

Dangers of Deflation

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Dangers of Deflation

Douglas H. Brooks and Pilipinas F. Quising

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Recently, there has been growing concern about deflation in some countries and the possibility of deflation at the global level. Aggregate demand, output, and employment could stagnate or decline, particularly where debt levels are already high. Standard economic policy stimuli could become less effective, while few policymakers have experience in preventing or halting deflation with alternative means.

Causes and Consequences of Deflation

Deflation refers to a fall in prices, leading to a negative change in the price index over a sustained period. The fall in prices can result from improvements in productivity, advances in technology, changes in the policy environment (e.g., deregulation), a drop in prices of major inputs (e.g., oil), excess capacity, or weak demand. Deflation associated with the first four causes is normally benign. When aggregate supply increases due to factors that lower costs of production, it is possible for declining prices to be accompanied by strong economic growth. This is particularly true when technological innovation boosts productivity faster than prices are falling, so that profit margins are not negatively affected. It may also be true when a low-cost producer expands its share of world markets rapidly, driving down some producer or consumer costs, as when the United States (US) economy expanded rapidly between 1870 and 1900, or as the People's Republic of China (PRC) is doing now.

Deflation may arise if consumers reduce their spending because they expect prices to continue to fall or as they become more concerned about their future economic security, particularly if unemployment is rising. The prolonged economic slowdown in Japan has raised concerns about future income prospects among its aging labor force, which may well be one reason for its deflation of the last few years. When broad and deep episodes of price decline follow severe contractions in aggregate demand, or come from competition in industries with excess capacity resulting from overinvestment, deflation can reinforce the fall in output and demand.

When supply exceeds demand in flexible markets it creates a tendency for prices to decline to restore equilibrium. However, declining prices can lead to shrinking profit margins, business failures, and resulting unemployment, which reduces purchasing power further, so prices, output, and demand continue to spiral downward. When substantial overinvestment has occurred, when

asset price bubbles burst, or when credit availability is constrained, demand may remain subdued for an extended period.

Difficulties of deflation can be reinforced by developments in the financial system. Deflation has opposing influences on creditors and debtors, just as inflation has. As prices of goods and services fall, the real value of the currency rises in terms of the amount of those goods and services it can purchase. Consequently, the real value of debt and debt servicing rises. There is thus a potential benefit for creditors and a growing real cost of debt servicing for debtors. By itself, this redistribution of real net wealth is not necessarily negative for the economy as a whole. However, the increased cost to debtors may lead to higher loan default levels, particularly as collateral values fall, threatening the soundness of the financial system and possibly the corporate sector as well. This is particularly true when the share of nonperforming loans is already significant.¹

In this scenario, as uncertainty and expectations of falling prices take hold, even buyers not dependent on credit reduce spending and investors delay investment. As investment collapses, it leads to rising unemployment, further contraction in output, and more deflation. Faced at least with greater uncertainty and possibly with loss of income, some depositors withdraw their funds, forcing solvent but not liquid banks to fail as well. The spiral of deflation continues to depress the economy until measures are undertaken to restore solvency of the banking system and stop price speculation.

Historical Examples²

In some instances deflation has been accompanied by strong economic growth, such as in the US in the late 1800s. However, damaging effects of deflation are also well documented in economic history. The collapse of production and employment after 1929 that led to the Great Depression was accompanied by widespread price declines that reinforced the fall in output and demand and led to widespread bank failures.

A more recent account of the danger of deflation is that of Japan. After financial liberalization in the 1980s, Japanese banks

¹In explaining the Great Depression and other severe historical crises in the US economy, Fisher (1933, 344) identified overindebtedness and deflation as the two most important causes. He noted "it is the combination of both—the debt disease coming first, then precipitating the dollar disease—which works the greatest havoc."

²This discussion draws heavily on Cecchetti (1997) and Ahearne et al. (2002).

were exposed to tougher competition and entered into riskier transactions, lending huge amounts to property developers and raising funds on the stock market. This resulted in a rise of equity and real estate prices that, along with low interest rates, eased the cost of investment. Consequently, the ratio of bank loans to GDP soared. Credit backed by property fueled economic activity and real GDP grew at an annual average of 5 percent during 1985-1990.

As asset prices continued to rise, the Bank of Japan (BOJ) decided to increase interest rates in 1989 to halt the economy's overheating. The result was immediate: the stock market collapsed at the beginning of 1990 and GDP growth declined from a peak of 5.5 percent in 1990 to 2.5 percent in 1991. As land prices were still increasing, the BOJ continued to increase interest rates until GDP plunged, land prices declined, and inflation started to fall.

