

Understanding deflation

Falling prices and their impact on the economy

SUMMARY

The possibility of deflationary periods occurring in the world's most advanced economies is being signalled by many commentators. The effects of deflation on an economy depend on whether the deflation is caused by falls in demand or rises in productivity. The former is essentially detrimental to economic growth and may, in a worst case scenario, develop into a hard-to-break, self-reinforcing deflationary spiral, whereas the latter is believed to be conducive to economic growth.

Economists remain divided over the effects of inflation and whether or not it should be mitigated at all times. Some claim that deflation always creates more problems than benefits for an economy, and as such should be actively prevented. Others argue that historical data do not show that inflation is preferable to deflation and that what influences an economy most negatively is not the deflation itself, but the significant fall in asset values (such as real estate or stocks) which often occurs first.

The euro area has experienced a period of low inflation since 2013, and recently recorded successive declines in price levels. The European Commission and European Central Bank, however, predict that price levels will start to rise in 2016, while the International Monetary Fund and the OECD assess the risks of prolonged low inflation to be higher. Economists and commentators remain divided regarding the possible causes, risks, consequences and nature of this low inflation environment. Some indicate that it will create conditions favourable to economic growth, while others fear that persistent low inflation, or possible outright deflation, will be hard to mitigate and will be harmful to economic recovery in the euro area.



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Background

Economic activity is cyclical in nature, which means that a period of growth precedes a period of contraction, which is then followed by another period of growth and so on. The inflation cycle does not perfectly [match](#) this cycle, but often prices tend to fall during recession,¹ and subsequently increase through the recovery. Economic history suggests that movements of prices have often been inflationary (price increases), but there were also periods when prices decreased. Such a general persistent decline in prices of goods and services is known as [deflation](#).²

Various commentators highlight the possibility of a new deflationary period accompanying the recent signs of recovery from the financial and economic crisis. For example, in its 2015 survey, the International Monetary Fund [warned](#) that the world's most advanced economies face an increasing risk of deflation.

Deflation: causes and consequences

Economic theory [suggests](#) two main causes for deflation: a fall in the overall level of demand or an increase in aggregate supply. The effects on the economy are influenced by whether the deflation is demand-side (so-called 'malign'), or supply-side (so-called 'benign') deflation.

Demand-side deflation

Most macroeconomists [agree](#) that, in the longer term, deflation is essentially a monetary phenomenon (the effect of insufficient supply of money). However, it can also be prompted by negative [shocks](#) to aggregate demand, such as asset price busts (e.g. a housing bubble bursting), credit crunch, or steep dips in consumer confidence. Aggregate fall in demand in an economy is likely to result in a general drop in prices of goods and services, as firms need to attract customers by cutting prices. Consumers might in turn delay spending, anticipating lower prices. This creates excess capacity in an economy. Profits decrease and so does demand for labour. As unemployment rises, wages decline which may contribute to the so-called '[deflationary spiral](#)'. This is essentially a vicious circle, in which decline in economic activity is self-reinforcing and exacerbated by further reductions in demand, wages, and rising unemployment, which further diminishes general demand in the economy. A prominent example of such a deflationary spiral is the persistent post-1998 deflation in [Japan](#).

Another negative phenomenon which may weaken real economic activity is 'debt deflation'. When wages and prices fall, workers' income and companies' profits are likely to decline. However, the real value of debt contracted when incomes were higher rises (the cost of servicing debt obligations is now higher), which makes repayments more difficult. Debtors may reduce

Measuring price movements

Central bankers are divided when it comes to the optimal method of measuring changes in price levels. There are two main methods of calculating: (i) headline inflation, which takes into account the costs for the items in a 'basket of common goods', used by the European Central Bank and the Bank of England, and (ii) core inflation, which excludes food and energy since they tend to be the most volatile components of inflation, and as such may make it more difficult to examine underlying inflation trends (used by the US Federal Open Market Committee). Some researchers [suggest](#) that (for the euro area) core inflation does not accurately indicate inflationary developments, since energy and food prices have a lasting impact on other items in the price 'basket', and as such should not be excluded. Proponents of using core inflation [argue](#) that volatile energy and food prices may suggest incorrect developments in general price levels and, as they tend to be reversed quickly, they do not need to be analysed in considering monetary policy intervention.

