Box 3 Deflation

The risk of deflation has come up for some discussion in Iceland. In part this is an echo of international discussion on this issue, but it has also been inspired by the recent low rate of inflation. The CPI rose by only 1½% last year, and excluding its housing and service components the increase was a mere 0.3%. So what is deflation? What is the likelihood of it occurring in the industrialised countries? How can deflation be avoided and what is the most effective response if it occurs? The following is a brief attempt to answer these questions.

The most natural way to define deflation is in the same way as inflation, only in reverse. *Inflation* is defined as *a persistent rise in the general level of prices*. Thus a rise in the price of individual goods or a short-term rise in the price level is not considered to be inflation. Similarly, *deflation* is defined as a persistent decrease in the general level of prices. A decrease in the price level for a couple of months is not considered to be deflation, nor does a general reduction in the price of services is greater, whereby the price level does not rise on average.

In fact it is not uncommon for a rise in the price of services to counterbalance a rise in the price of goods. In September 2002, consumer prices in the USA had risen by 1.5% from the year before. At the same time the price of services went up by 3.2% while the goods in the CPI went down by 0.9%. As a rule, productivity has increased more slowly in service industries than in manufacturing. However, if wages in different sectors rise in tandem due to intersectoral labour mobility, the price of services will inevitably increase by more than that of goods.¹

In the same way that inflation occurs because of excess demand in the economy, deflation is the result of excess supply. Excess supply may form because of a supply shock, but serious deflation is most probable when a sharp contraction in demand creates a slack which causes prices and wages to fall. Such a scenario tends to go hand in hand with stagnation or recession and rising unemployment. Deflation may therefore be either *benign* or *malignant*. *Benign* deflation may be caused by growth in output and productivity or improved terms of trade. Examples are found in Britain and other countries during various periods of the nineteenth century, and even in China in recent years.² Nonetheless, benign deflation is not entirely riskfree, because if external shocks occur under such conditions and call either for a temporary reduction in real wages or negative GDP growth, reluctance to reduce nominal wages and the fact that nominal interest rates can hardly drop below zero could cause unemployment to rise.

Malignant deflation goes hand in hand with stagnation or contraction and underutilised production capacity. This type of deflation may enter into a spiral with inadequate demand. In particular, this occurs if deflation expectations take root and the level of household and corporate debt is high. In that case, real interest rates could become high even if nominal interest rates go down to zero, causing an increase in the debt service burden in real terms because liabilities carry fixed nominal rates of interest. Deflation therefore causes the real debt service burden to rise without any corresponding real appreciation of assets. This may have serious consequences for debtors, as shown in many instances, especially if asset prices fall. One example is the Great Depression of the 1930s when particularly malignant deflation occurred in many parts of the world and was amplified by a financial crisis, economic policy mistakes and protectionism. Other more recent examples of malignant deflation are

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^{1.} Such a situation is not far-fetched. Let us take the example of an economy that comprises two sectors of equal size, goods manufacturing and services. Let us also assume that productivity increases by 3% per year in goods manufacturing but remains unchanged in services. Average productivity would therefore increase by 11/2% per year. Furthermore, let us say that real wages keep pace with the average productivity trend plus 1%, which is reflected in a 1% rise in consumer prices. Nominal wages will therefore go up by 21/2%. Because productivity in services remains unchanged, their price will increase by the same amount as wages. Goods prices, however, will decrease by 1/2% per year. This state is not deemed to be deflation. For simplification's sake, this example ignores imported inputs and use of capital. The findings do not essentially change if these are included, but the figures would be different then and more complex to calculate.



