The Curious Case of the Liquidity Trap

James R. Rhodes

National Graduate Institute for Policy Studies(GRIPS) / Professor

I | Introduction

There is a specter haunting the capitalist world. All the powers of the old and new worlds have once again entered into holy alliance to exorcise the specter. No, it is no longer the specter of Communism. Paul Krugman's (1998) wakeup call--"It's baaack!"--has led to a revival of interest in another old specter: the liquidity trap. In both its old and new forms, the liquidity trap is a situation where key interest rates reach an irreducible low and neither deflation nor conventional monetary policy is able to dislodge an economy stuck in involuntary unemployment equilibrium. The Great Depression of the 1930s is often given as the classical example of a liquidity trap. The long Japanese stagnation of the 1990s and beyond has rekindled interest in the concept. More recently, the Global Financial Crisis commencing in 2007 prompted fears that a liquidity trap would ultimately limit the effectiveness of conventional monetary policy.

To economists educated in the 1970s and 1980s the recent emphasis on the liquidity trap is peculiar. For years, the liquidity trap was dismissed as a theoretical curiosity. It was considered a discredited concept whose main function was testing understanding of popular models and in separating out the A from the B students in courses in intermediate macroeconomics. As memories of the Great Depression faded and as a long period of sustained growth and moderate business cycles ensued, liquidity pathologies were no longer a topic of serious discussion. Macroeconomists and monetary economists were eager to take credit for the Great Moderation (1987-2007). The business cycle, it was widely claimed, had been tamed by

modern science. Romer (2000) argued that the money market need no longer be explicitly modeled since it could be subsumed in the policy rule describing near-optimal central bank behavior.

Who originated the phrase "liquidity trap"? I could not find the phrase in Keynes (1936) although he is usually given credit for both the concept and phrase. The phrase was not used by Hicks (1937), Pigou (1943), Modigliani (1944), and Hansen (1953) although they popularized the concept. Tobin (1947, p. 128) used the phrase "Keynesian impasse" for the traditional interpretation of liquidity trap. The earliest reference I could find to "liquidity trap" is in *Essays in Monetary Economics* by D. H. Robertson (1940). Whoever might be the author, "liquidity trap" was in common use among monetary specialists by the mid-1960s.

In what follows, I compare and contrast the traditional and modern views of the liquidity trap. I highlight differences and problems. I briefly introduce an alternative theory of absolute liquidity preference which I call the liquidity sump theory.

II | The Traditional Interpretation

1: The Theory

In the General Theory, Keynes (1936) highlighted a situation where "liquidity-preference becomes absolute" (p. 191 and elsewhere). What Keynes meant by absolute liquidity preference is, like other aspects of the General Theory, subject to interpretation. Hicks (1937, p. 155), without naming it, gave the liquidity trap a prominent role in his interpretation of Keynes's "Economics of Depression." The tra-

ditional interpretation of the liquidity trap emerges as a special case of Hick's IS-LM model. It is this interpretation of the liquidity trap that prevailed until the early 1990s.

Consider a simplified version of the IS-LM model with three markets: money, goods, and financial claims (bonds in the Hicks model). This model, like the original, has only one interest rate (i). The market for bonds is suppressed by appeal to Walras's Law. Equation (1) is the equilibrium condition for the money market:

$$L(\overset{+}{y}, \overset{-}{i}, ...) = m \qquad (1)$$

The demand for liquidity (L) is a positive function of real income (y) and a negative function of the interest rate (i). In equilibrium, the demand for liquidity is equal to the (exogenous) supply of real money balances (m = M/P). Equation (2) is the equilibrium condition for the goods market:

$$E(\overset{+}{y}, \overset{-}{i}, ... ; A) = y \qquad (2)$$

Desired expenditures (E) are a positive function of income (y) and a negative function of the interest rate (i). Expenditures are also influenced by various exogenous (autonomous) variables (A). In equilibrium, desired expenditures are equal to income (y).

Following Hicks (1937), the slope of the IS curve in the i-y space is commonly assumed to be negative. In the case of the liquidity trap, the relevant equation is the money market equation. The slope of the LM equation is:

$$\frac{di}{dy} = -\frac{L_y}{L_i} \qquad (3)$$

with $L_y > 0$ and $L_i < 0$.