spending in order to be able to pay their debts, and lenders may be hesitant to extend credit while their balance sheets deteriorate due to an increasing number of bad debts. Both the pressure to cut spending and the tightening of access to finance are likely to further depress demand. Debt deflation can be especially harmful to property owners who may find themselves in '[negative equity](#)' – when the value of their house deflates below the level of the outstanding balance on the loan used to buy that house.

Supply-side deflation

Economic history suggests that periods of mild deflation do not inevitably have such adverse effects. Moreover, there have also been periods when persistent price decline co-existed with relatively strong economic growth. For [example](#), in the period from 1869 to 1896, the US economy expanded annually at 4.6%, while prices declined by 2.9%. Such benign deflation may be an effect of improved potential in the supply side of the economy. This can be manifested in stronger growth in productivity, due to technological advances, increases in labour productivity, lower per unit costs of production or successful structural policies.

Unlike the case of a collapse in aggregate demand, positive supply-side developments generate stable spending in the economy, since the fall in prices is compensated for by an increase in the level of output. The downward pressure on prices results in increased real incomes for those whose income remains unchanged or rises (unlike in malign deflation, when incomes fall). Company profits remain stable, since the lower prices are offset by lower per unit costs of production (due for example to increased labour efficiency). Economic growth models [show](#) that an increase in productivity growth should also lead to an increase in real interest rates. Consequently, the higher real interest rates should offset the downward pressure on nominal interest rates exerted by deflationary pressures and hence prevent the nominal interest rate from hitting zero.

Benign deflation may also occur due to positive changes in [factor input](#) growth (e.g. an increase in labour supply). In such a situation, profit margins remain stable, since per unit costs decline due to lower [nominal](#) wages. These nominal wages fall, since the increase in labour supply causes a decline in real wages. This may consequently increase the real debt burden and therefore debt repayment ability, which may be challenging to debtors. Overall, economic research suggests that benign deflation is conducive to economic growth and stable profit margins, but the best results stem from productivity growth rather than from factor input growth.

Deflation: The good, the bad and the ugly?

A more nuanced view of deflation is consistent with the findings of Bordo and Filardo (2004 and 2005), who indicate that historical evidence points to the [existence](#) of three [types](#) of deflation: the good (associated with strong economic growth), the bad (associated with weak economic growth) and the ugly (with deflationary spiral). They also note that [zero-bound](#) nominal interest [rates](#) are never reached during periods of 'good' deflation.

The economic debate

The economic effects of deflation have been carefully considered in recent policy discussions. However, debating deflation has a long history: for example, the Keynesian economic school recommends price stability and identifies deflation as having the effect of depressing an economy, while Milton Friedman prescribed pursuing deflation as the optimal monetary policy. Economists remain divided on the topic to this day.

Historically, deflation [occurred](#) quite frequently in the late 19th and early 20th century and then again between the two World Wars. There have been fewer episodes of deflation since. A recent [paper](#) by the Bank of International Settlements (BIS) examined deflation in 38 countries over the past 140 years. The authors concluded that, even though deflation and economic depression may coexist in the same period of time, there have also been many episodes during which deflation was not strongly correlated to weak economic growth (or even had a positive [influence](#)). They point out that, rather than a general fall in price levels; it is the fall in property and equity prices (such as stock market crashes or [housing](#) bubbles bursting), which influence economic growth in the most negative way. Other economic research [found](#) insignificant links between deflation and depression (except during the Great Depression);³ broad reviews of economic papers confirm the [same findings](#), but also [suggest](#) that major gaps exist in empirical assessment of deflation, and hence in understanding the links. Results also differ by region, with Europe actually registering [higher](#) growth during periods of deflation than inflation.

