

## **Sense and Nonsense About Deflation**

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(policy brief #12)

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### **Abstract**

There is much talk about the global economy being driven into a deflationary spiral as a consequence of the ongoing financial crisis. There is also a considerable amount of misinformation about what deflation means and its economic implications. This policy brief explores the origins and consequences of deflation with a view to putting into proper perspective the relevant economic issues for an economy that experiences a bout of falling prices. Historical illustrations are also used to distinguish between sense and nonsense concerning the economics of deflation.

### **Introduction**

Until the 1990s, the world was awash in inflation. The control of inflation became a priority in the last decade or so and culminated with the introduction of inflation targeting, a strategy that has served Canada well. Inflation in property prices and stock prices also attract the attention of economists and policy makers. Since the summer of 2008 when oil prices peaked, expectations of inflation were rising, and several central banks raised their policy rates, there was a concern that a return to higher inflation was in the offing. Since mid-September in the same year, however, commodity prices, especially oil, have plummeted and the concern has shifted to the prospect of deflation. Indeed, central banks have been falling all over themselves in reducing policy rates at record speed and in increments heretofore not seen. However, it is not the case that falling prices for certain goods or services or in certain sectors of the economy constitutes deflation just as a relative price rise need not imply inflation. One must always distinguish between relative price changes and aggregate price changes. The former might, at least temporarily, produce a rise or a fall in an overall price index that can subsequently be reversed.

It is worth asking, therefore, in light of current events whether fears of a looming deflation, and the fears these are creating among observers and policy makers, are justified. As we shall see, while there are good reasons to worry about the possibility of a mild but sustained deflation, there are some misunderstandings both about economic conditions in such an environment as well as the circumstances that can produce a protracted decline in the price level.

### **Understanding Deflation**

The study of the economics of deflation, and worries over its consequences, is primarily preoccupied with the phenomenon wherein there is a generalized and persistent decline in the

general level of prices. This is an aspect of the recent discussion over the potential for deflation worldwide that tends to be lost in the debate.

For at least three decades following the end of World War II, the main preoccupation of governments was to exploit the trade-off between inflation and unemployment summarized in the classic Phillips curve, a concept that celebrated its fiftieth anniversary in 2008. When the stagflation of the 1970s and 1980s revealed that policy cannot simply direct the economy to some “optimal” combination of inflation and unemployment, or economic growth, attention turned to policies that would maintain a stable but low inflation rate. This view of the world would dominate policy discussions at the time and continues to be the mantra of good macroeconomic behaviour supported unwaveringly by central bankers, and even by government officials. However, views about inflation have also evolved through time. We are used to thinking that price changes only refer to ones that affect goods and services. As financial wealth grew in importance several observers, notably in the economics profession, began to revisit the role that asset prices should play in assessing inflationary pressures that affect the economy. As a result, policy makers came to the realization that central bank performance need not only be evaluated through the narrow measure of some measure of consumer price inflation but that other indicators of inflation, mainly in asset prices, also warrant the monetary authority’s attention. What remains unclear, even after more than a decade of low and stable inflation, is what numerical value for inflation constitutes price stability or at what threshold does inflation (or deflation) do more harm than good to economic performance. Owing to various disagreements and technical issues surrounding the incorporation of asset price movements into a generalized measure of inflation, we continue to rely on indexes that are based on the evolution of prices of goods and services to evaluate the stance of monetary policy. Indeed, central banks even began to back away from highlighting the behaviour of ‘core’ measures of inflation – typically these strip away volatile food and energy prices – as it has proved difficult over time to identify a predictable or stable link between such measures and movements in a more general price level. Although the precise nature of the debate over how to measure inflation is beyond the scope of this policy brief, an illustration should suffice to illustrate the difficulties in question. Put simply, many asset prices reflect not only the current state of economic conditions but are considered to contain a significant forward-looking component that influences investors’ future consumption and investment decisions. The same is generally not true for the prices of goods and services.