In Hick's interpretation of Keynes, the demand for liquidity (money) becomes highly elastic at a sufficiently low interest rate. When graphed in the interest rate (i) and income (Y) space, the money market equilibrium curve (LM) becomes flat once interest rates reach their lower bound. In the IS-LM model, the liquidity trap results when a small reduction in the interest rate (i) provokes a large increase in the demand for liquidity ($L_i \rightarrow \infty$). In Keynes (1936, p. 207), this situation is thought to occur when the *long-term* nominal interest rate reaches an irreducible floor (i_f). Early Keynesians considered the floor to be a situation where the probability of a decline in the interest rate was nearly zero. With the likelihood of a rate increase, market participants eschew bonds and other financial assets in favor of money.

There has always been a common understanding that the demand for liquidity depends (primarily) on the short-term interest rate whereas investment expenditures depends (primarily) on the long-term interest rate. Likewise, it is commonly acknowledged that monetary policy operates at the short end of the maturity spectrum since the central bank's policy rate (e.g. call rate, bill rate, federal funds rate) is considered a close substitute for short-term financial assets of low risk (e.g. Treasury bills). According to the popular expectations theory of the term structure, the long-term interest rate can be considered a weighted average of expected values of future short-term interest rates. Assuming substitutability between current and future values of the short term interest rate, a fall in the current rate (*ceteris paribus*) will result in an expected decline in future short term rates. The arbitrage process will lead

to a decline in the long-term interest rate. Since monetary policy is assumed to impact short and long term rates in the same direction, the use of a single interest rate in the theoretical model is thought to be a reasonable simplification for many purposes.

Figure 1 is the traditional depiction of a liquidity trap. The economy is stuck in a trap at income level Y_1. Expansionary monetary policy (and/or deflation) is unable to dislodge the economy from the trap. An increase in real money balances will shift the LM curve to the right (LM_1 to LM_2) but the additional real liquidity will simply be held in the form of "idle balances." The foolproof way out of the trap was once thought to be fiscal policy. In this simple model without a government budget constraint and with non-Ricardian market participants an expansionary fiscal policy (represented by an increase in A) will shift the IS curve to the right (IS_1 to IS_2) and lead to an increase in income (Y_1 to Y_2)

The Hicksian interpretation of the liquidity trap was supported by prominent early Keynesians such as Modigliani (1944) and Hansen (1953). Milton Friedman (1972), the most prominent of the monetarists, argued that the liquidity trap was the essential feature (the "special twist") of Keynes's theory. This interpretation of Keynes was disputed by Patinkin (1965) and many subsequent writers. Keynes, it was said, had only raised the case as a theoretical possibility: "But while this limiting case might become practically important in future, I know of no example of it hitherto" (Keynes, 1936, p. 207). As Hansen (1953) and Friedman (1972) point out, however, many other passages in the General Theory seem to assign a prominent role to absolute liquidity preference in

depression conditions. Keynes, it seems, was hedging his bets and covering all bases. He was proposing, after all, a general theory.

2: Criticism of the Conventional View

The conventional interpretation of the liquidity trap has been criticized on both theoretical and empirical grounds. Early theoretical criticism included that of Haberler (1937) and Pigou (1943), both of whom argued that a deflation-induced rise in real money balances would increase real expenditures (a rightward shift in the IS curve) and promote recovery. This is the well-known "real balance effect" or "Pigou effect." It is often generalized to include other forms of financial wealth such as government bonds. While wealth effects continue to be studied and debated, the general consensus is that they are a weak stabilization mechanism. The reason, perhaps, is a long-standing Keynesian one. Deep economic contractions are generally associated with large drops in the value of financial assets and net worth. Savings tends to increase during severe downturns as market participants attempt to rebuild balance sheets.