The 2014 BIS Annual [Report](#) suggests that deflationary spirals are not inherent to periods of deflation and seem to be more an exception than the rule. In modern times wages are less flexible than they were during, for example, the Great Depression, which reduces the risk of a self-reinforcing deflationary spiral of wages and prices. Furthermore, BIS suggests that some recent episodes of deflation⁴ have often been accompanied by rising asset prices, credit expansion and strong economic output, and constituted 'good' deflation, which therefore need not be addressed by such means as easing monetary policy. Another negative effect of deflation, i.e. postponing purchases due to an expectation that prices will be lower in the future, is also contested by some economists: since deflation lowers nominal interest rates, they argue that this [offsets](#) rewards for choosing saving, as opposed to spending money.

Some economists even suggest that a period of 'good' deflation based on excess supply is [imminent](#), as in the present era many productivity-enhancing technologies⁵ converge, substantially boosting productivity and consequently economic growth.

Conversely, many influential economists [argue](#) that deflation has significant detrimental consequences for an economy. Some empirical research does show that deflation may have high [costs](#) in terms of economic output and welfare. A study of a historical dataset of 15 countries and post-war data for 94 countries suggests [causality](#) between deflation and recession, and links higher deflation with lowered growth rates. Weak economic performance is especially [pronounced](#) when deflation follows asset-price busts and banking crises. Collapses in property prices, in particular, are associated with a much bigger [decrease](#) in output than a consistent fall in the general price level of goods.

An important argument made by opponents of deflation is that, if it lowers interest rates close to the zero bound, conventional monetary policy is severely limited, as central bank lowering of interest rates will no longer work. Since setting and enforcing a target for interest rates is not feasible, the central bank can no longer stimulate economic activity. Others [remark](#) that, since deflation may make real borrowing costs prohibitive and financially distress existing debtors – thereby increasing the fragility of the financial system – it should always be strongly resisted. Prevention, even with unconventional measures such as 'printing money' (increasing the supply of money reduces its value, thereby exerting inflationary pressures), is, according to them, preferable to dealing with deflation once it sets in.

