Food or Commodity Price Shocks and Inflation: A Central Banker's Perspective

Food and Water — Basic Challenges to International Stability

2009 Global Conference Series (Part 4)

Presented by the Global Interdependence Center (GIC) in partnership with

the University of Chicago Booth School of Business

Singapore

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Introduction

I am pleased to be here at the Asia Campus of the University of Chicago Booth School of Business as we continue this important series on food, water, and international stability. I helped open the first conference in this Global Interdependence Center series 10 months ago at the Federal Reserve Bank of Philadelphia, and I have been pleased to see the interest in the series' programs as they have continued around the world.

Today I will offer you a central banker's perspective on the challenges that large swings in food prices or other relative prices pose for monetary policy.

Keep in mind that before the global economic recession and financial crisis began to dominate our attention, much of the world faced substantial increases in food and energy prices in 2007 and early 2008. These price shocks caused volatility and posed risks to stability in a number of countries. The general decline in economic activity and global trade as the financial crisis spread around the world led to plunging prices for oil and other commodities in the second half of 2008 before rebounding somewhat during 2009.

The volatility of food and energy prices has posed — and will continue to pose — challenges for central bankers, whether they are in large industrialized economies or in small emerging economies. I will discuss three approaches central bankers can take to protect their credibility to control inflation in the face of these price shocks. I want to preface my remarks, however, by commenting on several important trends among central banks, including the efforts to conduct monetary policy in a more systematic and transparent manner.

Some Trends in Central Banking

During the last three decades, many central banks around the world have adapted to advances in the science of monetary policy. We have learned much from the experiences of those central banks that were early adopters of these advances. One theme that has emerged from this mix of academic research and experience is the important role played by the public's and market participants' expectations regarding policy actions.

Uncertainty regarding policymakers' goals and the actions they will take to achieve them can make it more difficult to achieve those goals. Moreover, this uncertainty introduces unnecessary volatility into economic outcomes.

In recognition of the importance of expectations, one trend has been the more or less continuous movement of central banks toward more transparency. That has certainly been true for the U.S., where the Federal Reserve now provides much more information about its policy actions and its reasoning. For example, the Fed did not begin announcing its interest rate decisions until 1994, and the statement released with the announcement has gradually become more informative about the Federal Open Market Committee's views. Many other developed economies and emerging economies have also moved toward greater transparency.

In conjunction with the movement toward more transparency and the desire to align the public's expectations with monetary policy, there is a trend toward central banks publicly announcing their long-term objectives. Many central banks, including a number in East Asia, have adopted a stated goal to keep inflation low and stable. How central banks seek to accomplish that goal, though, does vary.[1] Some countries — including the United States and Singapore — have adopted general goals about seeking price stability without adopting explicit inflation targets. Other countries, starting with New Zealand 20 years ago, have adopted explicit inflation targeting as a mechanism to demonstrate their commitment to low and stable inflation. Today, more than 20 countries around the world have an explicit inflation target, including four in Asia: South Korea, Thailand, Indonesia, and the Philippines.[2] So far, no country that adopted inflation targeting has chosen to abandon it.

Inflation targeting serves as a public commitment by the central bank to a clear and explicit monetary goal. It does not necessarily describe how the central bank will achieve its goal. My view — and the view of many other economists — is that central banks and the economies they serve would benefit from the adoption of simple rules or guidelines that describe how policy would react to events.[3] One broad class of rules is called Taylor rules because they follow the work of John Taylor.[4] Because rule-like behavior by policymakers reduces uncertainty about their actions, it can foster a more stable economic environment. The failure of a central bank to maintain its credibility or reputation to achieve low and stable inflation can contribute to increased economic volatility and instability.

Another emerging trend has been the greater use of a short-term interest rate as the primary instrument of monetary policy and a decline in the number of countries pegging their exchange rate to another country's currency bilaterally. Currency crises in countries all around the world have highlighted some of the challenges of such bilateral pegs and the conflicts that arise when domestic policies are pursued that are inconsistent with such

[1] See, for example, McCauley (2001).
[2] See Dotsey (2006); and Walsh (2009).
[3] For more on the benefits of systematic policy, see Plosser (2008).
[4] See Taylor (1993).

regimes. As a consequence, many countries now have floating exchange rates, or they peg their exchange rates to a basket of currencies rather a single currency.

