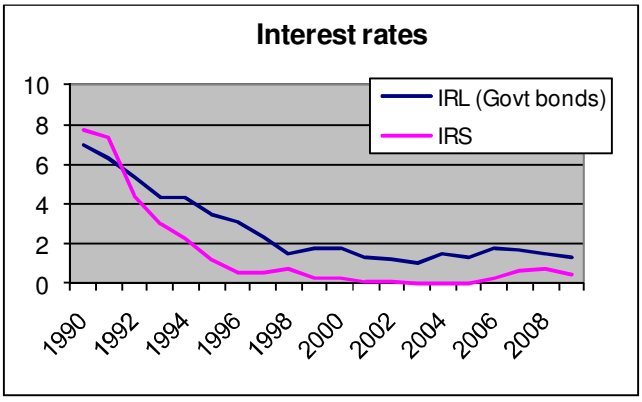
crunch implies that injections of liquidity (base and narrow money expansion) do not increase credit and aggregate lending.

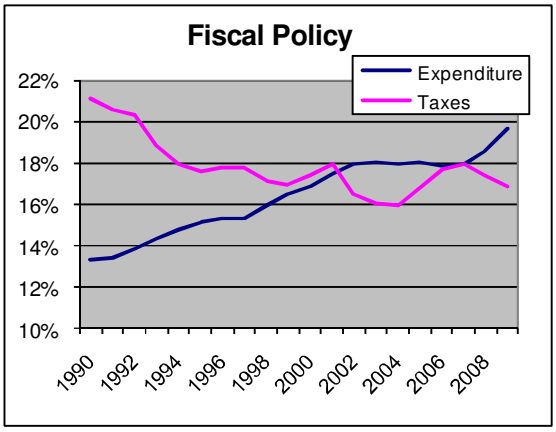
Conversely, Krugman dismisses the credit crunch argument, arguing that banks with a large portfolio of nonperforming loans should take on excessive risk (moral hazard). Excessive lending, rather than a credit contraction, would be predicted, as banks gamble on high-risk projects, hoping to restore solvency before they are forced into bankruptcy by the financial authorities.

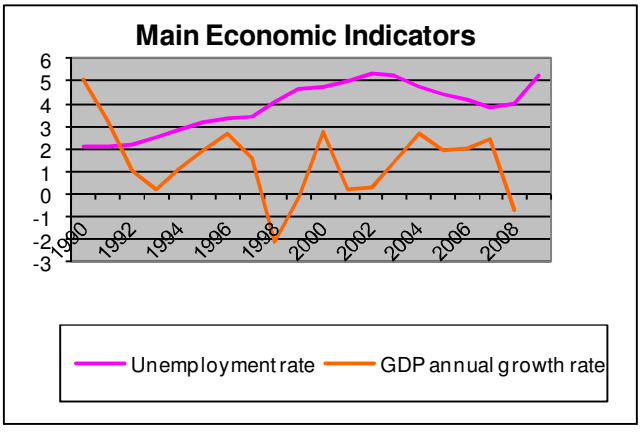
The balance of evidence seems to support the credit crunch explanation of why monetary policy has not been effective in stimulating the Japanese economy. Both liquidity trap and credit crunch are consistent with low interest rates, slow broad money growth and falling commercial loans. Moreover, after the collapse of the speculative asset bubble, the overall negative publicity about the Japanese financial system and economy clearly contributed to a very pessimistic atmosphere in Japan in the late 1990s, depressing domestic and foreign expectations about Japan's growth.

To address the banking and credit crunch problems, public funds totaling 60 trillion yen (12% of GDP) were finally set aside in 1998-1999 to recapitalize banks. The analysis here suggests that bank recapitalization should ease the credit crunch and, if the BOJ keeps interest rates low, economic growth will soon follow. This view seems to be consistent with Japan's policy in those and following years. BoJ maintained low interest rates and used fiscal policy to stimulate demand and restructure the banking system, showing how the problem perceived was the credit crunch.

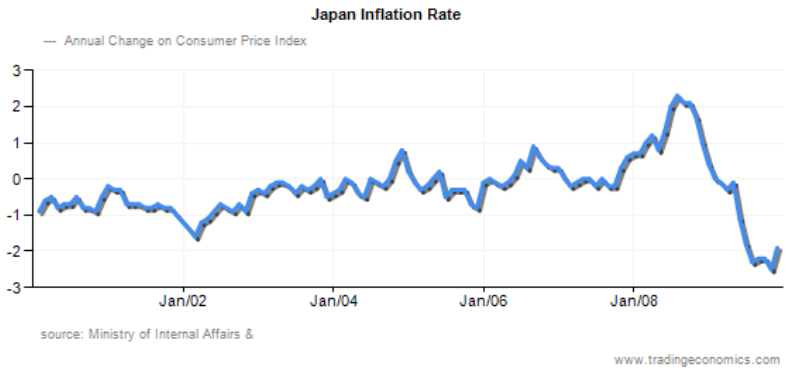








Source: our elaboration on OECD.stat, *Economic Outlook – December 2009 – Annual Projections for OECD countries.*



Moving to the second weak point of the paper, Krugman's analysis does not specify a role of the fiscal policy. He states that it should have an impact, without further clarifications about it. Moreover, fiscal policy could be inefficient in a situation close to the Ricardian equivalence, like Japan's one, with a high propensity to savings. The low propensity to consume makes the Keynesian multiplier close to 1. In this case, an expansionary fiscal policy, to be effective, should be permanent and very high, with large damage to public finances.

As mentioned above, in a liquidity trap situation the nominal interest rate is low but not the real one; to exit the liquidity trap the solution is to reduce the real interest rate. But how could it be done? The policy advocated by the author was to raise expectations about future price level: this solution, as noted by Krugman (1998) and Svensson (2006), encountered a practical problem: the credibility problem. In specific, a central bank that has built a reputation for consistent low inflation policy and is notoriously averse to any numerical target, such as the Bank of Japan, finds it really difficult to convince the private sector that it suddenly wants the price level to increase substantially and permanently. In addition, what makes the solution especially difficult to implement in practice is that there is not a mechanism for the central bank to commit to a permanent increase in money supply. The same credibility problem is faced when the central bank wants to fix an inflation target.

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