Monetarists such as Friedman (1956) and Brunner and Meltzer (1968) argue that monetary policy works through many channels. Monetarists have long argued that the demand for money is a function of many variables including the returns on numerous types of financial and tangible assets, both domestic and foreign. In the monetarist view a change in the money supply affects the real economy by altering balance sheets and relative rates of return. Liquidity demand is never absolute. If the return on short-term Treasury bills hits the ze-

ro bound, then money will spill over into other assets with positive returns. It is highly unlikely that monetary policy could ever lose its potency since there will always be assets with a non-zero return. If necessary, the central bank can purchase unconventional assets such as commercial paper, corporate bonds, and foreign currencies. An expansionary monetary policy will inevitably lead to recovery as asset and good prices rise and the currency depreciates.

Prominent neo-Keynesians such as Patinkin (1965) were also skeptical about the viability of a liquidity trap. It was, however, the failure to find strong empirical support for the traditional view that ultimately sealed its fate. Laidler (1985, p. 129-30), one of the leading specialists on liquidity demand, summarized the state of the evidence on the traditional view:

Thus, the evidence on the liquidity trap is not quite clearcut. On the whole, the evidence goes against the hypothesis, but the results of Kostas, Khouja, Eisner, and Sptizer are, on the face of things, in its favor. These results, however, all depend on the use of a long interest rate. There is no sign of a trap when short rates are used, and this suggests that these workers may be dealing with a phenomenon associated with the term structure of interest rates rather than the demand for money.

As financial markets deepened, broadened, and became more liquid; as memories of the Great Depression faded; and as the era of the Great Moderation progressed; the possibility of a Hicksian-style liquidity trap seemed increasingly remote. But no sooner had the liquidity trap joined the ranks of other historical curiosities such as Say's Law, an anguished cry went up from Japan: "It's baaack!"

1: Modern Theory

The modern view of the liquidity trap makes several key departures from the traditional theory. The modern view associates the liquidity trap with the zero bound on short-term nominal interest rates. Nominal interest rates cannot fall below zero since no rational individual would want to hold bonds yielding a negative return when they could hold money as an alternative store of value. Most writers in the modern tradition take it for granted that the primary operating instrument for central banks is a policy rate of very short-term duration such as the overnight call rate in Japan or the federal funds rate in the United States. Consistent with a long Keynesian tradition, monetary policy is believed to work indirectly through the interest rate channel. A reduction in the policy rate leads to reductions in short-term interest rates and, through intertemporal substitution effects, changes in long-term rates.

The traditional interpretation is based on Keynes's assumption of absolute liquidity preference. Without much fanfare, the modern view, either explicitly or implicitly, takes a radically different approach. The new theory assumes that individual preferences for liquidity may be satiated in some fashion. Krugman (1998) associated the trap with "excess cash holdings." Eggertsson and Woodford (2003) interpret liquidity satiation as a situation where money demand is less than money supply. The money market equilibrium condition (1) must be replaced by a pair of inequalities (4) and (5):

$$L(y_t, i_t \ldots) \leq m_t \tag{4}$$

$$i_t \geq 0 \tag{5}$$

The modern liquidity trap is commonly embedded in some version of a dynamic stochastic general equilibrium (DSGE) model. This type of model allows for the possibility of complex intertemporal effects. Typically, the model involves many equations and unknowns. A key equation in the model is a dynamic aggregate demand equation derived from optimizing behavior of a representative household. A dynamic aggregate demand equation for an open economy may be represented:

$$y_t = E_t y_{t+1} - \beta_1(i_t - E_t \pi_{t+1} - r) - \beta_2(q_v - q) + R \tag{6}$$

In this equation, output (y) is measured as a deviation from its natural rate, i is the short-term nominal interest rate, π is the rate of inflation, q is the real exchange rate, E is the expectation operator, R is a vector of exogenous variables, and r and q are the natural real interest rate and natural real exchange rate, respectively. The (log) real exchange rate is defined: $q \equiv e + (p - p^*)$ where e is the (log) nominal exchange rate (in units of foreign currency per unit of domestic currency), p is the (log) domestic price level, and p^* is the (log) foreign price level.

