

# So far from Ricardo, So close to Wicksell<sup>1</sup>

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## Introduction

The two objectives of monetary and financial stability are not generally in conflict. It is not a matter of more of one, then less of the other. So we do not face a trade-off in the usual sense. Normally, the two go together. This is most obvious at the extremes. If you lose control of the price level, as in high inflation, the financial system will wither away. If the financial system collapses, as in a debt deflation, stabilizing the price level becomes extremely difficult.

It is true, however, that stabilizing the consumer price index (or its rate of growth) does not guarantee stability of the financial system. Moreover, under certain conditions, concentrating on year-to-year monetary stability, in the sense of keeping to a CPI inflation target, can lead you to follow policies that are inimical to financial stability over the longer run.

## Japan

An example for the proposition that monetary stability does not guarantee financial stability is Japan up to the end of the 1980's. This was before the days when inflation-targeting became a doctrine generally embraced by Central Banks. So one is not justified in attributing an explicit such policy to the Central Bank of Japan. The point, however, is that had it operated with an explicit inflation target in that decade, it would presumably not have been led to behave differently from how it in fact did behave. (Nor would more explicit constitutional guarantees of “central bank independence” have made any difference).

Yet, two enormous asset price bubbles were steadily inflating during that decade. Once they burst, the Bank of Japan has struggled mightily for a decade and a half to

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<sup>1</sup> Paper given at the 2007 Jornadas Monetarias y Bancarias, Central Bank of Argentina, June 4-5, session on “Trade-off between Monetary and Financial Stability.”

repair the financial damage.

The lesson to be drawn from this episode is simply that *inflation targeting cannot be the end-all of monetary policy*.

Another aspect of the story does not have such an obvious moral. At the time of the Japanese crash, as I recall, commentators in the United States pointed out that its severity was due in large measure to the fact that Japanese banks had lent heavily against real estate collateral and also held equity interests in the manufacturing sector, activities that at that time were prohibited to American banks by the Glass-Steagal act. That legislation was based on an interpretation of the decade antecedent to the Great Depression analogous to how we today view the Japanese 'eighties<sup>2</sup>. Glass-Steagal sought to make the financial system into an unsinkable ship by segmenting it into watertight compartments so as to preclude what actually happened in Japan 60 years later<sup>3</sup>.

Shortly thereafter, however, the United States dismantled these particular regulatory structures. Lobbying by the financial industry was of course instrumental in the process. But it was also the case that economists had learned Tobin-Markowitz portfolio theory since the 1930's and were persuaded that Glass-Steagal prevented banks from diversifying risk. The watertight compartments model of ensuring against a crash was seen as wrong-headed. So deregulation met with little opposition.

## **Financial Evolution**

In the wake of deregulation, the financial system has evolved so very rapidly in the last twenty years that 1990 now seems a very *long time ago* – even though the consequences for Japan still linger. Monetary economists will recall, for example, that 20 years ago we had much debate about what was the most appropriate measure of the “money stock”. But underneath those disagreements it was agreed that measuring “M” was a useful thing to do. Today, in contrast, there is much more uncertainty about what “money” means.

The changes have been dramatic enough that it is not obvious what lessons from

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<sup>2</sup> It is worth noting that it has remained the interpretation of the Austrian school.

<sup>3</sup> Under Glass-Steagal, commercial banks were not to invest in mortgages or equities and were also prohibited from interstate banking. Home mortgages, for example, became the province of Savings and Loan Associations, an industry which functioned perfectly well until inflationary macropolicies in the 1970's made the extreme maturity mismatch between the two sides of its balance sheet fatal.

past experience still apply. A short list would have to include:

- the changes in payments practices and in the monitoring of credit
- the deregulation of banking and the rise of financial conglomerates
- the securitization of loans
- the growth of the various derivatives markets

Historically, the major stages in the development of financial markets and institutions have created novel sources of instability and have ushered in prolonged periods of learning how to regulate and stabilize the system. It took us a long time, for instance, to learn how to live (relatively) safely with fractional reserve note-issuing banks. Some of the errors in these trial-and-error learning process were huge in their welfare consequences. Will this stage in financial evolution be different? For the emergent markets involved in the East Asian crises, and for Brazil and Argentina we already have an answer. For the long since emerged economies, two questions remain open:

- 1) Have the developments mentioned above "made the (financial) world a safer place" – so that we do not have to worry?
- 2) If something nonetheless were to go wrong, are the powers of Central Banks adequate to cope with the consequences?.

### **Wicksell's Spectrum.**

Michael Woodford's recent book, **Interest and Prices**, is avidly studied in Central Banks everywhere. It borrows its title from the famous 1898 work by Knut Wicksell, **Geldzins und Güterpreise**. Woodford's work is Wicksell "Taylor'ed" to contemporary tastes. The older work will however serve my purposes quite adequately. The financial evolution of recent years has invested it with renewed relevance.

