

The price level and monetary policy*

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Most economists today believe that the fundamental duty of monetary authorities is to prevent inflation, either to stabilize the price level of the country, or to limit its upward movement to some low level, such as 2.5 or 2% per year, the target rates of the Bank of England and the European Central Bank at Frankfurt. In his *The Theory of Monetary Policy*, Jan Tinbergen said that a monetary authority should have as many weapons as it had targets.¹ With one target, therefore, there should be but one weapon, generally taken as the central bank's short-term interest rate, the federal funds overnight rate in the United States, set by the Federal Reserve System's Open-Market Committee, or the discount rate of the Bank of England. In this paper I propose first to discuss which among many price indexes the central bank should try to stabilize, and whether the chosen index should include asset prices; secondly, whether in a complex world one target and one weapon are sufficient for all or most circumstances.

Measurement of inflation requires a choice among many price indexes: including the Gross National Product Deflator, a cost-of-living index, consumer prices, retail prices, 'core indexes' which eliminate the most volatile products such as energy and food. In addition, there are complex questions whether residential costs belong in the cost-of-living index, and how these are measured, and whether asset prices belong in the general measures.² Targets may include, in addition to inflation, employment, growth, the balance of payments, ex-

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* I am deeply indebted for cogent comments by Peter L. Bernstein.

¹ Jan Tinbergen, *On the Theory of Economic Policy*, 2nd edition, North Holland, Amsterdam, 1965.

² See "The measure of inflation", a feature in the *Economic Journal*, vol. 111, no. 472 (June 2001) with four papers and an introduction, in particular two analytical papers by J.E. Triplett, "Should the cost-of-living index provide the conceptual framework for a consumer price index?", pp. 311-34, and C.A.E. Goodhart, "What weight should be given to asset prices in the measurement of inflation?", pp. 335-56.

change rate, and so on, some of them forerunners of inflation or deflation. With more targets, more weapons: manipulation of the money supply, of the exchange rate under fixed or flexible systems, controls on credit, capital requirements for banks, coordinated action by two or more central banks, and even 'moral suasion', or attempting to direct credit markets by speeches, testimony before legislative bodies, publications.

A number of these issues are addressed in the *Economic Journal* of June 2001, after having first been presented at a conference "The measurement of inflation" in Cardiff, Wales, on August 31 to September 1, 1999 before the peak of the New York Stock Market in December of that year, and the sharp downturns of 2000 and the first quarter of 2001. Charles Goodhart's paper "What weight should be given to asset prices in the measurement of inflation?" mentions "booms and busts" in the abstract, but they are not discussed in the text.³ Following an early contribution to the relevance of asset prices to the future course of prices in general by Armand Alchian and Benjamin Klein,⁴ he favors including asset prices in the general measure, but residential housing, and not the prices of company shares, despite the problems of representative measures, on the grounds that households spend 18.5% of their post-tax income on houses with mortgages in 1999 (presumably in Britain), whereas other financial saving of the household sector was only 5.5%.⁵ He shows, however, that the cost of living, consumer prices and retail prices often move in separate configurations from asset prices⁶ – an experience noted by Benjamin Strong, governor of the Federal Reserve Bank of New York in 1920s, by Paul Volcker, chairman of the Board of Governors, by the governor of the Bank of Japan in the late 1980s, and recently by Alan Greenspan, chairman of the Federal Reserve Board, presenting them with policy dilemmas when asset prices were booming and the prices of goods and services stable or even declining.⁷ The Alchian-Klein hypothesis that asset prices serve as a leading indicator of future prices

³ C.A.E. Goodhart, *op. cit.*, p. 335.

⁴ A. Alchian and B. Klein, "On a correct measure of inflation", *Journal of Money, Credit and Banking*, vol. 5, no. 1 (pt 1), February 1973, pp. 171-93.

⁵ C.A.E. Goodhart, *op. cit.*, p. 335.

⁶ *Ibidem*, charts 4 and 5.