For monetary policy to increase real output (y) it must lower the real interest rate and/or lower the real exchange rate (i.e. real currency depreciation). This is standard theory. The problem of a liquidity trap emerges when the nominal interest rate reaches the lower bound with output short of its natural level (y < 0). Restoring the natural rate of output may require a negative real interest rate, but, with a negative output gap, there will be a tendency

for deflation and a positive real rate. Monetary policy cannot work through the conventional interest rate channel since the nominal interest rate is at the zero bound. To break out of the liquidity trap, monetary policy must engineer an increase in expected inflation and/or a real currency depreciation. The debate in the modern literature concerns if and how this can be done through monetary policy.

To gain insight into how monetary policy might circumvent a liquidity trap, we can rewrite the aggregate demand equation under the assumption that it maintains the same form in all future periods. Forwarding equation (6) results in

$$y_t = E_t y_{T+1} - \beta_1 \sum_{s=t}^{T} E_t(i_s - \pi_{s+1} - r)$$
$$- \beta_2 \sum_{v=t}^{T} E_t(q_v - q) + T \cdot R \qquad (7)$$

This equation makes clear that current aggregate demand depends not only on current values of the interest rate, inflation rate, and real exchange rate, but on all the expected *future* values of these variables. With short term interest rates at the lower bound, a successful monetary policy must influence expectations of future real interest rates and/or future real exchange rates. According to the expectations theory of the term structure, the long-term interest rate, upon which expenditure decisions depend, will decline if expected short term rates are reduced.

How can monetary policy spring the trap? From equation (7) it is clear that monetary policy can only work if it influences expectations concerning the time path of relevant variables. With the short-term interest rate at zero, the short-term real interest rate could be reduced if an expansionary monetary policy succeeded in increasing inflationary expectations. Holding the expected values of all relevant future variables constant, lowering the contemporaneous real rate is tantamount to lowering the long-term real rate on which expenditures depend. We owe to Krugman (1998) the insight that such a policy may lack the credibility necessary to succeed. Suppose, for example, the central bank has a well-deserved reputation as an inflation hawk. In this case, market participants might rationally expect the central bank to switch to a tight monetary policy once inflation appears. Consequently, real short term rates in the future would be expected to rise. Hence, a monetary expansion that was perceived to be transitory might have little or no effect on the long term real interest rate. According to Krugman (1998, p. 166) "a liquidity trap is always the product of a credibility problem: the public believes that current monetary expansion will not be sustained." To spring the trap, the monetary authorities must "credibly commit to be irresponsible" (Krugman, 1998, p. 161). Krugman has proposed an inflation target as a means of achieving the necessarily credibility. A related suggestion is a price level target.

Rather than targeting inflation, the monetary authorities might commit to suppressing the future short-term interest rate into or well beyond the recovery phase. Eggertsson (2008) and Eggertsson and Woodford (2003, 2004) have proposed keeping short-term interest rates low for an extended period of time. According to Eggertsson (2008, p. 155) to be effective "expansionary monetary policy must change the public's expectations about future interest rates at the point in time when the zero bound will

no longer be binding." "Thus," he continues, "successful monetary easing in a liquidity trap involves committing to maintaining lower future nominal interest rates for any given price level in the future once deflationary pressures have subsided."

Svensson (2001) and others propose evading the liquidity trap through a real depreciation of the currency. The central bank would commit to sustaining the rate of monetary expansion beyond the point at which a real depreciation was achieved. The real depreciation could be obtained by a combination of nominal depreciation and increases in expected inflation (or fall in short-term interest rates). The fact that the central bank has an endless supply of domestic money adds to the credibility of such a policy.

2: Criticism of the Modern View

There is surprisingly little criticism of the modern view of liquidity traps in the academic literature on monetary policy. It is generally believed —based largely on the Japan experience of the 1990s—that liquidity traps are a distinct possibility once short-term interest rates reach the zero bound. Bernanke et.al. (2004), for example, accept the new liquidity trap theory with only minor qualifications. The modern debate centers on preventions and cures. The monetary policy of the Fed and many other central banks is now based on the modern understanding of how liquidity traps materialize and how they can be circumvented. One commonly expressed view [Svennson (2001), Eggertsson and Woodford (2003), Bernanke and Reinhart (2004)] is that modern monetary theory is up to the tasks of diagnosing, preventing, and curing liquidity traps. If

an economy fails to break out of a liquidity trap, than central bankers or their political masters must have failed to heed the advice of the academic specialists.