Wicksell's book contained two models, occupying two ends of an evolutionary spectrum of institutional alternatives. One was an old-fashioned Ricardian Quantity Theory model to which no one paid any attention. The money supply consisted of coins and notes convertible into gold which were issued by private sector banks. Denoting the public's propensity to hold minted gold by  $g$  and the reserve ratio of the banks by  $r$ , the base-

money multiplier would give us a money supply,

$$M = [(1 + g)/(g + r)]G$$

The price level is then determined by the quantity equation and Wicksell was satisfied that velocity had an upper bound. It was given by “how fast a messenger boy can run.”

But over the course of the 19th century, the banks had learned to economize more and more on the holding of gold reserves and the demand for minted gold by the non-bank public had essentially gone to zero. So Wicksell provided a second model -- the famous one of the “pure credit economy” in which both  $r$  and  $g$  had gone to zero in the limit.

In this second Wicksell model,  $M$  is demand-determined and *the price level is therefore indeterminate*. Not all is lost, however, because the Central Bank can control *the direction of change* of the price level by use of its discount rate and might be able to keep it constant if and only if it manages to hit just the right “natural” rate.

Wicksell did not think that either of his models fit the monetary system of his time exactly. The point was that the 19th century had started close to the Ricardian model but that financial evolution had carried it ever closer to the pure inside money model. There was still *some* demand for outside money in the system but it was small and getting smaller.

Patinkin in a paper that is by now almost half as old as Wicksell’s book (Patinkin 1961) demonstrated that for the price level to have a determinate equilibrium under the control of a Central Bank, it was sufficient that the Central Bank could control (a) one interest rate, and (b) the volume of one nominal asset *for which the private sector was not able to produce a perfect substitute*.

Patinkin’s theorem is a proposition about static equilibria. In principle, the theorem does not depend on the *size* of the volume of that nominal asset relative to the size of the economy whose price level you want to control. So the question naturally arises: Will it suffice to control, say, the copper coinage (as long as the private sector is not allowed to produce a perfect substitute)?

At least we know the answer to that one: You cannot make an economy deflate by cutting the supply of coins, only cause a coin shortage. For quantity control, you need more leverage than that. You need control of a money stock for which there is a reasonably stable demand function on part of the private sector (including the banks). Larger money aggregates, however, are likely to be subject to Goodhart’s Law. Not only is

the relationship between that stock and nominal aggregate demand likely to be quite “elastic”, depending on rates of return on non-money assets, but it may also shift as the private sector finds new ways to substitute for the controlled aggregate. Still, as long as there is some tendency for the price level to gravitate towards an equilibrium, mean-reverting expectations on the part of the public will be an aid to monetary policy even as the outside money stock that it controls directly is shrinking in relation to the overall size of the financial system. Even so, obviously, “credibility” is steadily becoming more important as the monetary “anchor” loses weight and the anchor cable becomes more rubbery.

### **Monetary Theory and Institutional Change**

Wicksell’s famous model did not have much influence on Central Bank practice in his time. It lost its relevance because of regulatory changes which in effect moved national monetary systems back towards the Ricardian end of Wicksell’s spectrum. Private note issues were abolished and note issue made a government monopoly. In some countries, reserve requirements were imposed on banks as well.<sup>4</sup> As long as a good measure of control of the base could be assumed, the money stock would then be supply determined. This made the U.S. system sufficiently Ricardian that Monetarism could dominate thinking in matters monetary as late as the 1970’s and well into the ‘80’s.

Today, reserve requirements are allowed to be circumvented where they have not been abolished and the private sector is busily producing steadily more convenient substitutes for paper currency. *So, 100 years later, we find ourselves very close to Wicksell’s world and very far from Ricardo’s*, which is to say, faced with the task of controlling the *rate of change* of prices in a system where the price level has no determinate equilibrium. This is what *inflation targeting* is supposed to do for us.

It is interesting to reflect that this is a task which seems far more difficult in theory than it appears to have been in practice. So far.

### **Powers of Central Banks**

Abundant compliments and congratulations have been exchanged among academic

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<sup>4</sup> With reserve requirements imposed and a stable propensity to hold currency, the money supply would be determined

economists and central bankers over the apparent successes of inflation targeting in recent years. Are these well deserved? Or have we benefited from what may turn out to be a historically unique conjuncture?

In the United States, we have had the Alan Greenspan cult. It has had adherents also abroad. A magazine cover had him as “the most powerful man in the world.” (Not bad for an economist!)<sup>5</sup> The trouble with this appellation, as I see it, is this: If you hike Bank rate 13 or 14 times – I lost count – and the market pays not the slightest attention but leaves the long rate flat, *how powerful are you really?* And do you deserve to take credit for superb performance in the Wicksellian game of consistently hitting the low inflation target by the skillful matching of market rate to natural rate?<sup>6</sup>

The other example of limited central bank powers is, of course, the Bank of Japan which has been trying to reflate the economy for all these years but has proven powerless to do so. There are conditions such that *getting up to* your inflation target is all but impossible!

### **Easy Money and No Inflation**

The next problem is this: The world is awash in liquidity, most of it dollar denominated. Yet, we have had no dollar inflation. How do we understand it?