Another trend that I want to emphasize has been the movement toward greater independence of central banks. Independence has contributed to the ability of central banks to promote greater economic stability and lower inflation rates. It has done so because it has enabled monetary policy to take an intermediate- to long-term view without the fear or interference of short-term political concerns. Indeed, some may be surprised to learn that the Bank of England, founded in 1694 and nationalized in 1946, did not regain its monetary policy independence from the treasury until 1997. In general, those countries whose central banks become agents for a nation's fiscal policy risk much higher rates of inflation and more pronounced economic instability.

A theme of this conference is the challenges to domestic and international stability of large movements in the relative prices of food, water, and other important commodities. I want to touch on one piece of this complex challenge: the role of a central bank and what it can contribute. In my remarks today, I want to stress that by focusing on price stability and their credibility to maintain it, central banks can make an important and unique contribution to ensuring financial stability and sustainable economic growth.

Food Price Shocks, Credibility, and Expectations

Large swings in food or other commodity prices can have important ramifications for central bankers and their ability to maintain a credible commitment to achieve price stability.

Sharp changes in food or other commodity prices typically reflect a change in the relative price of food or commodities and not a change in the general level of prices, which is the focus of economists' definition of inflation (or deflation). Nevertheless, these relative price changes can substantially affect a country's consumer price index — either when the basic commodities, such as food or energy, are included in the index or when persistent changes influence the prices of other goods and services. Consequently, central bankers find it difficult to ignore the impact of changes in food or commodity prices because they can affect measured inflation.

One reason this is so difficult to ignore is simply credibility. When central banks publicly state their goal to keep inflation low and stable, and then the public sees large changes in consumer price indexes, the lack of consistency can harm the credibility of the central bank. A large relative price shock has the potential to undermine public confidence in the central bank's ability to keep inflation low and controlled, which in turn could lead people to alter their expectations of future inflation.

We saw during 2007 and early 2008 that while rising energy and food price shocks hit most countries, these price shocks were particularly severe for small, open economies

that were net importers of food and energy, and for emerging market countries in general.[5]

Food price shocks pose greater challenges to central banks in emerging market economies, because food typically makes up a larger share of consumer spending than it does in industrialized economies. For example, in many emerging market countries in Asia, food accounts for 30 to nearly 50 percent of the consumption basket. In contrast, food accounts for about 14 percent of South Korea's consumer price index, which is similar to the U.S., the U.K., and the Euro area. In Singapore, food's weight is about 25 percent.

Food Prices and Measures of Inflation

How have countries responded to the impact of food prices on their consumer price indexes? One approach that some countries have taken is to reduce the price volatility of certain key food items by using subsidies or price controls. These approaches have been used to some extent even in countries that set explicit inflation targets, such as Thailand, the Philippines, and Indonesia. These price controls and subsidies are generally the province of fiscal policy, and their use may at times distort assessments of how well the central bank is achieving its monetary policy goal of low and stable inflation. Moreover, such policies distort markets and, over time, could prove detrimental to the health and stability of the economy.

Another approach has been to focus on various measures of core inflation that may exclude food and energy, rather than total, or headline, inflation. For instance, Indonesia and the Philippines target headline measures of inflation, while Thailand sets an inflation target using a core measure of inflation.[6] South Korea has switched between targeting core and headline inflation since it began inflation targeting in 1998, but now uses headline inflation.

While a core inflation measure allows a central bank to de-emphasize the effects of large temporary swings in the relative price of food, the risk for policymakers is that such swings could persist and result in second-round effects on other prices or could increase inflation expectations. Ignoring these pressures may lead the central bank to fail to make the adjustment necessary to prevent overall inflation.