The modern view associates liquidity traps with liquidity satiation and the zero bound on short-term interest rates. This is very different than the original concept of Keynes (1936, 1937). In the original Keynesian concept, liquidity preference becomes absolute when long-term interest rates reach an irreducible level short of the zero bound. Why would long-term rates fall to this level? The answer is somewhat hazy in the *General Theory*. To Keynes (1936, p. 218), however, the speculative motive for holding money was associated with fundamental uncertainty about the future: "For the same circumstances which lead to pessimistic views about future yields are apt to increase the propensity to hoard." In times of great uncertainty, market participants take flight from risky tangible investments and seek comfort in *relatively* safe and liquid assets of all maturities. It is this flight from the future that leads to absolute liquidity preference.

The speculative motive for holding money was emphasized by Keynes (1936, 1937), but it has long since fallen out of favor with mainstream economists. The argument is that modern finance offers many better financial instruments than money as a store of value. This would seem to be true in "normal" times, but Keynes was not thinking of normal situations. When the future is very uncertain, market participants want to hold money and other liquid assets as a hedge against future unknowns. It is a useful speculative tool when the risk of asset price declines is high and/or when ongoing goods deflation cannot be

ruled out. Furthermore, the liquidity properties of alternative financial products may take on added attractiveness in uncertain times. Short-term treasury bills, for example, may be more prized for their liquidity properties than their yield. In deflationary situations, bonds of low default risk and high liquidity will be favored over tangible assets with highly uncertain returns. In short, absolute liquidity preference may not be so implausible under a broad definition of liquidity.

Modern proposals for remedying liquidity traps are not without problems. Policy success, we are told, depends on the ability of policy makers to manage expectations of future short-term real interest rates and future real exchange rates. In addition to highly refined mathematical and econometric skills, the modern central banker must be an expert in human psychology. Given the unpredictable nature, size and duration or the random shocks that beset the economy, how is a central banker to gain credibility for the various proposals for dealing with liquidity traps? In the face of multi-dimensional shocks, why would a long-term commitment to any type of rigid target be credible? A Krugman-style inflation target, for example, is only credible if the central bank has the ability and will to deliver sustained inflation. A similar credibility problem exists with respect to other proposals. What is to prevent a Svensson-type exchange rate policy from leading to currency wars? Real devaluations can only work if trading partners do not retaliate by monetary expansion of their own. It would seem that we must add to the foregoing list of central banker requirements a profound knowledge of international relations and politics. Well, if this is the case, then we are getting closer to what

Keynes believed was the knowledge requirement of sophisticated economists. Somewhere Keynes asserted that economists, unlike mathematicians, can only acquire a deep understanding of their trade after many years of practical experience and broad-based historical, psychological, and philosophical studies.

Modern dynamic models are predicated on the assumption that economies are subject to stochastic disturbances to an otherwise stable set of fundamental relationships. There are no black swans in the mainstream pond. This is a dramatic contrast with the view of Keynes (1937, pp. 184-85): "knowledge of the future is fluctuating, vague, and uncertain..." By uncertainty, Keynes (1937, p. 214) meant a situation where "there is no scientific basis on which to form any calculable probability whatever." This is the uncertainty of Frank Knight (1921), not the random uncertainty assumed by the modern disciples of the liquidity trap in their dynamic stochastic general equilibrium models. This modern school is subject to the same criticism as Keynes (1937, p. 215) leveled against the classics: "All these pretty, polite techniques, made for a well-paneled Board Room and a nicely regulated market, are liable to collapse." In the modern view, the liquidity trap results from a large shock to an otherwise well-regulated system. In Keynes's view, the liquidity trap results from fundamental uncertainty. In conditions of the trap, normal relationships break down and conventional policies that depend on regularities in private sector behavior cannot be relied upon. Isn't this why Keynes and early Keynesians favored fiscal policy in times of profound distress? With private markets in disarray, the government must be the employer of last resort.

