Introduction to EASE 15:
Monetary Policy under Very Low Inflation Rates

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Revised: September 13, 2004

This volume contains papers from the fifteenth annual *East Asian Seminar on Economics.* EASE 15 was held in Tokyo, Japan on June 25-27. The local sponsor was the Tokyo Center for Economic Research (TCER), and we also gratefully acknowledge support from Academy Hills and the Center for Global Partnership (CGP), which is part of the Japan Foundation.

EASE-15 was organized around the topic of "Monetary Policy under Very Low Inflation Rates." Until about a decade ago, this would have seemed to be an issue of only academic – meaning negligible – interest. However, the advent of extremely low inflation since the late 1990s has brought this macroeconomic issue to the forefront of policy discussions. As usual, academic interest has responded to this demand with a lag. Academic interest in the area is particularly high in Asia, for a number of reasons.

First and foremost, a number of important Asian countries have experienced deflation in the last fifteen years. Japan is perhaps the most prominent of these countries, but mainland China, Taiwan, and Hong Kong amongst others have also experienced negative inflation rates. Some of these episodes are the result of fast growth on the supply side of the economy, some of which have been prompted by information and technological innovations. But inadequate aggregate demand policy can produce what is commonly referred to as a "liquidity trap" where the expectation of falling prices encourages agents to defer costly purchases, thereby discouraging growth. Second, monetary policy has been affected by the presence of a "zero-lower bound" (ZLB) on interest rates. A decade ago the ZLB might have been treated as a theoretical curiosum, but in the intervening period it has become a binding constraint. Third, inflation has fallen globally since the early 1990s, in large part as a result of newly independent central banks implementing explicit inflation targets strategies. Most of these policies have been successful, so that inflation rates above 3% are now rare in advanced (and an increasing number of developing) countries. But inflation targets have been set low; perhaps so low that a few bad shocks can lead to the threat of deflation. For all these reasons, monetary policy in environments of very low inflation is a topic of great interest.

While most of the literature shared a domestic focus, certain international aspects of the topic are also relevant. For instance, a number of economists such as Lars Svensson have advocated the use of exchange rate policy during periods of deflation. Such policies resemble "beggar thy neighbor" devaluations and are therefore worthy of scrutiny (which economists like Svensson have supplied). Since monetary policy is first and foremost a domestic concern, the focus of EASE15 was domestic. Nevertheless, the first paper in the volume relies on the international dimension of problem. McCallum is concerned with developing a monetary policy rule which helps the authorities to avoid

deflation altogether. (This focus differs sharply from much of the recent literature which is oriented towards designing mechanisms to allow economies which are already in a liquidity trap to escape deflation in the presence of a ZLB.) McCallum's rule is based on a mainstream model and is simplicity itself. Monetary authorities in much of the world use the short interest rate as an instrument of monetary policy. McCallum argues that simply using a weighted average of the interest rate and the depreciation rate (with a small weight on the latter) provides a considerable amount of extra stabilization. Further study of the issue is warranted since his proposal bears a similarity to the much-denigrated "monetary conditions index" which has been almost universally derided of late. Still, his proposal is attractive since the presence of the exchange rate as a guide for monetary policy would be minimal except in the extreme circumstance of a ZLB. As such, his rule is worthy of serious study.

The second paper in the volume is also concerned with instruments and strategies for monetary policy. Hur's focus is more novel than McCallum's, since he focuses on an uncommon target for the monetary authorities, namely the term structure of interest rates. This topic has been unfashionable since the American authorities in the 1960s tried unsuccessfully to raise short-term interest rates (to attract capital inflows) while simultaneously lowering long-term term rates (to stimulate investment) in "Operation Twist." The Bank of Japan has, since 2001, adopted a zero short-term interest rate policy, wih an intention of policy duration effects — the continuation of the zero interest rate for a long time. This is intended to emphasize and influence long run expectations of the interest rate, thus flattening the yield curve. Hur develops an optimizing model to account for the impact of monetary policy on consumption and investment decisions at different horizons. But he takes the analysis a step further by taking a version of the model to American data to check the implications of his model. His empirics are not completely persuasive: the link between the theory and the empirical model is imperfect, the model itself is simple and relies on *ad hoc* lags, and the results are not particularly strong. Still we expect this to be a fertile area for future work.

Three of the EASE-15 papers were specifically focused on the interaction between monetary policy and asset prices. The most general of these is by Robinson and Stone. They build on previous work which has recognized the fact that bubbles in asset prices present a tradeoff for the monetary authorities. On the one hand, asset bubbles (such as the technology bubble of the 1990s that so dramatically affected the NASDAQ) tend to both cause and predict inflation, leading central bankers to lean in the direction of tightening policy at times of bubbles. On the other hand, bubbles tend to collapse, leaving recessionary pressures in their wake. Since monetary policy takes effect only with a lag, a sensible central banker expecting an asset price crash might want to start loosening monetary policy in advance of the actual crash, so as to minimize the deflationary fallout from a meltdown. These countervailing forces are analyzed by Robinson and Stone; the innovation here is to explicitly recognize the complications that a low-inflation environment throws off in the form of a ZLB. Unfortunately their careful analysis delivers only weak results, since they find the offsetting effects of asset prices to be so finely balanced that small reasonable perturbations in the characteristics of the

model lead to different results. Alternatively expressed, only unusually confident central bankers should pay much attention to asset prices.

The attention of Robinson and Stone is the interactions between the macroeconomy and asset prices in some abstract market. The next two papers are also concerned with asset prices and the macroeconomy, but are both highly empirical with a higher level of focus. Choi and Cook are concerned with the Japanese stock market, while Cho is interested in the Korean housing market. These are the two most important asset markets for two of the most important economies in East Asia, providing us with a highly complementary set of papers.