In my view, it is more important that central banks focus on <u>some</u> measure of inflation in conducting monetary policy and less important whether that measure is headline inflation or core inflation. Over time, the trends in headline inflation and core inflation in most countries tend to move together. Also, an average inflation rate over a two- or three-year period will be less subject to food price volatility than an average over a one-year period. Consequently, policymakers could choose either inflation measure in setting a medium-term policy goal. For me, the key issue is that central banks seek to achieve a relatively stable price level, rather than the measure they choose.

[5] See Habermeier, et al. (2009).
[6] See McCauley (2007).

Three Approaches to Protect Credibility

Since large relative price shocks have the potential to undermine public confidence in the central bank's commitment to the goal of price stability, how can central bankers deal with this risk to their credibility? There are three approaches central banks have taken to protect their credibility in the face of food price or other commodity price shocks: build a reputation, commit to a stated goal, or establish rule-like policymaking. These are, of course, closely tied to my introductory remarks about the trends in central banking.

Some central banks gain reputations for keeping inflation low and stable. This takes time and perseverance and usually occurs after painful bouts of high inflation. That was the case for the Federal Reserve in the U.S. after the so-called "Great Inflation" of the 1970s and early 1980s. Double-digit inflation led the Federal Reserve to engage in a long-term process of disinflation. By the early 1990s, the Fed had earned a reputation for maintaining a low and stable rate of inflation. Even so, the Fed also had to act promptly and preemptively against the emergence of several inflationary "scares" in the late 1980s and early 1990s in order to secure and preserve its reputation and credibility for keeping inflation low.[7]

Other countries have similarly earned reputations for being committed to keeping inflation low. Such reputations can help avoid shifts in the public's expectations of inflation when food price shocks temporarily increase consumer prices.

Committing to a stated goal to keep inflation low and stable can also help a central bank protect its credibility when food price shocks occur. This is true whether the central bank has set a general goal of price stability or an explicit inflation target. Indeed, there is some evidence that countries that have adopted inflation targeting have better anchored inflation expectations than countries that have not adopted such targeting.[8] In emerging markets, inflation targeting is found to reduce the level and volatility of inflation expectations, while simultaneously lowering the overall rate of inflation.[9]

More importantly in light of the current financial crisis and the concerns expressed in some countries, including the U.S., about deflation, establishing an inflation target would help prevent expectations of *deflation* from materializing. Thus, a credible inflation target has the benefit of minimizing the volatility stemming from unanchored inflation expectations to either the upside or the downside.

One advantage of an inflation target is that it usually requires the central banks to explain deviations from the target and a time path for returning inflation to the target. Sometimes, acceptable reasons for the departures are spelled out in advance. New Zealand's Policy Targeting Agreement, for instance, specified a number of situations in

[7] For a discussion of such episodes in the U.S., see Goodfriend (1993).
[8] See Batini, et al. (2005), p. 171; Gürkaynak, et al. (2006); Dotsey, (2006), p. 18; and Walsh (2009), pp. 14-15.
[9] See Batini, et al. (2005), p. 171-72 and Table 4.6.

which temporary deviations from price stability might be warranted, including several factors that would affect food prices.[10]

Other countries have also stated reasons as to why the actual inflation rate might deviate from the central bank's inflation target. For example, the British government's instructions to the Bank of England recognized that shocks and disturbances could lead to short-term departures from the target. Among those countries in Asia that have chosen to target inflation explicitly, the Philippines has a list of acceptable circumstances for failing to achieve the inflation target, including the volatility of agricultural products.[11]

These examples make clear that inflation-targeting central banks can at times use specific allowances to explain why actual inflation may temporarily deviate from the desired inflation target. But central bankers must be careful not to create so many exceptions as to undermine the whole purpose of inflation targeting, which is to reinforce the credibility of the central bank's commitment to achieving its monetary policy goals.

Systematic Monetary Policy and Rule-Like Policymaking

We have already discussed the first two means by which central banks can protect its credibility when food price shocks occur: building a reputation for maintaining a low and stable rate of inflation, and establishing an explicit goal such as adopting an inflation target. A third related approach is to establish systematic, rule-like policymaking.