Models based on the concept of a representative agent are also curious. How can we describe market behavior in terms of a single representative agent? Market outcomes are the result of an equilibrating process between demanders and suppliers. It takes contrary opinions to make a market. Demanders must place a higher value on goods than suppliers or no voluntary transaction can take place. A policy-induced decline in the expected real interest rate would increase desired expenditures by demanders of loanable funds, but why would this lead to an increase in the quantity of loans? Presumably, a decrease in the real interest rate would reduce the supply of loanable funds by private actors. Expected future inflation, other things the same, will increase the demand for current goods and services. Why would it increase the supply? Other things the same, suppliers will have an incentive to postpone production if prices are assumed to be higher in the future. An actual depreciation of the domestic exchange rate might increase the current demand for net exports. Why would it increase the current supply? These are embarrassing questions for macroeconomists of all persuasions. There are answers to such questions, but they require markets with multiple agents and, usually, costly and asymmetric distribution of information.

IV | Fear, Uncertainty, and the Liquidity Sump

Both the conventional and modern views of the liquidity trap seem inadequate to address the problems associated with major economic contractions such as Japan's Great Stagnation and the Global Financial Crisis. Three problems, in particular, stand out. The first problem is the tremendous loss of financial wealth that preceded the decline in the growth rate of real output. The second problem is a dramatic increase in holdings of liquid and safe assets by individuals, banks, and other businesses. The third problem is the ineffectiveness of both monetary and fiscal policies in dealing with the collapse of GDP growth. These problems, I believe, are related.

My explanation for these phenomena is called the theory of the liquidity sump. This theory is similar to the conventional liquidity trap theory in that it is characterized by a Keynesian-type situation in which liquidity preference becomes absolute. It differs from both the conventional and modern theories of the trap, however, in that the increase in the demand for liquidity is related to the collapse in the demand for tangible assets. It borrows from Keynes (1937) the notion that the increase in hoarding is directly related to the decline in value of tangible assets. The liquidity sump results from the implosion of asset prices. The sump may occur as a result of a financial panic, the bursting of an asset "bubble," or profound pessimism about the future (e.g. "animal spirits").

In a liquidity sump, an excess supply of capital is matched by an excess demand for liquidity. The excess supply of capital results in falling asset prices. The excess demand for liquidity results in a rise in the value of money. This increase in the value of money may take one or more of three forms: goods deflation, currency appreciation, and a rise in interest rates. In uncertain times, interest rates on tangible assets must rise to induce market participants to forgo the safety of liquid assets.

As Keynes (1937, p. 216) pointed out, "The rate of interest obviously measures—just as the books on arithmetic say it does—the premium which has to be offered to induce people to hold their wealth in some form other than hoarded money." In the sump, real interest rates (yields) on tangible assets rise relative to those on more liquid financial assets.

The view of the future inherent in the liquidity sump is radically different than the view associated with modern theories of the liquidity trap. Liquidity sump theory endorses the view of Keynes (1937, p. 222): "The hypothesis of a calculable future leads to a wrong interpretation of the principles of behavior which the need for action compels us to adopt, and to an underestimation of the concealed factors of utter doubt, precariousness, hope and fear." It is the utter doubt, precariousness, and fear that cause the implosion of tangible asset prices and the rush to the security of liquid assets.

The implosion of wealth creates a large sump that market participants will eventually want to fill in with tangible assets. Rebuilding wealth requires saving out of current income. In response to the severe wealth contraction, market participants (households and firms) will want to tighten their belts and reduce expenditures to a level that meets their basic requirements while allowing for the rebuilding of balance sheets to the optimal level. The level of income consistent with the basic expenditure level may be called "basic income" (y_b). Income above the basic level will be saved. In the uncertain conditions of the sump, however, market participants are leery of acquiring more tangible assets. Market participants flee to the safety offered by liquid assets. In a liquidity sump, market participants want to convert income flows in excess of basic income into liquid assets.

How can we model the liquidity sump? Given the uncertain environment that characterizes the liquidity sump it makes no sense to use modern models that presume, in Keynes's terms, "a calculable future." The simple IS-LM is sufficient for our purpose. In the standard IS-LM model, the liquidity sump can be characterized by a large increase in liquidity demand in response to excess income. In a sump, the income elasticity of money demand becomes very large ($Ly \to \infty$) beyond the basic level. The slope of the LM curve (3) becomes highly inelastic in the i-y space.