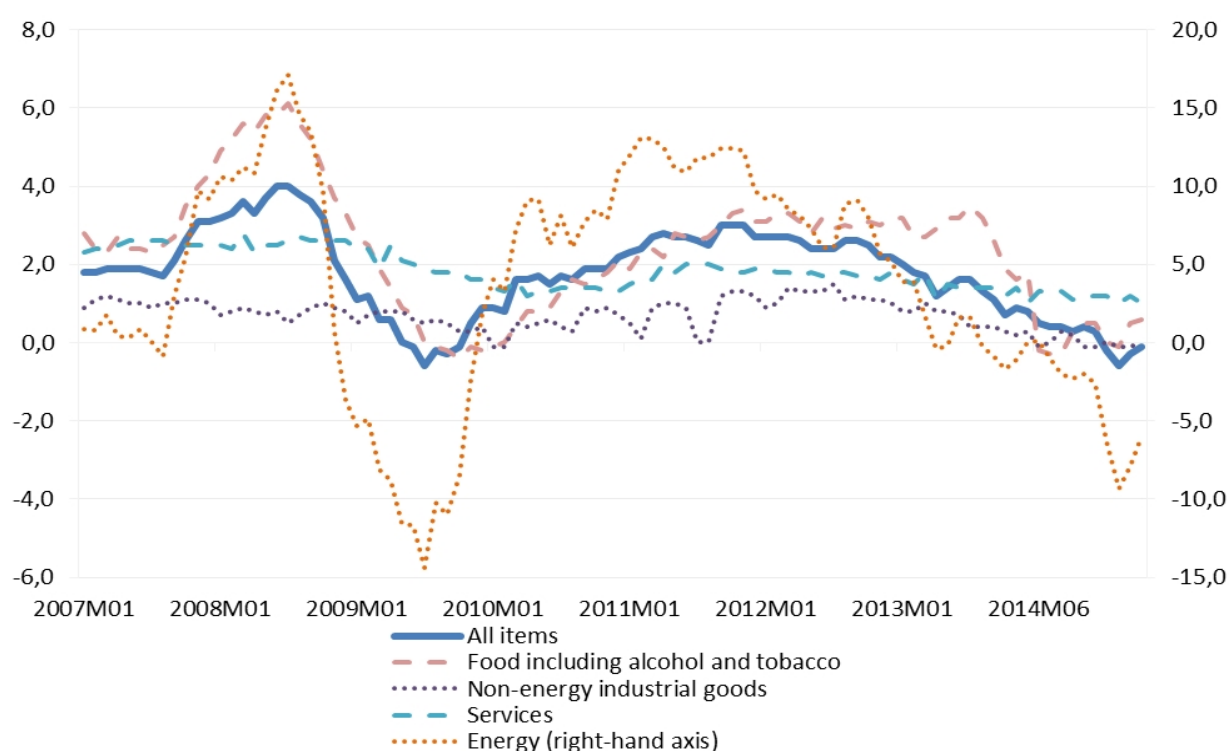
Indeed, Paul Krugman [argues](#) that only unconventional policy measures may send credible inflationary price signals and as such increase spending in the current period, based on expectations of future prices rising again. He also [criticises](#) the findings of the BIS research, saying that the main argument it uses to suggest that deflation may not be bad for the economy is based on the co-existence of deflation and economic growth during the late 19th century. Krugman suggests that this is not a suitable model for assessing today's risk, as this period was conducive to large-scale investment and upward pressure on interest rates. Both these factors made deflation much more sustainable than it is today. Other economists [stress](#) that, since rising monetary value increases general indebtedness in a modern economy, there is no such thing as benign deflation. They suggest, therefore, that the benefits of decreasing prices never outweigh the problems they cause.

Certain economic models support the view that since attempts to [determine](#) the effects of deflation on an economy may give sharply contrasting results, a better researched and widely used monetary policy which seeks to avoid deflationary periods is justified. Other voices claim that such a monetary policy has also often resulted in [avoiding](#) 'good' deflation, which eventually creates economic imbalances that have to be corrected.

Low inflation in the euro area

In December 2014, the euro area recorded its [first drop](#) (annual inflation was -0.2%) in consumer prices since autumn 2009. This first deepened in January 2015 (reaching a level of -0.6%), and was then followed by lessening price declines (-0.3 % in February and -0.1% in March). These recent negative rates for euro area inflation have been driven mainly by the fall in energy prices. Recent figures [show](#) that the trend in declining prices may be slowly reversing, as annual inflation stood at 0.0% in April, after four months of constant decline. The inflation in May 2015 is [expected](#) to rise to 0.3%.

Figure 1 – Euro area annual inflation and its main components, 2007-15



Data source: [Eurostat](#), 2015.

The ECB [paper](#) showed that downside risks to price stability were greater than upside risks during the first half of 2009. After this period, the opposite trend occurred and prices went up until the second half of 2011, when the crisis re-intensified due to elevated stress in euro-area sovereign-bond markets. Since then the downside risks to price stability have again increased.

Short and medium-term outlook

In February 2014, the ECB [estimated](#) the chances of a transition of the euro area to a low inflation regime to be rather small (lower than 10%).⁶ A year later, the ECB survey [predicted](#) 0.1% inflation for 2015, which should then pick up to 1.2% in 2016 and 1.6% in 2017, eventually reaching a level consistent with the ECB [aim](#) of maintaining inflation around levels 'below, but close to, 2%'. The bank [attributes](#) recent deflationary developments to sharp declines in oil prices and projects a forthcoming turnaround in energy prices, a weaker euro exchange rate, a strengthening in cost pressures, employment growth, and the impact of its non-standard measures, to be the main factors behind a gradual return to a desirable level of inflation.