The popular answer is: Cheap Chinese imports. It stands to reason that when hundreds of millions of people are pulled into the global division of labor *real* prices and some *real* wages will be squeezed. But, as Milton Friedman steadfastly maintained, “inflation is always and everywhere a monetary phenomenon.” In the present context, we may add as a lemma to the Friedman theorem that the *absence of inflation* is also a monetary phenomenon.

It is mostly the willingness of a number of Central Banks to accumulate enormous

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in the manner made familiar by decades of Money & Banking texts:  $M[(1 + c)/(c + r)]$ .

<sup>5</sup> A *Time* magazine cover, however, had him no better than member of a troika with Robert Rubin and Lawrence Summers nominated “The Committee to Save the World.”

<sup>6</sup>There is a subsidiary riddle: Why so much speculation in the market, in the press, on TV about what the Fed might do to the federal funds rate in its next meeting?

dollar reserves which explains the absence of inflation. The motives vary. China takes in dollars as a tonic for exports, Russia as medicine against Dutch disease, while a number of others are doing the same on the principle that “a few millions a day, keeps the (IMF) doctors away!” These exchange rate policies keep American import prices from rising and competition from imports keeps American consumer prices in check.

But this may not be the whole explanation. There is also the fact that the Federal Reserve, like the Bank of Japan, was facing a threatening *deflation* after the collapse of the IT bubble. Greenspan’s Fed was successful in averting this threat and deserves much of the praise that it has received. But the 13 or 14 rate hikes show that it went too far – far enough to lose all contact with the markets.

The next question then becomes: Suppose you conduct a very expansionary monetary policy and for one reason or another you do not experience inflation? Then what do you get? The answer is, on the one hand, *inflation of asset prices* and, on the other, a *general deterioration of credit standards*.

### **The Trouble with Inflation Targeting**

In modern theory, the Central Bank is supposed to solve a complex dynamic stochastic general equilibrium problem in order to find the right intertemporal path for the interest rate. But in practice interest targeting has to be *adaptive*, as in old Wicksell.<sup>7</sup> The policy maker never knows the value of the natural rate. He discovers whether his market rate is too low or too high – whether monetary policy is too expansionary or too restrictive – by the price level starting to rise or fall and can then adjust Bank rate accordingly. The problem is that this *crucial feedback loop has been short-circuited* by the exchange rate policies which allow the global financial imbalances to grow without end.

*So the trouble with inflation targeting in present circumstances is that a constant inflation rate gives you absolutely no information about whether your monetary policy is right.* To the extent that the Federal Reserve was focused on an inflation target, the behavior of the price level would have provided no clue whatsoever that their policy put them more than a dozen quarter-point hikes below the market.

This complication for inflation-targeting regimes is, I believe, quite critical. It would not

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<sup>7</sup> “... a policy based on correcting short-term inflation misses is the key to avoiding sustained periods of high inflation.”

have occurred to Wicksell who lived (in 1989) in a world of fixed exchange rates unlikely to be seriously misaligned by vast flows of portfolio capital. So, although I think of our present system as “close to Wicksell” it is not on the side facing toward Ricardo.

## **Financial Stability**

It is a simple observation that the experience of Japan shows that inflation targeting will not by itself protect you against financial stability. The present criticism goes a step further: inflation targeting might mislead you into pursuing a policy that is actively damaging to financial stability.

The legacy of the American monetary policy of recent years is some asset price inflation and a quite considerable lowering of credit standards. How dangerous is this legacy? It surely goes deeper and wider than housing markets and the substandard mortgage market that has been the focus of attention in the last few months. But beyond that judgments of the risks vary and they do so because no unconditional answer is possible. What dangers will actually materialize depends on how the current financial imbalances will eventually unravel, on where inflationary pressures will first come to the surface, and on how policy makers of the major countries will react to unfolding events. Some plausible scenarios are more reassuring than others.

The sanguine view is that securitization and risk transfer contracts have made the world of finance a safer place than it used to be and that, besides, liquidity is ample all around. But it is not likely that the world will stay awash in liquidity forever. At some stage, central banks will have to mop it up or see inflation do it for them. Securitization and credit derivatives have certainly dispersed risk though the economy and away from the banks where it used to be concentrated. But by the same token the system has taken on more risk and we know less about where concentrations of risk bearing may be located. Risk spreads have narrowed, in part permanently because of these new risk-sharing technologies, in part transitorily because of the extraordinarily level of liquidity. Narrow spreads have in turn induced some institutions to assume high leverage in search of yield.

A number of very large failures – LTCM, Enron, Amaranth among them – have occurred with nary a macroeconomic ripple and this is frequently cited as proof of the

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(Woodford, [www.cepr.org/DP6211](http://www.cepr.org/DP6211))



resilience that recent financial innovations have imparted to the system. It may be, however, that the more appropriate conclusion to draw is that macroeconomic developments are more likely to trigger trouble in the financial markets than vice versa.

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