Unfortunately, the 1990s would also usher in a new development on the macroeconomic front. In Japan, one of the post-World War II economic miracles, where relatively low inflation was a fact of life for decades, except briefly when the first oil price shock of the 1970s led to a brief spike in inflation, the economy began to turn for the worse. The subsequent stagnation, fuelled by an explosion in property prices followed by a bursting of the price bubble, eventually led to falling prices even in the broad price indices macroeconomists resort to in their analyses. At first, falling prices seemed like a temporary phenomenon. Indeed, policy makers at the time claimed that productivity improvements, the result of the spread of computing technology, heralded the coming of age of a “new” economy. However, by the end of the 1990s, deflation took hold and even forecasters began to expect prices to go on falling in the near future. Policy makers ceased arguing that productivity improvements could explain falling prices. Instead, in a stunning reversal, government and central bank officials finally admitted that a full-fledged demand-

driven deflation was taking hold. Nevertheless, it bears repeating that the kind of spiralling downward movements in the price level that some analysts now refer to as a possibility today never took hold in Japan. Rarely did forecasts or expectations of inflation fall below -1% per year (Bank of Japan 2001). Moreover, while real economic growth was low by earlier historical standards, it remained on average positive. The deflation in Japan did not lead to an economic collapse, although it is highly unlikely that any economy would want to emulate their example.

As the last decade of the twentieth century ended, deflation began to emerge in other parts of the world, most notably in Asia. Hong Kong, Singapore and China, all began to experience deflation for periods that extended well beyond a year. It is instructive that these developments took hold first in Asia, since many of the economies in the region were linked via fixed exchange rates that provided the conduit through which deflationary shocks could be transmitted. In contrast, today's global financial shock and the resulting fear of deflation is taking place in a world more dominated by floating exchange rates. Some economies, notably Hong Kong and China, continue to steadfastly adhere to fixed exchange rates. However, unlike Japan, China experienced strong economic growth at the same time as deflation continued. Hence, in a counter example to the Japanese experience, China may very well have been the only deflation that was supply-side driven. Since the deflation ended in the early 2000s in China it has become clearer that both the deflation and the more recent inflation in China are monetary policy phenomena (Burdekin and Siklos, 2008, 2008a; Siklos and Yang, 2008).

Perhaps more surprisingly, and worryingly, the early years of the 21st century would see fears that deflation might spread throughout the world as some countries in Europe, most notably Germany, and the United States began to report falling prices extending over several months or quarters. Indeed, the seeds of the current financial crisis might well have been planted by the Federal Reserve's decision to lower the fed funds rate to 1% in 2003 and keep it there for what, in retrospect, looks like an excessively long time.

Paralleling these developments was the spread of inflation targeting throughout the industrial world. Most notable, however, was the exclusion of deflation from tolerance ranges for inflation, though the fledgling European Central Bank (ECB) was accused, at least until the summer of 2003, of not explicitly excluding the possibility that deflation might be permitted to take hold for a time. As low inflation rates persisted throughout the industrial world, especially during the late 1990s, and the prospect of weakening economic activity apparently contributed to lowering the inflation rate still further, central bankers in inflation-targeting countries especially began to insist that deflation would be prevented at all costs. One can well understand the worries over negative inflation rates as a brief survey of price developments, particularly in the second half of the 1990s, shows that negative inflation rates were more likely to take place, albeit temporarily, in countries with formal inflation targets than in industrial countries that did not explicitly target inflation.