⁷ C.P. Kindleberger, "Asset inflation and monetary policy", *BNL Quarterly Review*, vol. 48, no. 192, March 1995, pp. 17-37.

cannot be depended on when asset prices rise and fall sharply in bubbles that implode. A Bank for International Settlements study of asset prices, which groups the prices of housing, industrial and commercial building with company shares, makes no connection with indexes of current goods and services.⁸

Another essay in the *Economic Journal* symposium on inflation makes a strong case that the best measure is an index of the cost of living, and that it should include residential costs.⁹ Triplett's approach, however, varies from that of Goodhart in that it includes rents and the imputed rent of owner-occupied housing – taxes, maintenance, heat, utilities, mortgage interest and the imputed rent, presumably on buying prices since cost-of-living indexes for unchanged items are weighted by Laspeyre weights. Imputed rent is a concept taxed in many jurisdiction, to take account of the difference in income between two households in houses of identical value, one rented, the other owner-occupied.

Goodhart's paper offers a weak case for adding a house owner's notional capital gain or subtracting the loss when house prices are changing over a year to approximate his 'user cost'. He suggests that this cost might be approximated by notionally selling the house at the beginning of the period and buying it back at the end. He rejects this idea on the ground that in a period of rising prices, the owner would have notionally suffered a loss which makes no sense when his house is worth more.¹⁰ If one were to deal with variation in the value of a house at all, it would be more reasonable in my view to subtract the gain in price from imputed rent, or add the loss of wealth to the cost. Any use of price changes when the owner continues to occupy the house seems idle and probably impractical. If the wealth effect of changes in housing prices affects spending for goods and services, as some believe, these asset prices are already included to a modest degree in the general price level, albeit with a lag. Notional prices vary widely in accuracy depending on construction, location and accumulated depreciation. A well-know housing index published monthly in the *Boston Globe* ignores the average and the median of all house sales,

⁸ C.E.V. Borio, H. Kennedy and S.D. Prowse, "Exploring aggregate price fluctuations across countries: measurement, determinants and monetary policy implications", *BIS Economic Papers*, no. 40, April 1994.

⁹ J.E. Triplett, *op. cit.*, pp. 327-30.

¹⁰ C.A.E. Goodhart, *op. cit.*, p. 351.

but uses three-month averages of changes in prices for constructive sales of the same house for three classes, those up to \$ 185,000, those between \$ 185,000 and \$ 287,000 and those over \$ 287,000.¹¹ Starting with 100 in 1990, all three indexes sank to 85-90 in 1991, and then rose to 150-170 in 2001. Even this measure has problems, however, since it cannot take account of depreciation or improvements.

On this showing, there is little advantage that I can see in incorporating asset prices in a single index that monetary authorities are encouraged or ordered by political forces to stabilize. There are separate indexes for current prices of goods and services, GDP deflator, cost of living, retail prices, overall and 'core', each with a different use and usefulness, based on representativeness and timeliness of calculation, so there is a case for separate indexes of asset prices, overall, for shares, housing, land, industrial and commercial buildings, and with shares Standard and Poor 500, Dow Jones overall and industrial, transportation etc., Nasdaq, large cap, small cap, and for separate industries such as energy, pharmaceuticals, etc. Which of these would make the best leading indicator for inflation or future macroeconomic behavior I leave to statisticians, although I doubt the relationships would be stable.

In 1933 Homer Hoyt published a book which asserted that in Chicago real estate prices, both of land and buildings, including housing, followed share prices up in a cyclical boom, but behaved differently in a subsequent decline. On the rise, real-estate speculators followed those in shares in herd behavior, boosting up prices. When the stock market fell, however, speculators in real estate were unworried initially as they had real assets, rather than paper shares, and term loans instead of day-to-day brokers' loan. Unless the stock market recovered quickly, however, the speculators were ground down by slow sales, and continuing interest and property taxes.¹² This pattern was followed not only in Chicago over 100 years to 1933, as Hoyt demonstrated, but in the 1930s, after World War II in the late 1980s and early 1990s, and in Japan throughout the 1990s.

In the late 1990s in the United States, the model was not followed, especially in residential housing. House prices kept rising after

¹¹ *The Boston Globe*, Real Estate Section.