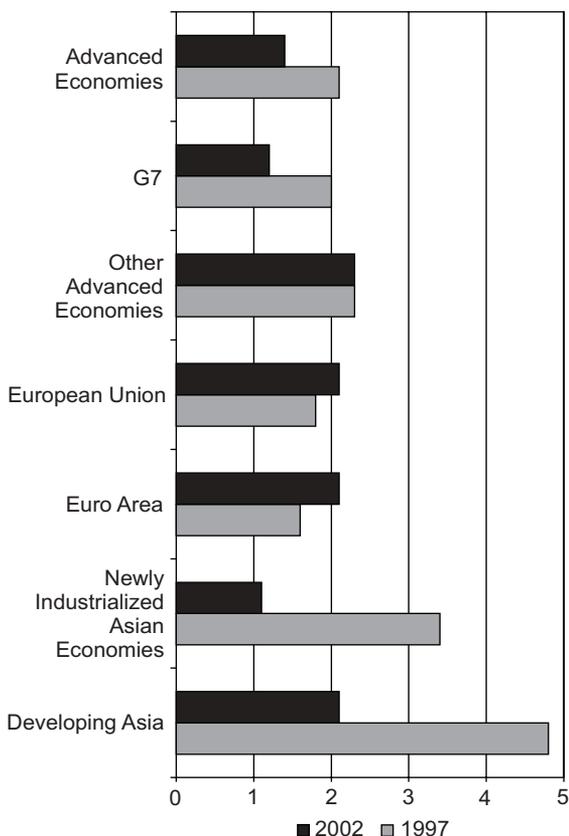
The resulting decline in asset prices disrupted the smooth functioning of the financial system. Borrowers who used land as collateral found the value of their collateral diminished. Banks, seeing the increased possibility of losses from loan defaults, started to restrict credit, making it more difficult for borrowers to service their debts. Borrowers began to default and banks were soon overwhelmed by bad debts, forcing them to reduce lending further. The decline in stock prices also reduced bank capital. Companies faced with massive debt and excess capacity slashed their investment and production, and households reduced consumption to save more for difficult days ahead, with the weak demand leading to further price declines.

Deflation Prospects

At present, economists and policymakers disagree whether or not there is an imminent threat of global deflation. However, there is broad agreement that the possibility is greater than at any time since 1930 due to structural features of the current global economy. The International Monetary Fund projects inflation of 1.4 percent for 2002 in the advanced economies—the lowest in 40 years.³ In PRC; Hong Kong, China; Singapore; and Taipei, China, deflation has already set in.

³Inflation (based on the consumer price index or CPI, as of September 2002) is 1.5 percent in the US, -.70 percent in Japan, 2.1 percent in the Euro Area, 1.7 percent in the United Kingdom, and 2.3 percent in Canada. See US Bureau of Labor Statistics (www.bls.gov), Japan Statistics Bureau and Statistics Center (www.stat.go.jp), EUROSTAT (www.europa.eu.int), UK National Statistics (www.statistics.gov.uk), and Statistics Canada (www.statcan.ca).

Inflation Rates*
(consumer prices, % change on previous year)

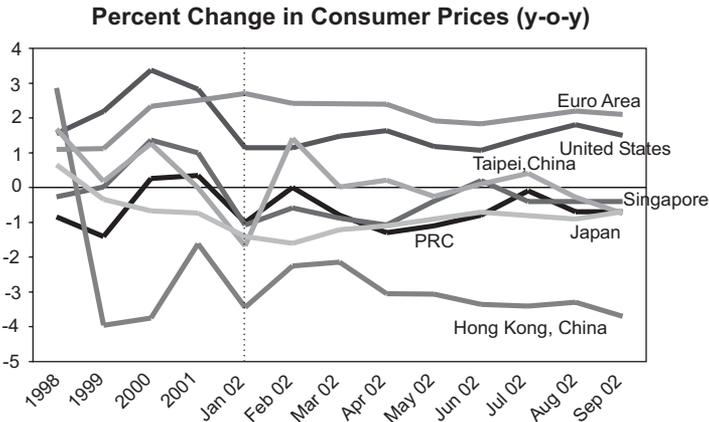


*Following WEO Country Classification
Source: IMF World Economic Outlook (WEO) Database, September 2002.