The European Commission, in its recent economic [forecast](#), anticipates inflation in the euro area to be at 0.1% in 2015, and notes that recent declines in medium- and longer-term inflation expectations in financial markets appear to have improved after the ECB's announcement of [quantitative easing](#). Furthermore, it expects inflation to grow to 1.5% in 2016, driven by stronger internal demand, a lower euro, increasing energy and other commodity prices, and a gradual recovery of labour markets and growing employment.

The IMF, in its April 2015 economic [outlook](#), assesses that there is a risk of prolonged low inflation in the euro area. The report predicts inflation to be at 0.1% in 2015 because of persisting 'slack'.⁷ The IMF sees the possibility of stagnation and prolonged low inflation in the euro area as the most important downside risk to economic growth. Vulnerability is still persistent, as possible economic shocks – from weak global growth, geopolitical events, stalling euro-area reforms, political and policy uncertainty, and policy reversals – could decrease inflation expectations further and provoke a debt deflation dynamic. The IMF recommends a comprehensive strategy to ward off deflation risks, comprising efforts to address [non-performing loans](#), boosting growth via infrastructure investments and growth-oriented fiscal policies, and structural reforms to increase productivity, stimulate investments and promote hiring.

The OECD [assesses](#) that lower oil prices have increased the risk that inflation will remain considerably below the ECB target for a prolonged period. However, these risks may be mitigated by inflation-inducing developments such as increased real household income due to lower oil prices and long-term aggressive quantitative easing. Furthermore, the OECD expects that stronger euro depreciation, while increasing export competitiveness, will further reduce slack and push import prices upwards. Its main recommendation is to fend off deflation by mutually reinforcing comprehensive packages combining fiscal, structural and monetary policies.

Recent views

The views on the nature of the current low inflation environment in the euro area, as well as its possible causes, risks and consequences, remain divided and are often inconclusive. From the ECB the comments are, perhaps unsurprisingly, mostly calming. Its President, Mario Draghi, famously [said](#) that 'the fact that inflation is low is not, by itself, bad'. He has, however, also stated that the risk of the euro area entering a deflationary spiral is [limited](#), but cannot be entirely excluded. On the other hand,

Jens Weidmann, Bundesbank President and member of the ECB Governing Council, recently predicted that dangerous deflation [characterised](#) by a 'downward spiral of falling prices, declining wages, consumer restraint and reduced investment by companies ... is not very likely in the future'.

Many economists consider these views to be rather optimistic. Paul Krugman, for example, [starkly](#) disagrees with Draghi, and argues that zero-bound interest rates resulting from low inflation constrain standard monetary policy, a problem exacerbated in the euro area by the lack of fiscal integration and resulting tight fiscal policy. Furthermore, wages⁸ and prices generally do not go down easily, a phenomenon which he considers to be a big challenge for those countries which need to undergo internal devaluation to improve the competitiveness of their economies. Therefore, Krugman claims that excessively low inflation in the euro area is harmful for the economy.

Some economists argue that since deflationary pressures in the euro area are mainly [driven](#) by oil prices, they can be considered a benign, '[good](#)' type of deflation which may contribute to an economic [recovery](#). Others, however, are concerned that it may soon turn into a more [harmful](#) deflation type, since [core inflation](#) hit its lowest ever recorded level in 2015 and is likely to remain low, indicating that it is not only oil prices that are [responsible](#) for the current situation. Indeed, there are economists who consider that the euro area is already in [malign deflation](#), caused by a collapse in demand, and as such it is 'poised between outright deflation and mere stagnation', rather than on the way to a quick recovery. Furthermore, IMF analysts consider that, because of the widespread indebtedness of the euro area, low inflation or possible deflation are detrimental to [recovery](#), particularly in the more fragile Member States, where such an environment hinders attempts to decrease debt levels, regain competitiveness and bring the unemployment rate down. A more [nuanced](#) view indicates that, while falling prices in some more vulnerable euro-area countries are the result of a lack of demand due to a deep recession following the financial crisis (with both unemployment and debts rising in parallel), economically stronger Member States fare better. The concern is that, notwithstanding fairly good times in the core countries, overall and core inflation remain well below the target. This still does not make a deflationary spiral likely, but may cause a prolonged period of low inflation harmful to the economy.