Choi and Cook are interested in the effects of stock market liquidity. They use a now-conventional technique to measure the liquidity of individual stocks traded on Japanese equity markets. They use a methodology developed by Pastor and Stambaugh, but are primarily concerned with the results of low liquidity at both the firm level and, more interestingly, for the economy as a whole. They use the conventional macro-econometric VAR technique and show that negative shocks to liquidity result in significant downturns in the macroeconomy, lowering growth, investment, employment, and inflation.

Cho discusses the effect of a Korean housing institution mechanism known as *chonsei*. A chonsei is essentially an interest-free loan made from a renter to a landlord for a period of two years. The ratio of chonsei to housing prices is thus determined by economic factors such as inflation and interest rates. Thus, monetary policy has a strong effect on the chonsei/housing price ratio, and the resulting implicit wealth transfers. Cho analyzes the determinants of chonsei prices using a simple theoretical model. He finds that chonsei may lead the central bank to conduct looser less aggressive monetary policy in order to minimize costly chonsei price volatility. Although housing prices are an important variable in the analysis of asset prices, high-quality data are hard to come by. True housing prices have to be estimated using the hedonic regressions, in order to adjust for difference in locations (convenience), floor space, the age of the building, among other amenities. The analysis by Cho needs to be qualified by the lack of true housing prices in Korea.

Japan is not only the second-largest economy in the world, but also the country that has been most obviously and importantly affected by deflation, the ZLB, and the liquidity trap. Accordingly, it is natural and appropriate that four EASE-15 papers are concerned with Japanese monetary policy. We present them in order from the broadest and most backward-looking historical summary to the most abstract and forward-looking hypothetical experiment.

Ito and Mishkin provide a long comprehensive survey of Japanese monetary policy over the last two decades (though their focus, along with that of the others, is on the deflationary experience of the last decade). Ito and Mishkin provide a comprehensive history of monetary policy. While they pay attention to fiscal policy, they are especially and appropriately interested in monetary policy. While the collapse in asset prices

(especially stock and housing market) since 1990 helped to precipitate the crisis, it has been the ineffective efforts of the Bank of Japan (BoJ) to reflate the economy that are mostly criticized for recent slow Japanese growth. Ito and Mishkin are thus highly critical of numerous aspects of BoJ policy.

The critical approach is shared by Iwamura, Kudo and Watanabe, who are also interested in Japanese policy but over a shorter period of time. Iwamura et. al. use both theoretical and empirical tools to analyze Japanese macroeconomic stabilization over the past five years. They are even more critical of the Japanese authorities, since their evidence indicates that bond market participants did not expect monetary policy to remain loose, undermining the efficacy of official BoJ policy of later. But they also direct some of their fire towards the fiscal authorities. Loose fiscal policy is the standard "Keynesian" policy recommendation during a period of deflation. Indeed, that is the textbook prescription when an economy is affected by the ZLB and liquidity trap. There is a critical caveat though; "Ricardian Equivalence" must not hold. Since government bonds represent discounted claims to expected future taxes, consumers can, in principle, treat government bonds as equal and offsetting claims and liabilities. When Iwamura et. al. test for Ricardian equivalence, they find the standard result, namely that it has limited empirical relevance. Accordingly, they allocate shared responsibility for slow Japanese growth and the continuing deflation to the monetary and fiscal authorities.

Fukao's interest is also monetary in nature, but his focus is more on determining the causes of the Japanese deflation. Using a Phillips curve equation that links inflation and output, Fukao decomposes the slow-down into its ultimate causes. While the growth in productivity has not been trivial, Fukao's analysis attributes most of the slowdown to a financial crisis in Japanese banking which results from non-performing loans. He also quantifies the considerable fiscal strains that the slowdown has caused for the governments budget, and produces fascinating (if terrifying) Japanese budget forecasts.

Like Iwamura et. al., Ball is also interested in the interaction between monetary and fiscal policy for Japan. He adopts a hybrid methodological approach, taking calibrating and simulating a simple new Keynesian macroeconomic model. Starting from initial conditions similar to those actually prevailing for Japan, he shows that an expansionary fiscal policy completely financed by money creation could have favorable short-run effects for Japan. The "helicopter drops" of money are substantial but not unprecedented and are envisaged to take place over three years. He finds that such a policy could reflate Japanese macroeconomic growth and raise interest rates to positive levels without dire long-run fiscal consequences.

Yang and Shea attempt to differentiate supply and demand shocks to the Taiwan economy in pursuit of identifying the cause for deflation that hit the Taiwanese economy in the recent years. It is commonly understood that it is in general difficult to identify supply and demand factors at the macro level without making bold assumptions on the structure. This paper shares that limitation.

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Order of Papers:

1: Monetary Policy Strategies
1. A Monetary Policy Rule for Automatic Prevention of a Liquidity Trap (McCallum)
2. The Use of the Term Structure of Interest Rates as a Target of Monetary Policy in an Economy with Frictions (Hur)

2: Monetary Policy and Asset Prices
1. Monetary Policy, Asset-Price Bubbles, and the Zero Lower Bound (Robinson and Stone)
2. The Macroeconomic Effects of Stock Market Liquidity: Evidence from Japan (Choi and Cook)
3. Housing Prices and Monetary Policy when Interest Rates Decline (Cho)

3: The Japanese Experience
1. Monetary Policy During the Lost Decade (Ito and Mishkin)
2. Monetary and Fiscal Policy in a Liquidity Trap: The Japanese Experience 1999-2004 (Iwamura, Kudo, and Watanabe)
3. Financial Strains and the Zero Lower Bound: The Japanese Experience (Fukao)
4. Helicopter Drops for Japan (Ball)

4: The Taiwanese Experience
1. Deflation and Price Divergence in Taiwan (Yang and Shea)