Figure 2 depicts an economy stuck in a liquidity sump. The equilibrium level happens to be basic income (y_b) which is below the level of potential income (y_p). Both monetary and fiscal policies are ineffective in sump conditions. An expansionary monetary policy shifts the LM curve temporarily to the right (LM_1 to LM_2), but the resulting increase in income increases money demand and shifts the LM curve back to its original position. An expansionary fiscal policy shifts the IS curve to the right (IS_1 to IS_2). The resulting increase in the real interest rate (presumably the rate on long-term loans and tangible investments) results in a crowding out of private expenditures. The economy remains stuck at its original level.

Although next of kin, the liquidity sump is a much more intractable problem than a liquidity trap. In important respects, it seems closer to Keynes's concept of absolute liquidity preference. Since the sump results from fear and uncertainty of the future, the ultimate remedy requires the calming down of market fears and the reduction of uncertainty. It requires, in
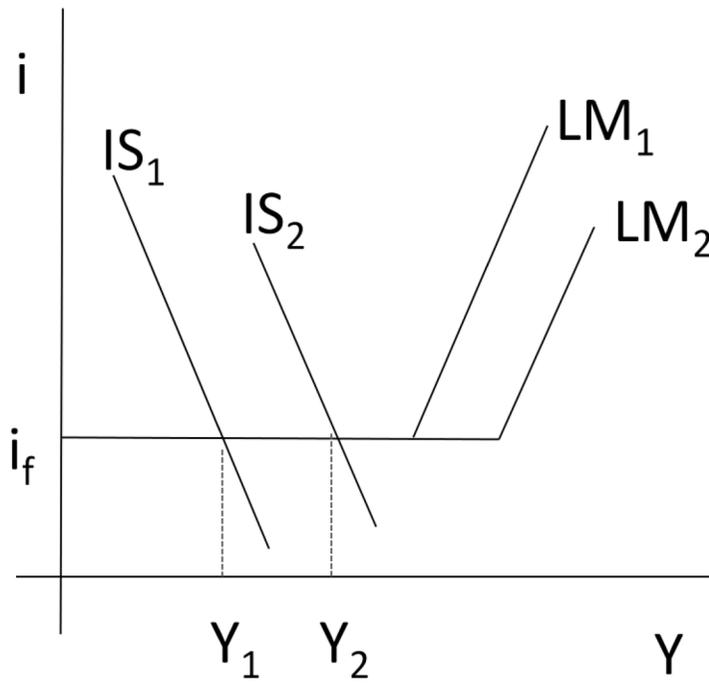
Figure 1: Liquidity Trap
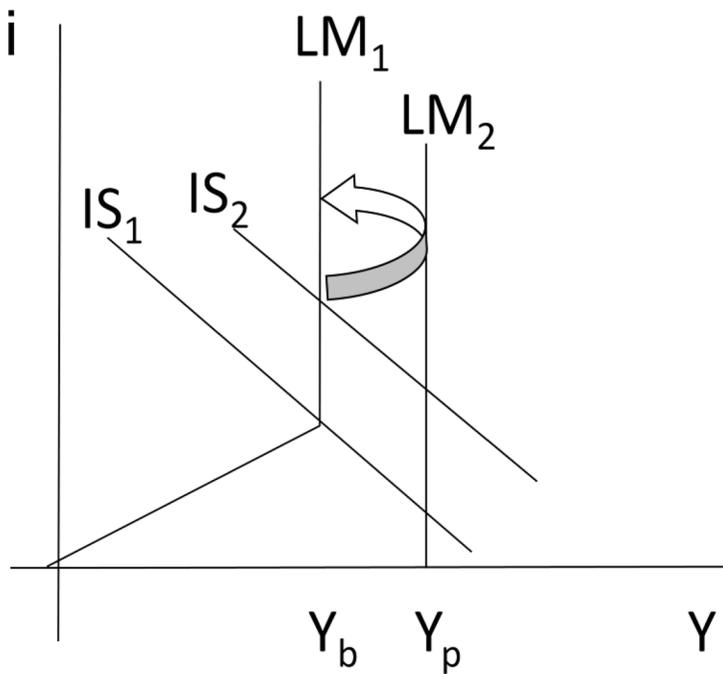
Figure 2: Liquidity Sump

short, a restoration of confidence in the economy's growth potential. Policymakers should focus on how this might be done.

