Deflation and the Liquidity Trap

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During the past decade, the fall in worldwide inflation has raised interest in the risks associated with negative inflation, or deflation. What gave the issue an element of urgency was the long-lasting recession in Japan, which was accompanied by mild but persistent deflation and short-term nominal interest rates close to zero. In such an environment, cutting short-term interest rates, the usual remedy for weak demand, was just not an option. This survey reviews IMF research on how to counter weak demand at low interest rates.

The first response of many economists to Japanese deflation was to suggest that the Bank of Japan simply print more money. It was believed that such a policy, sooner or later, would reverse the deflationary trend and stimulate demand. Over the years, however, while the Bank of Japan was printing money at an unprecedented rate, short-term interest rates were getting closer to zero, and the effect of money supply increases was modest at best. Since 1997, the Bank of Japan has more than doubled the economy’s monetary base.

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Growth, Policies, Institutions, and Poverty

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One of the Millennium Development Goals set by the United Nations is to reduce extreme poverty by half by 2015. How can such a goal be reached? Can growth by itself be pro-poor, or does poverty reduction depend on macroeconomic policies? How effective are policies directly targeted at the poorer segments of the population? Is the quality of institutions important in determining poverty reduction strategies? This article summarizes recent IMF research on these critical issues.

Kraay (2004), using household survey data for a sample of 80 developing countries, looks at the relationship between economic growth and poverty reduction. He finds that most of the variation in poverty can be explained by average income growth, and argues that growth is indeed pro-poor. Instead of looking at income-based measures of poverty reduction, Moser and Ichida (2001) rely on human development indicators of poverty, such as life expectancy, infant mortality, and primary school enrollment. Using a panel data set for 46 countries in sub-Saharan Africa, they also find a strong and robust relationship between growth and poverty reduction.

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Considerable research at the IMF has focused on how such a doubling of the monetary base could have had no effect on prices. The answer dates back to Keynes: Japan has found itself in a liquidity trap.

Eggertsson and Woodford (2003, 2004) show that a liquidity trap arises when temporary shocks make the zero interest rate bound binding. When this is the case, government bonds and money become perfect substitutes, and “quantitative easing” (the injection of liquidity through open market operations in government bonds), if it leaves expectations unchanged, has no real effects and only makes individuals substitute money for bonds in their asset portfolios. Monetary policy can still be effective, but only if it is able to change expectations about future interest rates and inflation.

Eggertsson (2003) shows that if the central bank is unable to commit to future policies, and minimizes a standard loss function, quantitative easing has no effect on expectations. Indeed, the public expects that any increase in the monetary base will be contracted as soon as the zero bound is no longer binding. This credibility problem, and the associated inability of a central bank to increase inflation expectations, produces a “deflation bias.” The paper suggests several policies to solve this credibility problem, such as printing money and buying foreign exchange, and engaging in deficit spending. These policies credibly increase inflation expectations because they give the government an incentive to inflate in the future.

Jeane and Svensson (2004) explore the same credibility problem but assume that the central bank is an independent identity. They find that printing money and buying foreign exchange can also solve the credibility problem as long as the central bank seeks to avoid capital losses. In this case, a successful intervention in the foreign exchange market, along with the appropriate manipulation of the central bank’s balance sheet, leads to a depreciation and a corresponding increase in inflation expectations.

Ramawamy and Samiei (2003), from an empirical standpoint, look at the effectiveness of foreign interventions in Japan between 1995 and 1999, when the interest rate was close to zero. During this period, on several occasions, the Japanese government tried to intervene in the foreign exchange market in response to deflationary risks. The authors find evidence that exchange rate interventions were successful over this period to depreciate the yen (and to strengthen it when the authorities wished so).

The classic solution to the credibility problems discussed above is a rule-based policy, à la Kydland and Prescott (1977). In this spirit, Hunt and Laxton (2003) support the introduction of a price-level-targeting rule to stabilize the economy when the zero bound is binding. They find that such a rule has useful properties in a liquidity trap. Indeed, by allowing a central bank to credibly commit to a price-level target, any deflation is going to be associated with expectations of future inflation. Since higher inflation expectations are the way to reduce the real interest rate, the rule will be effective in boosting demand when the zero bound is binding.

Hunt and Laxton (2003) also explore the effectiveness of expansionary fiscal policy in periods in which the zero bound is binding and find that such a policy can largely eliminate output losses. Eggertsson and Woodford (forthcoming) come to a similar conclusion but consider the use of distortionary taxes as a policy instrument instead. On the empirical front, Kalra (2003) studies the effectiveness of fiscal policy in Japan from 1960 to 2000. Using a structural vector auto regression framework, he finds that short-term fiscal multipliers have remained relatively stable over the past years although they have declined over longer horizons.