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Because of its negative consequences, it is important to prevent deflation. A monetary policy that aims for price stability or a low rate of inflation can therefore perform this function, by responding to negative demand shocks by monetary easing. There are at least three reasons to aim for a low rate of inflation rather than zero inflation. Firstly, changes in quality and composition of the CPI introduce a positive bias in the index. This bias is generally regarded to lie in the range ¹/₄-1%.³ Observed inflation within this range therefore effectively corresponds to price stability. Another reason is that relative prices and real wages become less elastic at a very low rate of inflation, potentially causing an unnecessary loss of output and unemployment. The third reason is that modest inflation reduces the risk of the economy accidentally slipping into a deflationary spiral. However, moderation is called for in this respect, because inflation is also costly for the economy. This is why it is commonly argued that central banks with inflation targets should target inflation not lower than 1% and not higher than 3%.

What action can be taken if deflation becomes entrenched? Generally speaking the answer is to stimulate demand sufficiently to absorb any slack in the economy. In most cases this should be achievable through monetary policy. However, it may prove difficult if central bank interest rates are already down to

Pain and Weale (2002) cite the example of Britain between 1880 and 1890, when GDP grew on average by 2.2% annually at the same time as prices went down by 0.6% per year.

^{3.} Studies and discussions within the OECD have indicated a higher bias in the USA than in most European countries. CPI bias in Iceland has not been evaluated but it is considered to lie closer to the lower limit, e.g. because the index base is updated relatively frequently.

zero, as is the case in Japan. But the situation is complicated if monetary policy transmission is impaired by problems in the banking system, whereby an increase in base money is not transmitted to broad money aggregates, since banks will not or cannot increase their lending. This may apply in Japan's case.⁴ In theory, a central bank ought to be able to induce inflation, but may need to use unconventional methods for doing so, for example by buying longterm bonds or equities or directly funding treasury spending⁵.

At the moment deflation is largely confined to Japan, Hong Kong and China.⁶ Deflation has not become entrenched in any developed country apart from Japan, nor do forecasts indicate such developments over the medium term. Consumer prices rose by 1.6% between the years in the USA last year and according to *Consensus Forecasts*, inflation will be 2.2% this year.⁷ In Germany, which has been mentioned as a possible deflation risk country, the CPI rose by 1.3% last year and the average forecast for 2003 is 1.2%, but the lowest forecast 0.5%.⁸

What is the situation in Iceland? To begin with, deflation has never occurred before and is extremely unlikely, for example because of the openness of the economy. In the absence of global deflation, it is rather unlikely that persistent deflation will take root in Iceland.

The CPI rose by 1.4% last year and this looks set to be the lowest inflation for the time being. Inflation expectations for the next years are 2% or more, which is in line with the current Central Bank forecast. Wage rises in excess of short-term productivity growth substantially diminish the probability of deflation. Growth in base money is still running in double-digit figures. If the risk of deflation grows, considerable scope still remains for responding to it by easing the monetary stance, since the Central Bank's policy rate stood at 5.8% at the end of January. Later on, the Alcoa project will lift demand significantly. Thus deflation is not a probable task of economic policy in Iceland given the present outlook. It can also be argued that the potential damage that deflation may have on the asset position of debtors is smaller in Iceland than in countries where most liabilities carry fixed nominal interest rates. Price indexation and the widespread use of variable nominal interest rates imply that deflation would not cause the debt service burden on domestic loans to increase as much in real terms. The real debt service burden on indexed loans would remain unchanged, since they imply a fixed real rate of interest, and the same would apply to loans with variable nominal interest rates, to the extent that nominal interest rates decline in tandem with deflation.

References

Consensus Forecasts, January 2003, Consensus Economics Inc.

Pain, Nigel and Martin Weale, (2002), "Commentary", *National Institute Economic Review* No. 182, October 2002.

In 2002 base money in Japan rose by no less than 19.5%. Lending shrank by 4.7%, however, and broad money (M3) increased by only 2.2%.

Bernanke (2002) discusses central banks' options for avoiding and escaping deflation.

Consumer prices also declined in Singapore last year, but it is too early to deem whether deflation is a fact there.

^{7.} Consensus Forecasts, January 2003.

^{8.} ibid.

Bernanke, Ben, (2002), "Deflation: Making Sure 'It' Doesn't Happen Here", www.federalreserve.gov/boarddocs/speech-es/2002/20021121/default.htm