

The Risks of Deflation and the Effectiveness of Monetary Policy in the Euro Area*

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Abstract

There is little risk of deflation and a liquidity trap in the euro area. Inflation and short- and long-term inflation expectations are relatively close to 2% per year. With the current short nominal interest rate at 2%, there is ample room for more expansionary monetary policy if needed, and there is no reason to doubt the effectiveness of standard monetary policy in the euro area. Although temporary deflation in Germany cannot be excluded, there is no risk for prolonged deflation in Germany, since with a common currency German competitiveness would improve and stimulate exporting and import-competing sectors in Germany. In the very unlikely event of a liquidity trap in the euro area, in which case the effectiveness of standard monetary policy would be considerably weakened, my proposed Foolproof Way – with (1) a price-level target path, (2) a currency depreciation and a temporary crawling peg, and (3) an exit strategy in the form of a return to a float and normal monetary policy when the price-level target has been reached – can be used as an effective means to escape from the liquidity trap.

1. The risks of deflation in the euro area

Is there a risk for deflation in the euro area? Current annual HICP inflation in the euro area is around 2%. As for future inflation, in August 2003 issue of ECB's *Monthly Bulletin* states (European Central Bank (2003, p. 5)):

[A]nnual HICP inflation rates should ... hover around 2% for the remainder of the year. Beyond the short term, the outlook continues to be favourable. Annual inflation rates are expected to fall in 2004 and remain below 2%.

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An observant reader notes that, with characteristic ambiguity, the ECB does not state *how much* it expects inflation to fall in 2004, and *how far below 2%* it expects inflation to remain. The ECB does state, though, that the outlook continues to be “favourable.” We may probably assume that by “favorable” the ECB means approximately “below but close to 2%,” and that “close to” probably means less than half a percentage point. Assuming that this means a forecast definitely above 1% and probably at least 1.5%, there is a considerable margin for deflation. Rather big and quite unlikely unanticipated negative shocks would then be needed to throw the euro area into deflation.

Furthermore, private-sector expectations of future price developments seem far from the deflation range. The August *Monthly Bulletin* (European Central Bank (2003, Box 3, p. 24–27)) reports indicators of private-sector inflation expectation of about 1.9% for 2003, between 1.4% and 1.7% for 2004, about 1.7% for 2005 and about 1.9% for the longer term. Thus, the private sector does not seem to expect any deflation for the euro area.

The current Eurosystem instrument rate (the minimum bid rate on the main refinancing operations of the Eurosystem) is 2%. With short-term inflation expectations about 2%, this correspond to a short real rate of about 0%. For unchanged inflation expectations, if the instrument rate was lowered to 0%, the short real rate would fall to $-2%$, a substantial negative number and a quite expansionary policy setting. Thus, not only does current inflation forecasts and expectations provide a substantial margin to deflation, the current instrument rate also provides a substantial margin for further stimulus, if needed. Thus, the risks of deflation for the euro area seem very small indeed.

Is there a risk for deflation in Germany? Current HICP inflation in Germany is about 1%, about one percentage point below the euro-area average and the lowest in the euro zone. (The highest current inflation in any member country is about 4.5%, in Ireland.) It cannot be excluded that Germany, or any other country in the euro area, will occasionally have deflation. The Eurosystem aims at an inflation “below but close to 2%” for the euro area as a whole. Individual countries will have national inflation rates below and above the euro-area average, in the same way as individual regions within a country will have regional inflation below and above the national average. When average inflation is low, any individual inflation rate entering into that average may occasionally be negative.

With a short nominal interest in Germany equal to the euro-area interest rate of 2% and current inflation about 1%, the German short real interest rate is about 1%, hence a full percentage

point above the euro-area average. With a sluggish German economy and low German inflation, this is likely to be a higher-than-optimal short real rate for Germany. If Germany had its own currency, a floating exchange rate and an independent monetary policy, the Bundesbank would probably lower the nominal rate below 2% to stimulate the German economy and increase its inflation somewhat. It is in the nature of a currency area that monetary policy is aimed at the currency-area average and will, at any given moment, be too tight for some member countries and too loose for some other member countries. Because of this, the sluggish economy and the low inflation in Germany could last longer than if Germany had its own currency.