The problem of excessive deflation has not been isolated to Japan. During the past several years, Hong Kong SAR has experienced deflation as well. N'Diaye (2003) and Schellekens (2003) study the experience of Hong Kong SAR with deflation. Both authors find that the main culprits have been cyclical shocks amplified by balance sheet and wealth effects. N'Diaye (2003) uses a structural vector error correction modeling approach, while Schellekens (2003) looks at the price dynamics between Hong Kong SAR and Shenzhen, a neighboring city in mainland China. Kumar and others (2003) study the danger of deflation throughout the world, with a comprehensive review of earlier work and several new findings. They find that the danger of deflation in the United States is fairly small, but it is higher in countries such as Japan, Hong Kong SAR, Taiwan, and Germany.

Finally, Baig (2003) looks at deflationary episodes in Sweden and the United States in the 1930s and, from such a historical perspective, argues for more aggressive and sustained quantitative easing than what has so far been undertaken by the Bank of Japan.

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Linking poverty reduction to macroeconomic performance, Epaulard (2003) looks at how poverty has been affected in a number of boom and bust episodes in developing and transition economies. She shows that the elasticity of poverty reduction to growth (i.e., by how much a percentage increase in growth will translate into a percentage increase in poverty reduction) depends on the initial levels of both per capita income and income inequality. The higher the average income level, the higher the elasticity; and the higher the inequality, the lower the elasticity. The paper also finds the poverty response to growth to be symmetric across positive and negative macroeconomic shocks. Ghura, Leite, and Tsangarides (2002) also show that though growth is important for poverty reduction, the income of the poor does not rise one to one with per capita income. In addition to growth, macroeconomic policies, especially those aiming at lowering inflation, deepening the financial sector, and raising educational achievements, are important in reducing poverty.

The link between macroeconomic policies and poverty is further explored by Cashin and others (2001). Looking at the changes in the United Nations Development Program’s Human Development Index (HDI) between 1975 and 1998 in a large sample of developing countries, the paper shows that a macroeconomic environment leading to low and stable inflation, low budget deficits, low levels of external debt, openness to trade, rule of law, and higher education levels seems to be associated with greater improvements in HDI. However, the paper could not conclusively relate improvements in HDI with changes in specific macroeconomic policies. Berg and Krueger (2003) survey the literature that links trade policies to growth and poverty. They show that an increase in openness is an important contributor to growth, and that trade-led growth does not systematically worsen the income distribution. Combining these two propositions, they argue that trade openness would likely reduce poverty through its impact on growth.

Looking at the link between financial development and poverty alleviation, Holden and Prokopenko (2001) conclude that while financial development can contribute to poverty alleviation through the promotion of growth, two necessary conditions for the development of the financial sector are macroeconomic stability and strong institutions, particularly those concerned with the guarantee of property rights. Looking at the role of institutions, and indexing the quality of institutions through an indicator of corruption, Gupta, Davoodi, and Alonso-Terme (1998), using cross-country regressions, show that corruption increases income inequality and poverty through lower growth, lower social spending, poor targeting of social programs, biased tax systems, and increased inequality. One implication of the analysis is that policies that reduce corruption will also lower income inequality and poverty.

How is poverty affected during financial crises? Using cross-country and household survey data for Mexico during the 1994 crisis, Baldacci, De Mello, and Inchauste (2002) show that financial crises in developing and transition economies are associated with an increase in poverty and income inequality. They also show that, as expected, the provision of targeted safety nets and the protection of specific social programs from fiscal retrenchment can be pro-poor during financial crises. Loko, Nallori, and Kalonji (2003) analyze the link between external indebtedness and poverty in low-income countries. They show that the external debt has a small but significant effect on human development.
indicators, such as life expectancy, infant mortality, and primary school enrollment. To explain this finding, they suggest that high debt servicing crowds out government's social spending, and is therefore associated with a worse outcome in terms of HDIs.

Shedding light on the debate on poverty numbers in India, Aziz (2002) looks at state-level data for India in 1978–97 and shows that, while overall poverty declined, it increased somewhat during the early years of the 1990s reform period. He also shows that the states with higher growth and lower inflation have experienced faster reduction in poverty. In another case study, Thomas and Canagarajah (2002) look at the dynamics of poverty in Nigeria between 1985 and 1992 and examine the impact of macroeconomic policies on economic growth and welfare. Their main finding is that the decline in poverty during this period can be attributed mostly to the growth of the economy, rather than to changes in the income distribution.

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