¹² H. Hoyt, *One Hundred Years of Land Values in Chicago: The Relationship of the Growth of Chicago to the Rise of Land Values*, University of Chicago Press, Chicago, 1933.

the sharp decline in technology stocks and the significant falls in the Dow Jones and Standard and Poor share indexes. The pattern that differed from the earlier one lacks a ready explanation. Several possibilities have been advanced. One rests on the considerable wealth accumulated by successful investors on technology stocks, who built new and expensive housing, or remodeled and enlarged existing residences on a grand scale, in either case acquiring what has been called derisively 'McMansions', which take longer to build than the average house. Another is the activities of US governmental entities in helping finance house building, both the Federal National Mortgage Association (known familiarly as 'Fannie Mae') and the Federal Home Loan Mortgage Association ('Freddie Mac'). These package home mortgages into securities and offer them insured in the United States capital market. The agencies own or insure 45% of US residential mortgages, and have been lobbying Congress to raise the limit for the mortgages they deal in from \$ 275,000 per house to \$ 412,000.¹³ Total mortgage debt in the United States has risen from \$ 3.4 trillion in 1995 to \$ 5.1 trillion in 2001, much of it in so-called 'equity loans', or additional mortgages on an existing house, as the market price of housing has risen, and the owner's equity, given the fixed original debt, has increased, often substantially. Part of the stimulus for higher housing prices was the fall in mortgage interest rates, owing to the competition from Fannies Mae and Freddie Mac plus the series of reductions in the federal-funds overnight rate undertaken by the Federal Reserve System after the decline in share prices in 2000 and 2001.¹⁴

While the Standard and Poor 500 share index fell by more than 15% in 2000 and the first half of 2001, the average price of existing houses has risen upward to almost the same extent. For the most expensive houses (over \$ 287,000 in 1990) in the Case-Shiller series, the rise was 21% in the same period, as read off a chart in the *Boston Globe*.¹⁵

Not everyone believes that the separate paths pursued by stock prices and those of housing will continue. The *Boston Globe* of July 28, 2001 notes that while house prices are still high, houses take longer

¹³ "Big scary monsters: mortgage-lending agencies in America", *The Economist*, July 28, 2001, pp. 59-60.

¹⁴ S. Syre and C. Stain, "Boston capital: shelter from storms: housing market", *The Boston Globe*, August 1, 2001, pp. C1 and C6.

¹⁵ See no. 2, issue of August 5, 2001.

to sell; in one Boston suburb, average days on the market doubled in two months from 42 to 86 days.¹⁶ Corporate downsizing of employees, especially in high-technology industries, are making it harder for laid-off employees to find new jobs, and even top corporate executives are beginning to be retired by boards of directors, though usually with a substantial 'golden parachute' or lump sum written into the original employment contract. The Levy Institute of Annandale-on-Hudson, New York state, associated with Bard College, published in its *Forecast* of July 20, 2001 an article by Mallika Ishwaren entitled "A bumpy road ahead for housing". She predicted that the peak for the housing market will prove to be the second quarter of 2001, observed that anecdotal evidence indicates that the prices of upper-end housing were beginning to fall, and, according to the Joint Center of Housing Studies of Harvard University, that subprime lending rose from 1% of both house purchases and refinancing in 1993 to 6% of purchase loans and 19% of refinancing in 1999. Falling mortgage rates, it is stated, will be more than offset as a stimulus to house sales by rising unemployment and falling income, plus the reversal in the wealth effect from the sharp decline in technology stocks. Approximately 20% of households with two earners, moreover, are now spending more than half their income on housing. It is not stated, but this number may include capital payments on existing mortgages, and fail to include imputed income on the equity of owner-occupied houses.

The inclusion of asset prices in the regular measure of inflation, as recommended by Alchian and Klein, and with some diffidence by Goodhart, was sought as an indication of the course of future prices. I have already suggested that asset prices as a leading indicator were dubious in a world of financial bubbles which in due course implode. A number of economists, especially Robert Shiller of Yale¹⁷ and Alfred Steinherr, General Manager of the European Investment Bank in Luxembourg,¹⁸ have recommended development of markets for futures and options in houses which could serve the same purpose, whether incorporated in a price index to measure inflation, or used separately as a leading indicator. Markets in futures already exist in commodities,

¹⁶ D. Bushnell, "Real estate agents fear boom market is busting", *Boston Globe*, Northwest supplement, August 5, 2001, quoting K. Case, Wellesley economist.