### **Good and Bad Deflations**

Given that macroeconomic analysis since the 1950s at least was almost exclusively geared to the problems and consequences of inflation, some analysts began to wonder whether the solutions and economic outcomes in an environment of deflation would simply be the mirror image of

those under an inflationary regime. It was not long before some began to argue that deflation ought almost exclusively be associated with “bad” economic outcomes and needs to be avoided at all costs. Two reasons explain this opinion. First, the decade-long economic stagnation in Japan, occurring simultaneously with deflation, suggests a negative link between falling prices and economic performance. That deflation was fuelled by the bursting of a real estate price bubble together with poor policy making choices and a weak banking system. Second, the last major occurrence of deflation took place on a worldwide scale during the Great Depression of the 1930s. In this episode, a stock market crash and an inappropriate monetary policy made a bad situation even worse. Hence, it is argued, deflation is inexorably linked to disastrous economic performance. Note that one common thread in the foregoing arguments is the poor choice of policies. It is also usually forgotten that countries with floating exchange rates at the time escaped much of the devastating economic shock that afflicted the United States and many other countries around the world (Choudhri and Kochin 1980).

Many observers, academic and policy makers alike, did not always view deflation in a negative light prior to the Great Depression of the 1930s. The reason is simply that a metallic standard, such as the Gold Standard, ought to prevent rising prices from taking a permanent hold. By fixing the amount of money in circulation relative to the supply of monetary gold, a growing economy and the consequent rising demand for money could only be accommodated if the price level fell. Hence, under certain conditions, the price level would display no particular tendency to either rise or fall over long periods of time in a Gold Standard regime. Likewise periods of rising prices were fuelled, for example, by gold discoveries. Hence, deflation was often treated as a necessary evil to offset the effects of an earlier inflation. The fact that inflation and deflation might affect groups in society differently was not a matter for macroeconomic policy making.

A more careful study of deflation reveals that there have also been frequent episodes of “good” deflations. Putting aside the recent Chinese experience, an example of a quasi-market economy subject to significant government interference, examples of beneficial deflations have typically occurred late in the nineteenth century or early in the twentieth century and tended to take place at a time of rapid technological and productivity improvements in a wide array of industries but most notably at the time in agriculture and transportation. (Borio and Filardo 2004)

An understanding of the economics of deflation requires that a distinction be made between those deflations that can largely be explained by changes in aggregate supply which drive price levels down and, hence, can be beneficial, versus the type of deflation that is due primarily to a significant slump in aggregate demand and can be associated with depression.

To the foregoing mix one must add another variable, namely wages. Not explicit in the discussion so far is the presumption that all prices are reasonably flexible and this must include wages. Yet, while there is little debate at least in the industrial world concerning the flexibility in most prices for goods and services prior to the 1940s, the post-World War II world is often said to be characterized by downward wage rigidity either due to contractual reasons or because the labour force is in the grips of some form of wage illusion prompted by the belief that lower wages automatically translate into lower real income. The Japanese experience puts paid to this view. Nevertheless, it is clear that wages rates, in principle, behave rather differently than prices of goods and services. The reason this is potentially important is that, in the presence of

downward wage rigidity, a deflation would make the unemployment consequences of a deflation even worse. As real wages rise, firms let go of increasing numbers of workers unless productivity rises are able to offset the increased wage costs. By contrast, with fully flexible wages, the labour market can clear more readily even in a deflationary situation, though the other problems, primarily of the political and social varieties, associated with a deflation largely remain. Falling wage rates fuel discontent. In the United States in 1896 they almost led to William Jennings Bryan winning the race to the White House thanks to his call to rid the nation of its “cross of gold.”

The political and social consequences of a protracted deflation are understandable and may partly explain why policy makers are determined to avoid at all costs the “collateral damage” created in such an environment. However, readers need to be reminded once again that, just as the Fed’s policies in the early 2000s helped fuel the asset price bubble that burst in 2007, the exploding balance sheet of the US central bank may well sow the seeds of a resurgence of goods and services price inflation not seen since the 1980s. Debts – these are for the most part denominated in nominal terms – may well be inflated away but so will real wages become depressed if labour is unable to command sufficiently high wage settlements. Once again, debtors and creditors, wage earners versus employers will be in conflict with each other with consequences that are hardly likely to be economically, politically or perhaps even socially benign.