By systematic, I mean a policy that is consistent, transparent, and predictable. This approach allows households and businesses to more accurately form expectations and therefore make better decisions. Systematic, rule-like policy leads to a more stable, predictable, and efficient economy. Systematic approaches can also help a central bank deal with temporary food price shocks.

John Taylor described the most well-known form of systematic monetary policy when he explored how the Federal Reserve should set its federal funds rate target.[12] While U.S. monetary policy was the initial focus of his work, there are many variations of Taylor's rules, which all share the vital characteristic that they systematically describe the behavior of policy. In particular, these rules typically indicate that policy should respond aggressively to deviations of inflation from its target and respond to some measure of resource utilization in a more muted manner. These simple Taylor-like rules have the advantage of making it easier for the public and financial markets to form expectations about policy and can therefore contribute to a more stable and efficiently functioning economy.

Some analysts have described the monetary policy of the Monetary Authority of Singapore as using a Taylor-like rule, with the exchange rate as the policy instrument,

[10] See Walsh (2009), p. 20.
[11] See Central Bank of the Philippines, 2008, p. iv.
[12] See Taylor (1993).

instead of a short-term interest rate.[13] Although this Singapore variation differs from the usual Taylor rule, it nonetheless has some similarities to a rule-like, systematic approach to monetary policy.

Experience with Inflation Targeting

As I noted earlier, price shocks from food and other commodities pose a risk to the credibility of the central bank's commitment to low and stable inflation and can therefore alter the public's expectations of future inflation. Anchoring these expectations is very important for ensuring price stability in all economies, both emerging and industrialized ones. However, because relative price shocks generally have larger effects on measured inflation in emerging market economies, those countries may have more to gain from adopting policy approaches — such as inflation targeting — that better anchor inflation expectations.

The broad conclusion from a number of studies is that inflation targeting in emerging market countries has resulted in lower inflation, lower volatility of inflation, less persistence of inflation, and a better anchoring of inflation expectations. Just as importantly, and despite claims to the contrary, inflation-targeting countries have not experienced adverse consequences for real output or employment.[14]

Evidence from industrialized countries also indicates that inflation expectations are better anchored in those countries that have adopted inflation targeting.[15] Consequently, all countries that adopt inflation targeting have greater protection from the adverse effects of large relative price shocks to food, energy, or other commodities. What's more, this anchoring of inflation expectations helps maintain the credibility of the central bank's commitment to inflation targeting.

It is also important to acknowledge that for emerging economies, large swings in relative prices, particularly food and energy, can have detrimental effects on an economy and its citizens. It is generally a mistake, however, to view monetary policy as a tool to mitigate those effects directly. Movements in relative prices drive resource allocations, and one cannot and should not think of monetary policy as a tool to prevent those sometimes painful adjustments.

Conclusion

In conclusion, let me stress that pursuing sound monetary policy is fundamentally important to ensuring international financial stability. In the midst of the current financial crisis, we must remember that instability in the general level of prices — whether inflation or deflation — is itself a significant source of financial instability.

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[13] See McCauley (2001), pp. 14-15; and Parrado (2004).

[14] For a recent overview of evidence on inflation targeting, see Walsh (2009). Also see Lin and Ye (2009); Gonçalvas and Salles (2008); Batini, et al. (2005); Varella Mollick, et al. (2008); and Vega and Winkelried (2005).

[15] See Walsh (2009), p. 17; and Gürkaynak, et al. (2006).

Consequently, central banks around the world should ensure that they fulfill their unique responsibility to ensure price stability. Failure to ensure price stability, in my view, would certainly pose a major risk to international stability.

Large relative price shocks to food and energy pose problems for central banks because they can alter expectations of inflation and undermine the credibility of central banks' commitment to price stability.

To promote price stability, ensure credibility, and anchor expectations, central bankers should pursue systematic monetary policies. Such systematic policies should be consistent, transparent, and largely predictable. Central banks should communicate clearly about their policy goals, about the reasons for near-term deviations from those goals — such as the impact of food price shocks on measured inflation — and about the policy actions they are taking over a medium-term horizon to keep inflation low.