The real nightmare of deflation is to be caught in a recession and a liquidity trap, that is, when the zero lower bound on nominal interest rates is a binding constraint on monetary policy. With deflation and expectations of deflation, the real interest rate may be too high, even if the nominal interest rate is zero. The high real interest rate may keep the economy in recession for a prolonged period. Furthermore, the recession may lead to increased deflation, the increased deflation will imply a higher real interest rate, the higher real interest rate will increase the recession and bring the economy and prices down in a deflationary spiral.

But there is no risk that Germany alone will be caught in such a deflationary spiral. The reason is that, if Germany would have deflation, the competitiveness of its exporting and import-competing sectors would improve relative to other countries in the euro area. Increased foreign demand for German exports and increased German demand for import-competing goods and services would increase output and employment and bring an end to recession and deflation. Thus, although a common currency may prevent the nationally optimal interest-rate setting and may prolong a national recession, at the same time it protects any member country from a deflationary spiral.

2. The optimal way to escape from a liquidity trap

Suppose the unlikely event would occur and the euro area would face a liquidity trap. That, is a series of negative shocks would cause a recession so deep and reduce inflation or even cause deflation that even a zero nominal interest rate is too high for appropriate stimulus. Given that the Eurosystem cannot reduce the nominal interest rate below zero, what is the best way to escape from the recession and deflation? The real interest rate is the difference between the nominal interest rate and expected inflation. Thus, even if the nominal interest rate is constant at zero, the central bank can affect the real interest rate, if it can affect private-sector inflation

expectations. If the Eurosystem could manipulate private-sector beliefs, it would make the private sector believe in future inflation, the real interest would fall, and the economy would soon emerge from recession and deflation.

The problem is that private-sector beliefs are not easy to affect. If a central bank in a liquidity trap promises high inflation in the future, the private sector may doubt either the ability or the will of the central bank to achieve that future inflation. The central bank may be tempted to cheat, that is, to promise high future inflation to get out of the liquidity trap, but once out renege on the promise and keep inflation low. Indeed, the situation can be described as one of multiple equilibria. If the private sector is pessimistic and expects deflation, the real interest rate will remain high and the recession and deflation will be longer. If the private sector is optimistic and expects deflation to be replaced by inflation, the real interest rate will be lower and the recession and deflation will be shorter.

As discussed in more detail in Svensson (2003a), let us consider the best possible rational-expectations equilibrium in a situation when the private sector believes in the central bank's promise and the central bank lives up to its promise. In the current recession and deflation, output is below potential and inflation is below target. Sometime in the future, the liquidity trap will end, inflation will return close to target, and output will return close to potential. For the bank, it would be better to overshoot the inflation target intentionally in the future, since this would correspond to higher inflation expectations and a lower real interest rate and help the economy out of the current liquidity trap. The loss of higher-than-target future inflation would be compensated by higher output and less deflation in the current liquidity trap.

Thus, the best possible rational-expectations equilibrium is one where the central bank intentionally conducts more expansionary policy and causes a higher inflation in the future so as to shorten the current recession and deflation. This policy also implies keeping the nominal interest rate at zero for some period even after the recession and deflation is over. Rational private-sector expectations of this policy will then lower the real interest rate in the liquidity trap. The basic insight into the nature of this optimal policy is due to Krugman (1998). The precise derivation of the optimal policy in some specific circumstances is presented in Jung, Teranishi and Watanabe (2001) and Eggertsson and Woodford (2003).