Further, the global economy remains weak. Although GDP growth is expected to continue to pick up during 2002 and 2003, the recovery will likely be slower than earlier expected.⁴ In Japan, deflation continues, the unemployment rate remains relatively high at 5.5 percent (as of October 2002) and government debt continues to grow, limiting the scope for further fiscal stimulus. Growth prospects for the US and Europe are also subdued given the

⁴Global growth is projected at 2.8 percent in 2002 rising to 3.7 percent in 2003 (IMF 2002).

contractionary effect of the recent fall in equity prices on corporate and household spending. With the possibility of a housing bubble in the US, the contractionary effect may be even more pronounced.⁵



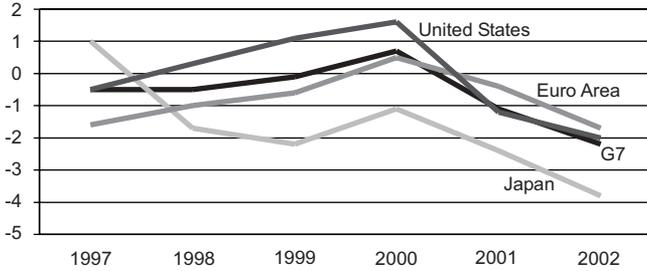
There is also pressure from excess capacity as the output gap is estimated to still be negative for the G7 economies, exerting downward pressure on prices.⁶

With interest rates already low, central banks of the major economies have less potential for expanding credit to fight deflation. As of 11 November 2002, the US Federal Reserve had already lowered its target for the federal funds rate to a 41-year low of 1.25 percent. Japanese interest rates are almost zero. In the major economies, only European interest rates have significant room for more reduction.

⁵The thesis—backed by 50 years of data—is that housing prices over the long run increase only at the rate of inflation, represented by the CPI. This persists despite occasional fluctuations in supply and demand, regardless of rising incomes or changing mortgage rates. Currently, average housing prices have outstripped inflation by 30 percent, and Baker (2002) asserts only one third of that is due to the increased price of renting. A large part may be due to speculation.

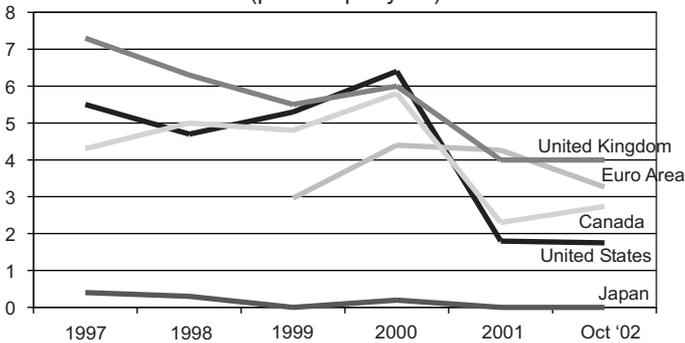
⁶The output gap is the difference between an economy's actual output and the level of production it could achieve with existing resources (potential output).

Output Gap, 1997-2002
(percent of potential GDP)



Source: *World Economic Outlook* (IMF 2002).

Policy-related Interest Rates¹
(percent per year)



¹Annual data are end of period. For the US, federal funds rate; for Japan, overnight call rate; for the Euro Area, Euro Interbank Rate (3 months maturity); for the United Kingdom, base lending rate; for Canada, overnight money market rate.

Sources: International Financial Statistics, October 2002; Federal Reserve Bank (www.federalreserve.gov); Bank of Japan (www.boj.or.jp); European Central Bank (www.ecb.int); Bank of England (www.bankofengland.co.uk); Bank of Canada (www.bankofcanada.ca).

In most of developing Asia, domestic demand is still weak and countries are relying more on external demand for growth. Industrial countries are increasing imports of Asian goods and services, for which prices are falling. In 2001, developing Asia accounted for about a fifth of total world exports and almost one fourth of that share came from the PRC alone. The PRC's exports to Europe, Japan, and US remain on an upward trend (CEIC Data Company Ltd.). Its exports to Europe and the US increased about 30 percent in August 2002 compared to the previous year's figure.

With the accession of the PRC to the World Trade Organization in 2001, hopes of selling to its domestic market were high among foreign investors. But now manufacturers are finding it easier to use the PRC as a manufacturing base to sell to the world rather than to its domestic market (Leggett and Wonacott 2002). The PRC is steadily becoming an international manufacturing power, and growing competition among its producers in a context of surplus low-cost labor is pushing down prices of a growing range of commercial products both domestically and in world markets. Consequently, developing Asia is claimed to be exporting deflation to industrialized countries.