I have found it encouraging that, despite large swings in food and energy prices in recent years, inflation expectations in most countries have remained quite well anchored. I believe that the stability of inflation expectations in the face of wide swings in measured inflation reflects the benefits of a more systematic and transparent approach to monetary policy that many central banks have adopted. Such policies, as well as the adoption of explicit inflation targeting in more than 20 countries, have bolstered the credibility of central banks' commitment to price stability. I believe that credible monetary policy also better positions a central bank to contain the risk that food or energy price shocks will alter inflation expectations or inflation itself.

REFERENCES

Batini, Nicoletta, Kenneth Kuttner, and Douglas Laxton. "Does Inflation Targeting Work in Emerging Markets?" International Monetary Fund, World Economic Outlook, Chapter IV (September 2005), p.171.

Central Bank of the Philippines. *Inflation Report.* Central Bank of the Philippines (Fourth Quarter 2008), p. iv.

Dotsey, Michael. "A Review of Inflation Targeting in Developed Countries," Federal Reserve Bank of Philadelphia *Business Review* (Third Quarter 2006), pp. 10-20.

Gonçalvas, C.E.S., and J. M. Salles. "Inflation Targeting in Emerging Economies: What Do the Data Say?" *Journal of Development Economics*, 85:1 (2008), pp. 312-18.

Goodfriend, Marvin. "Interest Rate Policy and the Inflation Scare Problem: 1979-1992," Federal Reserve Bank of Richmond *Economic Quarterly* (Winter 1993), pp. 1-23.

Gürkaynak, Refet S., Andrew T. Levin, and Eric T. Swanson. "Does Inflation Targeting Anchor Long-Run Inflation Expectations? Evidence from Long-Term Bond Yields in the U.S., U.K., and Sweden," Federal Reserve Bank of San Francisco Working Paper 2006-09 (2006).

Habermeier, Karl, İnci Ötker-Robe, Luis Jacome, Alessandro Giustiniani, Kotaro Ishi, David Vávra, Turgut Kışınbay, and Francisco Vazquez. "Inflation Pressures and Monetary Policy Options in Emerging and Developing Countries: A Cross Regional Perspective" International Monetary Fund Working Paper 09/1 (January 2009).

Lin, Shu, and Haichun Ye. "Does Inflation Targeting Make a Difference in Developing Countries?" *Journal of Development Economics*, 89:1 (May 2009), pp. 118-23.

McCauley, Robert Neil. "Core Versus Headline Inflation Targeting in Thailand," paper prepared for "Challenges to Inflation Targeting in Emerging Countries," Bank of Thailand, Bangkok, November 13-14, 2006 (March 2007).

McCauley, Robert Neil. "Setting Monetary Policy in East Asia: Goals, Developments and Institutions," in *Future Directions for Monetary Policies in East Asia.* Sydney: Reserve Bank of Australia, 2001, pp. 7-55.

Parrado, Eric. "Singapore's Unique Monetary Policy: How Does It Work?" Staff Paper No. 31, Monetary Authority of Singapore (June 2004).

Plosser, Charles. "The Benefits of Systematic Monetary Policy," speech given to the National Association for Business Economics, Washington Economic Policy Conference, Washington, D.C. (March 3, 2008).

Taylor, John B. "Discretion Versus Policy Rules in Practice," Carnegie-Rochester Conference Series on Public Policy 39 (1993), pp. 195-214.

Varella Mollick, Andre, Rene Cabral Torres, and Francisco G. Carneiro. "Does Inflation Targeting Matter for Output Growth? Evidence from Industrial and Emerging Economies," World Bank Policy Research Working Paper 4791 (December 2008), p. 15.

Vega, Marco, and Diego Winkelried. "Inflation Targeting and Inflation Behavior: A Successful Story," *International Journal of Central Banking*, 1:3 (December 2005), pp. 153-75.

Walsh, Carl E. "Inflation Targeting: What Have We Learned?" The John Kuszczak Memorial Lecture, prepared for "International Experience with the Conduct of Monetary Policy under Inflation Targeting," Bank of Canada, July 22-23, 2008 (January 2009).