### **The Zero Lower Bound and the Limits of Monetary Policy**

Crucial to any study of inflation or deflation is the role played by expectations of inflation. Individuals are viewed by economists to be forward-looking to a degree. Hence, current decisions by households and firms will be partly based on what they believe the future economic environment will look like. Consequently, governments that continuously attempt to exploit the short-run trade-off between inflation and output growth may well end up creating economic conditions that lead to spiralling inflation. Depending on the nature of inflation expectations formation, that is, the extent to which these are formed by simply extrapolating from the past rather than attempting to purely forecast the future, the length of time policy makers can exploit the trade-off can vary considerably. Clearly, the more forward-looking are individuals, and the greater their sophistication at understanding the current policy regime in place, the closer the economy comes to a world where the trade-off no longer effectively exists. By contrast, if expectations are more adaptive in nature then, again depending on their construction, the trade-off will be partly a function of how fast individuals adapt to the current policy regime in place. In the case of deflation the story is much the same, however with some notable differences. First, once expectations of deflation take hold, and policy makers respond by lowering nominal interest rates, there is a lower bound – known as the zero lower bound – below which they cannot go. Moreover, since what matters to individual decision making is the behaviour of the real interest rate, this will begin to rise once nominal interest rates reach zero – the so-called zero lower bound for nominal interest rates - while deflation intensifies. Also, borrowers face higher debt costs as the real value of the loan principal rises and widespread loan defaults become the norm. This results in the so-called debt-deflation phenomenon. Of course, what represents a loss for debtors translates into a net gain in wealth for creditors who might be inclined to spend their extra wealth, or will they? After all, if expectations of deflation become entrenched, there is a

growing tendency for consumers to postpone some purchases in the hope that they will be cheaper in the future. This further contributes to the slump in aggregate demand with disastrous economic consequences. Nor is the fiscal authority immune to deflation as falling consumption and income translate into less tax revenue while the economic slump implies greater expenditures on social programs to combat, for example, a rising unemployment rate.

The zero lower bound issue conjures up an old idea that permeates the literature dealing with monetary policy when inflation is very low and becomes negative, namely the possibility of a so-called “liquidity trap.” Once again, however, what is vital in the process is not the level of inflation or deflation, per se, but whether expectations of inflation are falling continuously or expectations of deflation take hold. One much quoted US study by economists at the Federal Reserve (Ahearne et. al., 2002) points out that Japan drifted into its present predicament rather slowly. It took several years of deflation, combined with stagnant economic growth, to finally push expectations of inflation below the zero inflation brink. By then the damage was done as the Bank of Japan effectively hit the zero lower bound for interest rates. Policy mistakes were further compounded by a belief that monetary policy could do no more once the zero lower bound was reached. Such mistakes still appear to permeate the speeches of some policy makers (for example, a recent speech by a member of the Executive Board of the ECB) who worry that, at zero interest rates, all of the central bank’s monetary “ammunition” will have been exhausted (Bini Smaghi 2008). This is not the case, as Bernanke’s Fed, with a home-grown US version of the “quantitative easing” eventually put into place in late 2008, mirroring to some extent the recent Japanese experience, makes clear.

While previous mistakes might be avoided, new mistakes can easily be made. Space limitations prevent a full description but there is the danger, noted earlier, of a deliberate policy overreaction that understates the costs of a future that brings with it excessively high inflation. Central banks have been justifiably aggressive in reducing interest rates to never-seen-before levels, but there are reasons to believe that the reverse is far less likely to happen. In addition, if policy makers and the public view central banks as having failed to extricate us from the current crisis in an effective manner, the concept of central bank autonomy will become a quaint idea once again. After all, as central banks rush to provide liquidity to some sectors of the private sector economy, but not others, they are implicitly favouring certain groups of debtors over others. Redistributive decisions are normally taken by the fiscal not the monetary authorities.