¹⁷ R. Shiller, *Macro Markets: Creating Institutions for Managing Society's Greatest Risks*, Oxford University Press, Oxford, 1993.

¹⁸ A. Steinherr, *Derivatives: The Wild Beast of Finance*, John Wiley & Sons, Chichester/New York, pp. 360-64, 1998.

share indexes and foreign exchange, though these are not always dependable tools.

A future market in residential housing has been tried experimentally in 1991 in the London Futures and Options Exchange, but closed down after a few months of low volume; only 7% of trades were found to be genuine, as opposed to fictitious ones entered into by the Exchange to provide the appearance of volume.¹⁹ Steinherr produces reasons why residential real estate, and *a fortiori* that in industrial and commercial buildings, do not lend themselves to future markets: low turnover, unique price data and high transaction costs in brokers' commissions, but still favors future markets in residential housing. In my judgment, the bulk of housing is bought for living in without the intention of speculation. Some owners leaving a community for a new job, or prospective buyers changing jobs and location or needing bigger or smaller housing might want to buy or sell for future delivery. Most would want a particular location, a house of a certain size, and judged suitable, after a close inspection, and not just a contract that someone would provide living space. Futures lend themselves to standardized commodities or established financial measures like indexes, interest rates or foreign exchange, not to heterogeneous items such as housing or business structures.

There is additionally some history that futures markets even in the areas just listed sometimes fail. In shares, for example, they were used for a time for portfolio insurance. When prices went down in the spot market, it was thought that holders could insure against further decline by selling forward, usually for a portfolio, a standard index contract for, say, the Standard and Poor 500. If the market continued to decline, the seller could close out the contract and be protected. This depended, to be sure, on someone buying the forward sale at the going price, whether someone who feared that share prices would rise, but generally an arbitrageur who would buy the contract and sell, not the entire bundle of shares in the index but significant leaders in the spot market. This in effect joined the spot and forward markets into one, so that a forward sale was equivalent to a spot sale. If great numbers tried to insure their portfolio, however, arbitrageurs would find the spot market falling rapidly and would stop buying the forward puts. The connection between the two markets would be severed, and

¹⁹ *Ibidem*, p. 360.

in the absence of buyers of the forward sales, the forward price would decline below the spot and eliminate any chance of insuring a portfolio. This happened in the stock-market crash of October 19, 1987, and ruined confidence in portfolio insurance.²⁰

The same phenomenon occurred in the London market for sterling in 1964 and the following years. In his *Tract on Monetary Reform*, John Maynard Keynes writes that central banks did not really need to hold reserves of foreign-exchange or gold.²¹ If there were a run on sterling, for example, with sellers demanding dollars, the Bank of England or the Exchange Equalization Fund could provide forward dollars. Arbitrageurs would buy the forward dollars with sterling coming on to the market. When the contract came due, the Bank of England, say, would roll it over instead of delivering spot dollars, and this presumably could continue to infinity. The same case was made by John Spraos in 1959.²² The technique was finally tried when the pound sterling came under attack in 1964 when the Labor government came into power under Harold Wilson. The process went on for two years; contracts came due and were extended. In due course, however, the market came to feel that the Bank's commitment to deliver dollars when contracts expired were on a scale equal to its exchange reserves and gold. Instead of continuing content to renew contracts as they became due, the holders asked for delivery. Bank reserves declined sharply, and in 1967 sterling was allowed to depreciate, as Spraos later noticed.²³ While derivatives function well in markets for standard commodities, and within limits for stock indexes and foreign exchange, economists should be wary of overstating their potential.

After these comments on the question of how to measure inflation, and whether to include in the appropriate measure the cost of housing or asset prices, including houses, let me now briefly turn to the question whether inflation is the only target monetary authorities should try to control, with one weapon, or other targets and other weapons present themselves from time to time. Among the targets might be to be close to 'full' employment, closing a gap between ac-

²⁰ B.J. Jacobs, *Capital Ideas and Market Realities*, Blackwell, Oxford, 1999.

²¹ J.M. Keynes, *Tract on Monetary Reform*, Harcourt Brace, New York, 1922.

²² J. Spraos, "Speculation, arbitrage and sterling", *Economic Journal*, vol. 69, no. 1, 1959, pp. 1-21.