Conversely, some commentators dismiss these fears, on the grounds that an economy based on [fiat money](#), such as Europe's, has never seen a deflationary spiral and will most [likely](#) not experience it now, as government actions can stop deflation from spinning out of control, as long as it does not emerge unexpectedly. Furthermore, it is argued that the current deflationary pressures should be seen as [positive developments](#), especially for the most troubled countries in the euro area, as cheap oil creates conditions conducive to economic recovery such as 'low interest rates, a favourable euro exchange rate, and a boost in real incomes'. Furthermore, retail sales across the euro area are [growing](#), while declining prices do not seem to be feeding into wage negotiations (which would make addressing deflation more difficult). This, according to some observers, makes the current deflationary trend likely to reverse in the coming months. Economists who are most optimistic even say that there are already signs that the deflationary period may have [turned](#).

Contrary to this, more cautious voices warn that even if the looming deflation is not the 'bad' kind, it may have dangerous 'second-round' effects, because the deflationary period, which is likely to last at least a year, may influence wages and inflation

expectations downwards, in effect exacerbating deflationary pressures. Many commentators indeed agree that the threat of deflation remains [present](#), the recovery is fragile, and that the situation may deteriorate rapidly should unexpected [shocks](#) to the euro area economy occur.

Further reading

[The deflation naysayers](#), J. Cohen-Setton, Bruegel, 2015.

[Benign and malignant deflation – is deflation necessarily a bad thing?](#), J. Cohen-Setton, Bruegel, 2014.

[Euro area outlook for 2015. Deflation but the good kind.](#) P. Bomhold Nielsen, L. Tranberg Rasmussen, Danske Bank Markets, 2015.

[Should the euro area be concerned about deflation?](#) G. Illing, Intereconomics 2014/3.

Endnotes

- ¹ Recession is defined in an economy as two consecutive quarters of negative gross domestic product.
- ² Deflation is defined by [many](#) as a rate of inflation which has been negative for a quarter of the year. The ECB [defines](#) disinflation as 'a process of declining inflation rates (i.e. a slower rate of increase in the general price level) which could even result temporarily in negative inflation rates'. According to these definitions the euro area is currently in a period of disinflation rather than deflation (see pages 5-7 of this briefing).
- ³ [Critics](#) of BIS findings argue that earlier (2005) research by the Bank could be read as a cautionary tale. It states that deflation is 'typically unexpected' with 'non-linear' effects which may create 'a spiral of self-reinforcing disruptions'. Furthermore, it concludes that 'The historical record suggests that the likelihood of an economy slipping into deflation from a low-inflation environment should not be underestimated'.
- ⁴ The report gives examples of deflations during the 1990s and 2000s in countries such as China and Norway.
- ⁵ Examples include such innovations as semiconductors, computers, the Internet, telecommunications, robotics and biotechnology.
- ⁶ In mid-2014, the ECB [perceived](#) the risk for deflation in euro area as remote. As recently as December 2014, the ECB's predictions were showing estimated inflation for 2015 to be 0.7%.
- ⁷ Slack is [defined](#) by the IMF as 'negative output gap'. It occurs when actual output is less than what an economy could produce at full capacity. This spare capacity is there because of weak demand. Many consider output gap to be an important measurement tool for measurement of inflation pressure in an economy. For more details see e.g. Reserve Bank of New York [paper](#), or [research](#) by the Federal Reserve Board.
- ⁸ This is also called wage stickiness, and is believed by many to cause higher unemployment as employers prefer to fire part of their staff to achieve general cuts in salaries.

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