### **What to Do about Deflation?**

If policy makers and academics can agree that demand-induced deflation is potentially economically disastrous, the important question remains: what policy or combination of macroeconomic policies can soften the output consequences from a deflation and what lessons does history hold? First, the solution to a deflation must begin with monetary policy. Fiscal policy is simply too slow to take effect and, as the deflation in Japan demonstrates rather vividly, can be spectacularly unsuccessful if misdirected and is unable to significantly reverse expectations of deflation. The only possible exception might be a temporary tax holiday in an attempt to get the public to raise aggregate demand. More “exotic” solutions, such as the central bank intervening in the stock market, are also unlikely to influence expectations, as the Japanese experiment also illustrates. Turning to solutions based on appropriate monetary policies, three

options have been suggested (see also Svensson, 2003). One is simply to put money into the hands of the public, either through purchases of bonds or through other means, in an attempt to persuade the public to spend their “excess” money holdings. Two other proposals are likely to be more successful, however. One is to impose a formal numerical inflation objective in the form of a positive inflation target. That said, it remains critical for the central bank to persuade markets and the public that it can expect positive future inflation. This is, of course, easier said than done. For example, we know from the macroeconomic history of the 1970s through the 1990s that it can take a considerable amount of time for the public to alter its expectations of future inflation. Second, in the event the central bank is successful in changing minds and driving up the inflation rate, it can later renege on the policy and suffer a credibility loss. Indeed, some observers believe that is exactly what the Bank of Japan did when it seemed to emerge from deflation in the mid-1990s only to fall back into a deflationary mode toward the end of the decade. Nevertheless, when combined with other measures to stimulate aggregate demand, for example, a promise to maintain a zero interest rate policy on short-term instruments until there are clear indications that expectations of inflation have turned positive, the overall economic impact should be beneficial. An alternative, dubbed the “foolproof way,” would see a country in the throws of an aggregate demand-induced deflation intervene in the foreign exchange market to effect a significant exchange rate devaluation. This would be combined with policies to announce targets for higher future price levels and, finally, a strategy to escape from these temporary measures via a commitment to a long-run inflation objective.

To a greater or less extent, all of these proposals have been floated around for decades. However, recent fears about the spread of deflation on a global scale have prompted academics and policy makers to come up with practical solutions to this macroeconomic problem. The real danger should be stressed, however, that if inflation is once again around the corner it will test autonomous central banks’ resolve to put the genie in the bottle. It is all well and good to say we should not worry about, say, 5 to 10 percent inflation, or that inflation is the “lesser evil,” but it is quite a different matter to deal with the possibility of rapid increases in central bank policy rates that may well be required if, just as they did a few years ago, central banks implement policies that are too expansionary simply to avoid a mild deflation at all costs. The same central banks that are currently being accused of poorly executing policy are the ones that are expected to deliver the kind of good communication necessary to prevent a strong resurgence in inflation. One must have a healthy dose of scepticism that a resurgence of future inflation can so easily be avoided. Yet, the historical experience also suggests that any policy reversal to stem a rapid return to higher inflation must be implemented with care. In 1937, the Fed tightened policy considerably, and in retrospect far too early, for fear of a resurgence of inflation, only to help push the US economy back into a recession a few short years since that country emerged from the Great Depression.

Readers might be surprised to find that there exists a large literature on the economics of deflation. Siklos (2005) collects some of the most important studies in two volumes. However, there are also other recent sources. Meltzer (2003; also see references therein) contains references to all the important works dealing with deflation in the US during the 1920s and the 1930s. Burdekin and Siklos (2004) is a collection of articles that examine episodes of deflation new and old, and readers will find several useful additional references there as well. Finally, for



an up-to-date view of deflation and its consequences, the International Monetary Fund's (2003) report on the question is an accessible piece on the topic of deflation.

Eichengreen (1992) is the classic reference that shows why ideology is a poor substitute for good judgment, a feature that no doubt helped US policy makers trigger the Great Depression (Siklos 2008).

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