Policy Responses

Countries that can easily expand their money supplies can often, but not always, escape deflationary pressures. Since prices are set in monetary units, expansionary monetary policy is a natural response to falling prices. Before inflation and interest rates fall too close to zero, the best response is to try to preempt deflation by cutting interest rates aggressively. If interest rates are lowered too little, resulting deflation will render monetary policy less effective, but if rates are cut too much, they can still be raised later to control inflation. However, since nominal interest rates cannot fall below zero except under extremely unusual circumstances, deflation sets a floor below which the central bank cannot lower interest rates to boost liquidity and stimulate demand.⁷ If short-term interest rates are already essentially zero, purchases of government securities by the central bank could still lower long-term interest rates, reducing the cost of capital for firms to spur investment.⁸

Intervention in the market for foreign exchange can also be undertaken to influence price levels. In a country with a floating exchange rate and adequate foreign reserves, the central bank can purchase foreign currencies to raise their value in terms of the

⁷This could arise if depositors were willing to pay banks for ensuring the security of deposits (or to keep them hidden anonymously from tax authorities). However, banks would not lend at negative nominal interest rates, so there would be no stimulative impact.

⁸This assumes that banks from whom securities are purchased would lend the proceeds onward, which may be doubtful if the expected return for banks is no greater than that of vault cash, or if investors reallocate their portfolios more toward equities.

domestic currency and thereby raise the prices of imported goods, while also increasing the price competitiveness of its exports.⁹ If a country follows a fixed exchange rate regime, monetary policy options are more limited. A country committed to a fixed exchange rate regime cannot freely expand the money supply to fight deflation without raising pressure for currency devaluation.

More innovative policy proposals include placing fees on banks that keep excess cash on deposit at the central bank or developing a technology to make currency worth less the longer it remains unspent. Expansionary fiscal policy (increasing spending or cutting taxes) can also be effective in fighting deflation if the government's budget deficit and debt load are not already high.

Economies are said to be caught in a liquidity trap when further increases in the real money supply have no further impact on real spending.¹⁰ Then it may be necessary to alter people's inflationary expectations upward, something beyond the usual realm of monetary (or fiscal) policy in recent years. Then again, unusual times may call for unusual measures. When debt and deficit levels are high, as in Japan at present, a credible communication by the central bank of its commitment to persist with aggressive quantitative easing to restore positive inflation (at a hopefully mild level) may be necessary to influence expectations and hence demand (Krugman 1998, Rogoff 2002). However, restoring sustained economic growth may require structural reforms in the banking and possibly corporate sectors as well.

Conclusions

Deflation can be benign and accompanied by strong economic growth. It can also lead to a downward spiral in output, employment, and demand, in a context where normal policy options cannot be effected. This is particularly true when debt levels are already high. Consequently, the best policy is to preempt deflation. When it is too

⁹This would be ineffective if all major trading partners tried to depreciate their currencies simultaneously. Coordinated policy responses would be most effective in dealing with global deflation.

¹⁰A liquidity trap may also be thought of as "a situation with zero interest rates, persistent deflation and persistent deflation expectations" (Svensson 2000, 27). As Keynes famously phrased it, monetary stimulus then becomes like "pushing on a string." In terms of IS-LM analysis, in a liquidity trap the LM curve is horizontal and changes in the money supply do not shift it.

late to prevent deflation, aggressive monetary easing through innovative methods may become necessary. While the dangers of deflation are not severe at present, a watchful policy stance is advisable.

References

- Ahearne, A., J. Gagnon, J. Haltmaier, and S. Kamin, 2002. Preventing Deflation: Lessons from Japan's Experience in the 1990s. International Finance Discussion Papers Number 729, Board of Governors of the Federal Reserve System.
- Baker, D., 2002. "The Run-Up in Home Prices: Is it Real or is it Another Bubble?" Center for Economic and Policy Research. Available: http://www.cepr.net/Housing_Bubble.htm.
- Cecchetti, S., 1997. Understanding the Great Depression: Lessons for Current Policy. Working Paper 6015, National Bureau of Economic Research, Massachusetts.
- International Monetary Fund, 2002. *World Economic Outlook*. Available: <http://www.imf.org/external/pubs/ft/weo/2002/02/index.htm>.
- Fisher, I., 1933. "The Debt-Deflation Theory of Great Depressions." *Econometrica* 1(4):337-57.
- Krugman, P., 1998. "Japan's Trap." Available: <http://web.mit.edu/krugman/www/japtrap.html>.
- Leggett, K., and P. Wonacott, 2002. "Burying the Competition." *Far Eastern Economic Review* 17(October):30-5.
- Rogoff, K., 2002. "Revitalizing Japan: Risks and Opportunities." Available: <http://www.imf.org/external/np/vc/2002/110702.htm>.
- Svensson, L. E.O., 2000. How Should Monetary Policy Be Conducted in an Era of Price Stability? Working Paper No. 7516, National Bureau of Economic Research, Massachusetts.

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