²³ J. Spraos, "Some aspects of sterling in the decade 1957-66", in R.Z. Aliber ed., *The International Market for Foreign Exchange*, Praeger, New York, 1969.

tual and potential output (which reaches somewhat beyond unemployment), the balance of payments, exchange rate, prevention of bubbles, and acting as a lender of last resort in financial crisis. Some of these 'targets' may be regarded as intermediary on route to the primary goal of preventing inflation, holding the exchange rate steady to prevent currency depreciation raising the prices of traded goods and driving up the general price level, or appreciating the rate to fend off imported inflation from large increases in exports or massive capital inflows. Some goals may be in the charge of other authorities than the central bank. In the United States, for example, the exchange rate appears to be managed by the Treasury.²⁴ Moreover, the central bank typically has other weapons than manipulation of the short-term interest rate: changing the money supply by open-market operations, limiting credit for some uses, like the Federal Reserve's Regulation T, currently abandoned, to control bank lending for securities purchases, 'moral suasion' through publications, Congressional testimony, speeches, news releases on decisions of the Board or the Federal Open Market Committee, outlining what the Board thinks about the economy and hinting what path might follow in the future.²⁵ Still another tool of monetary policy is central bank coordination, with an important role in this respect assigned to the Bank for International Settlements.

While it is true, as remarked at the outset, that the price level and changing short-term interest rates are the target and weapon of choice among the majority of economists, this was not always the case and is unlikely to remain so indefinitely into the future. After the depression of the 1930s and World War II, Keynesian policy dominated discussion and practice. After a relatively brief time, this gave way to Friedman's monetarism, and financial markets in New York, for ex-

²⁴ Robert Rubin, Lawrence Summers and Paul O'Neill, successively secretaries of the Treasury, have spoken in favor of a strong dollar, and James Baker, who preceded them in the same office, arranged for the Plaza Accord of 1985 to prevent the dollar from rising further, and the Louvre Agreement of 1987 to halt the depreciation which followed.

²⁵ A foremost example was the speech by Alan Greenspan, the Board Chairman, on December 6, 1996, stating his view that the New York stock market was driven by "irrational exuberance". This was evidently intended to slow down stock-market speculation. Its failure and the low regard generally given by markets to moral suasion – derisively called jaw-boning or body English – was that the Dow Jones index of shares of industrial companies rose almost double between the day of the speech and the peak of the market in December 1999, three years later.

ample, held their breath every Friday afternoon as they waited for the Federal Reserve report announcing the change in the money supply. In due course this interest faded, and financial pages of the press looked forward to the dates of meetings of the Federal Reserve Board and Open Market Committee and speculated on what if any change in the federal-funds overnight rate would be decided, in what direction and by what amount. A change between meetings took markets by surprise, and created excitement for a few days.

This narrow focus began to fade after the financial troubles starting in 1997 and the ten-year depression in Japan which did not yield to either very low interest rates or substantial expenditures on public works. One sees signs that attention is beginning to turn to the foreign exchange rate, with both the United States dollar and the pound sterling regarded as overvalued and the euro and the yen as undervalued. Rising unemployment in Europe, some beginning in the United States and substantial unemployment in Japan may emerge as a preferred target in the not-too-distant future, and the tax reduction in the United States is being defended by its partisans on Keynesian grounds.

One target, one weapon has been abandoned in the United Kingdom where the more general goal of financial stability was initiated in 1997 in a Memorandum of Understanding among the Treasury, the Bank of England and the Financial Services Authority (broadly parallel to the American Securities and Exchange Committee).

The role of lender of last resort, developed first in the Napoleonic period and refined in 1873 by Walter Bagehot, is also under discussion currently. The actions of the International Monetary Fund in the East Asian crises of 1997 to the present is criticized and defended, and whether national treasuries should add help to the IMF and regional development banks when crisis arrives is seriously debated. New emphasis is put on foreseeing troublesome shocks rather than on being prepared to protest, sometimes riotously, against national and especially international efforts to restore quiet to national and international finance. Especially at issue is the nature of a future shock, whether inflation or world recession. In a complex world, we have moved beyond one target, inflation, and one weapon, the short-term interest rate.