As Krugman has emphasized, the problem is that this optimal policy may not be credible. Once the recession and deflation is over, the central bank may renege on its promise of a future expansion and instead keep inflation low and close to its target rate. Indeed, if the private

sector's preferences agree with the bank's, the private sector would also prefer that, once the recession and deflation is over, inflation is held close to its low target rate. But if this outcome is anticipated, private-sector inflation expectations will remain low and the recession and deflation will be longer. The central bank would need to commit itself to the future monetary expansion, and also communicate this commitment to the private sector. But with the normal instrument, the instrument rate, already constant at zero, it is difficult to demonstrate any commitment.

3. A currency depreciation can do it

Even if the nominal interest rate is zero, a depreciation of the currency provides a powerful way to stimulate the economy out of the liquidity trap (for instance, Bernanke (2000), McCallum (2000), Meltzer (2001), and Orphanides and Wieland (2000)). A currency depreciation will stimulate an economy directly by giving a boost to export and import-competing sectors. More importantly, as noted in Svensson (2001, 2003a), a currency depreciation and a peg of the currency rate at a depreciated rate serves as a conspicuous commitment to a higher price level in the future, in line with the optimal way to escape from a liquidity trap discussed above. An exchange-rate peg can induce private-sector expectations of a higher future price level and create the desirable long-term inflation expectations that are a crucial element of the optimal way to escape from the liquidity trap.

In order to understand how manipulation of the exchange rate can affect expectations of the future price level, it is useful to first review the exchange-rate consequences of the optimal policy to escape from a liquidity trap outlined above. That policy involves a commitment to a higher future price level and consequently current expectations of a higher future price level. A higher future price level would imply a correspondingly higher future exchange rate (when the exchange rate is measured as units of domestic currency per unit foreign currency, so a rise in the exchange rate is a depreciation, a fall in the value, of the domestic currency). Thus, current expectations of a higher future price level imply current expectations of a higher future exchange rate. But those expectations of a higher future exchange rate would imply a higher current exchange rate, a current depreciation of the currency. The reason is that, at a zero domestic interest rate, the exchange rate must be expected to fall (that is, the domestic currency must be expected to appreciate) over time approximately at the rate of the foreign interest rate. Only then is the expected nominal rate of return measured in domestic currency on an investment in foreign currency equal to the zero nominal rate of return on an investment in domestic currency; this

equality is an approximate equilibrium condition in the international currency market. That is, the current exchange rate must approximately equal the expected future exchange rate plus the accumulated foreign interest (the product of the foreign interest rate times the time distance between now and the future). But then, at unchanged domestic and foreign interest rates, the current exchange rate will move approximately one to one with the expected future exchange rate. If the expected future exchange rate is higher, so is the current exchange rate. Indeed, the whole expected exchange-rate path shifts up with the expected future exchange rate. Thus, we have clarified that the optimal policy to escape from a liquidity trap, which involves expectations of a higher future price level, would result in an approximately equal current depreciation of the currency.

This has the important consequence that the current exchange rate immediately reveals whether any policy to escape from a liquidity trap has succeeded in creating expectations of a substantial increase in the future price level. If it has, this appears as a substantial current depreciation of the currency. Consequently, if the currency does not depreciate substantially, the policy has failed.

However, the desired initial depreciation of the currency can be achieved directly by the central bank. Indeed, the central bank can directly achieve the desired optimal exchange-rate path associated with the optimal policy to escape from the liquidity trap. The initial depreciation of the currency will then induce private-sector expectations of a future depreciation and, importantly, of a higher future price level, the crucial element in escaping from a liquidity trap. Thus, by a current depreciation of the currency, the central bank can induce private-sector expectations of a higher future price level and in this way make its commitment credible.