V Conclusion

The specter of the liquidity trap emerges in the wake of serious and protracted economic crises such as the Great Depression of the 1930s, Japan's Great Stagnation of the 1990s, and the post-2007 Global Financial Crisis. The trap is a curious phenomenon in various ways. It is an apparent violation of many cherished principles of the "neoclassical synthesis" whereby short-term Keynesian economics is rationalized with classical principles such as the "classical dichotomy" and the neutrality of money. Why, for example, is a modest deflation bad? A zero interest rate on money, combined with a modest deflation of roughly one percent, has often been associated with the optimum quantity of money (Friedman, 1969). In conventional theory, deflation is the economy's natural recovery mechanism. Not so in the trap. The trap, in both its traditional form and its modern reincarnation, is a serious economic pathology that is resistant to natural market forces or conventional monetary treatments such as open market purchases of Treasury bills.

An economy stuck in a liquidity trap is thought to require unconventional measures to break free. Once in the grip of a liquidity trap, one cannot rely on market forces to bring about a normal economic recovery; that is, recovery within the six months to two years normally associated with the outside lag. What is it that accounts for the trap's persistence? Is there some fatal flaw in market mechanisms or is the market responding rationally to policy blunders and regime uncertainty? In the bizarre conditions that, rightly or wrongly, are associated with the trap, is it reasonable to assume that standard dynamic models continue to apply?

Keynes (1936, 1937) did not use the phrase "liquidity trap." Keynes's concept of "absolute liquidity preference" has some similarities to the liquidity trap of the literature, but it also has important differences. The related concept of a "liquidity sump" makes use of several under-appreciated Keynesian ideas in identifying a pathology that is even more difficult to cure than the various strains of the liquidity trap. There is no foolproof escape from a liquidity sump. Recovery requires the restoration of confidence in the future productive capability of the economy.

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The Curious Case of the Liquidity Trap

James R. Rhodes

The long post-1990 economic stagnation in Japan and the post-2007 global financial crisis have rekindled fears that have lain dormant since the Great Depression of the 1930s. Confidence in macroeconomic theory and management has been badly shaken. With interest rates at or near zero, the ability of conventional monetary policy to influence the real economy is increasingly being questioned. In desperation, central banks around the world have resorted to unconventional monetary policies such as open market purchases of private financial assets. The culprit widely thought to be behind these difficulties is an old and once discredited concept called the liquidity trap. In the conventional interpretation, the liquidity trap occurs when the long-term interest rate reaches an irreducible minimum and market participants eschew interest-sensitive assets for highly liquid financial assets. Since the demand for liquidity becomes extremely large, increases in the real supply of money are simply held and do not enter the spending stream. In contrast, the modern view associates the liquidity trap with a situation where the short-term nominal interest rate is zero and the long-term real interest rate consistent with full employment is negative. At the "zero bound," money and short-term assets become near-perfect substitutes and the demand for money is indeterminate. Increases in the real supply of money are held as liquid assets and not spent.

This paper compares and contrasts the old and new versions of the liquidity trap as well as their differences with the original concept of Keynes (1936). Finding shortcomings in both interpretations, a new theory is proposed. Following Keynes (1936, 1937), the liquidity sump theory argues that fundamental uncertainty concerning future income streams results in a flight from tangible assets to highly liquid and safe financial assets. A decline in tangible asset demand is matched by an increase in the demand for liquid assets. Both monetary and fiscal policy is ineffectual in a liquidity sump. Any policy-induced increase in income is absorbed by an offsetting rise in liquidity demand. In the liquidity sump, there is no free lunch for macroeconomic policy makers. Recovery depends on restoring confidence in the future productivity of the economy.