Let us take the argument step by step. First, how can the central bank achieve the desired initial depreciation of the currency and implement the desired exchange-rate path? It can do this by announcing a crawling peg: a new high initial exchange rate and the gradual fall over time of the exchange rate at a fixed rate approximately equal to the average foreign interest rate. In particular, the central bank should announce that it will buy and sell unlimited amounts of foreign exchange at the announce exchange rate. If this crawling peg would fail, the domestic currency would appreciate back to the vicinity of the exchange rate before the announcement, making the currency a good investment. Thus, initially, before the peg's credibility has been established, there will be excess demand for the currency. This demand is easily fulfilled, however, since the central bank can print unlimited amounts of its currency and trade it for foreign

exchange.

Remember, it may be difficult and even impossible to defend the peg of a currency under pressure for depreciation, because the central bank must sell off its foreign exchange reserves to support the currency and those reserves eventually run out. In contrast, it is easy to defend a peg of a currency under pressure for appreciation, because this defense calls for the bank to issue more domestic currency and hold greater foreign-exchange reserves, which it can without limit. Thus, the peg can be defended and the peg's credibility will soon be established.

Second, why would the peg induce expectations of a higher future price level? Once the peg is credible, since the expected exchange-rate path has shifted up by the initial depreciation, the private sector must believe that the future exchange rate will be higher. But then internal consistency requires that the private sector must also expect a higher future price level (since they have no reason to believe that the future relative price between domestic and foreign goods will move in any particular direction). Thus, the initial depreciation, the credible peg and internal consistency forces the private sector to expect a higher future price level.

Thus, the initial depreciation and the crawling peg gives the central bank a concrete action by which it can demonstrate its commitment and induce the desired private-sector expectations. Depending on how quickly the peg becomes credible, the central bank may have to buy more or less foreign exchange, thus adding to its foreign exchange reserves. Interestingly, the existence of these reserves gives the central bank an internal balance-sheet incentive to maintain the peg, since abandoning the peg and allowing the currency to depreciate back to its initial level would result in a capital loss for the central bank. Thus, the central bank is actually putting its money where its mouth is, thereby reinforcing the commitment.

A currency depreciation has proven to be an effective tool for fighting deflation in the past. As Bernanke (2002) notes: “A striking example from U.S. history is Franklin Roosevelt’s 40 percent devaluation of the dollar against gold in 1933–34, enforced by a program of gold purchases and domestic money creation. The devaluation and the rapid increase in money supply it permitted ended the U.S. deflation remarkably quickly. Indeed, consumer price inflation in the United States, year on year, went from -10.3 percent in 1932 to -5.1 percent in 1933 to 3.4 percent in 1934.”

4. The Foolproof Way

The previous discussion of the optimal policy and the practical proposals indicate three elements of a successful escape from a liquidity trap: (1) a commitment by the central bank to a higher future price level, preferably (as discussed in more detail in Svensson (2003a)) in the form of a price-level target, including any price-gap that the central bank prefers to undo; (2) a concrete action by the central bank that demonstrates its commitment to the higher future price level, induces corresponding private-sector expectations and reduces the real interest rate; and (3) an exit strategy that specifies when and how to get back to normal (and what that “normal” is). My proposal, the Foolproof Way to escape from a liquidity trap, attempts to combine these three elements (Svensson (2001, 2003a)). Although this proposal was originally directed toward Japan, it applies to any open economy, that has fallen into a liquidity trap, and, should it be necessary in the future, would work well for both the euro area and the United States.

The Foolproof Way consequently consists of announcing and implementing three measures: (1) an upward-sloping price-level target path, starting above the current price level by a price gap to undo; (2) a depreciation and a crawling peg of the currency; and (3) an exit strategy in the form of the abandonment of the peg in favor of inflation or price-level targeting when the price-level target path has been reached.

As discussed above and in more detail in Svensson (2003a), a currency depreciation and a crawling peg is unique in providing the central bank with a concrete action that demonstrates the central bank’s commitment to a higher future price level, establishes credibility for the peg, induces private-sector expectations of a higher future price level, and stimulates the economy by reducing the real interest rate. As argued, via a depreciation and a crawling peg with a rate of appreciation approximately equal to the average foreign interest rate, the central bank can actually implement approximately the optimal way to escape from a liquidity trap and strike the optimal balance between current stimulus of the economy and the future price level. Furthermore, as discussed, the exchange rate is unique in providing a relatively direct measure of the private-sector expectations of the future price level.

Once the Foolproof Way is implemented, the currency depreciation and the lower real interest rate will increase aggregate demand, jump-start the economy, and increase output towards potential. The depreciation, the closing of the output gap and the increased inflation expectations will increase the domestic price level (the GDP deflator). Finally, the consumer price index, as distinct from the GDP deflator, will increase not only from the increased GDP deflator

but also from increased costs of imported final goods because of the currency depreciation. The domestic price level will approach the price-level target path from below. When the price-level target has been reached, according to the exit strategy, the exchange-rate peg is abandoned, and the economy can get back to normal with the central bank adopting some form of inflation or price-level targeting.

There are two final issues to address about currency depreciation as a way to escape from a liquidity trap, like the Foolproof Way. First, a policy that calls for a depreciation relative to the rest of the world can work for the euro area, for Japan, or for the United States, but if all three regions were simultaneously to fall into a liquidity trap, these regions could not all simultaneously depreciate against each other. However, if only one of them is in a liquidity trap, as is currently the case for Japan, it can apply the Foolproof Way and escape the liquidity trap. Having escaped, it then leaves any other region free to apply the Foolproof Way in the future, should that region be so unfortunate as to fall into a liquidity trap.

The second issue is whether escaping a liquidity trap via a currency depreciation has negative consequences for the trading partners of the country. When a country attempts to stimulate its economy by depreciating its currency, this is often called a “competitive devaluation” or a “beggar-thy-neighbor policy,” invoking associations of negative consequences for trading partners.

However, we have already seen that the optimal way to escape from a liquidity trap, which involves expectations of a higher future price level, would directly lead to a corresponding depreciation of the currency. Indeed, absence of a currency depreciation indicates a failure to induce such expectations. The Foolproof Way is just a method to implement approximately the optimal way to escape from the liquidity trap through the back door, by starting with a currency depreciation. Indeed, any expansionary monetary policy that succeeds in increasing expectations of the future price level and lowering the real interest rate will imply a currency depreciation. Thus, opposing a currency depreciation is an argument against any expansionary monetary policy – which seems nonsensical.

Because of the short-run stickiness of the domestic price level, a currency depreciation implies a temporary real currency depreciation, that is, an increase in the price of foreign goods relative to domestically produced goods and services. This is a terms-of-trade improvement for the trading partners and in itself beneficial to them. But one concern is that this will increase the domestic trade balance, the net export from the country and hence decrease the net export

to the country from the trading partners. But the effect on the trade balance involves both a substitution and an income effect, of opposite signs. The substitution effect due to the change in relative prices from a depreciation favors domestic exporters and import competitors and increases the trade surplus (or reduces the trade deficit). But the income effect due to increased output, consumption and investment in the domestic economy implies increased import of raw materials, intermediate inputs and final goods and reduces the trade surplus (or increases the trade deficit). The net effect on the trade balance may therefore be quite small, as indicated by simulations in Coenen and Wieland (2003) and McCallum (2003). Thus, a currency depreciation will involve some sectoral shifts, but it need not involve any beggar-thy-neighbor policy. For Japan, with an economy operating far below potential GDP, the income effect on the trade balance, which is favorable to the trading partners, could actually be quite large. (The international repercussions between large economies from a currency depreciation is further examined in Svensson (2003b).)

Furthermore, and importantly, to the extent that the Foolproof Way has any contractionary effects and reduces output and inflation in the rest of the world, the rest of the world can respond with lower interest rates and monetary expansion. In this way, a desirable world-wide monetary expansion is implicitly coordinated by countries pursuing domestic monetary objectives.

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