Revista de Instituciones, Ideas y Mercados Nº 54 | *Mayo 2011* | *pp. 37-51* | *ISSN 1852-5970*

INFLATION TARGETING: NEITHER NEW NOR EFFECTIVE*

*Leonidas Zelmanovitz***

Abstract: Current inflation targeting policies are not something new, nor have they been effective in preventing the boom and bust cycles produced by discretionary monetary management. As Rothbard shows, the 1920's monetary policies anticipated by sixty years the strategy of conducing a policy primarily aiming at securing a given inflation level, and of using discretion in the management of the money supply.

Introduction

Since 1990, the state of the art in monetary policies has been inflation targeting.[1] Those policies have been regarded as capable of keeping inflation low under fiat money and fluctuating exchange-rate arrangements, while allowing the flexibility to manage the monetary policy required to support politically the "independence" of central banks, namely, easing credit as an attempt to promote stable growth with a minimum possible unemployment.

It is the contention presented in this paper that inflation targeting policies are not something new, nor have these policies been effective in preventing the boom and bust cycles produced by loose (flexible, if you will) monetary management. Moreover, I claim that inflation targeting policies are directly responsible for the financial crisis triggered in 2008, for allowing gross speculation with investment assets not "perceived" by the general price indexes utilized to gauge those policies.

---

* Presented at the III International Congress *The Austrian School of Economics in the XXI Century* (August 2010, city of Rosario), organized by Fundación Bases, Instituto Hayek and the Department of Economics of Universidad Católica Argentina in Rosario.

** Fellow, Liberty Fund, Inc. Email: lzelmanovitz@libertyfund.org

In order to present these ideas, I first sketch the concept of inflation targeting policies and its key elements. I then provide a brief historical overview of those policies, reviewing the performance of monetary policies in selected developed countries, as well as some elements of the monetary history in the US in support of my thesis. I then present the view that the 1920's monetary policies anticipated by sixty years the strategy of conducing a policy primarily aiming at securing a given inflation level, and of using discretion in the management of the money supply. The concluding paragraphs offer a summary of my main points.

The Concept of Inflation Targeting and Its Key Elements

Bernanke, Laubach, Mishkin and Posen offer the following definition of inflation targeting:

> (It) is a framework for monetary policy characterized by the public announcement of official quantitative targets (or target ranges) for the inflation rate over one or more time horizons, and by explicit acknowledgement that low, stable inflation is monetary policy's primary log-run goal (2001: 4).

Since the 1930's most of the debates about monetary policies have tried to classify them as strategies based on either "rules" or "discretion" (the Gold Standard being, for instance, a "rule"). A discretionary approach happens when a Central Bank makes no public commitment about its actions. Bernanke and co-authors describe inflation target as a "framework" in order not to pin it at either a "rule" or as a "discretionary" kind of policy.

In other words, under the framework of an inflation target, the Central Bank is free to take any measure it sees fit, so far and so long as the price level at the end of a certain period of time comes close to the previously stated price level goal, as measured by the chosen price index. Under the inflation target framework, the Central Bank claims to be able to pursue other political goals without falling into the discredited monetary activism of the bad old days before the "Great Moderation" (that is, the period of discreet monetary management by the main central banks between the start of Paul Volcker's Chairmanship at the FED and the beginning of the recent financial crisis).

In sum, an inflation target policy presents us with two key elements: a high level of discretion in the use of the tools available to the Central Bank, and a "formal" commitment to keep inflation low. The first component is sought by the central bankers to show the "strength" of their institutions and therefore, along with the second element, to convey the idea that the monetary authorities are committed to a low level of inflation and have the power to make it come about.

The second element may be understood in at least two different ways: (a) strictly speaking, about inflation targeting in the narrow sense, the formal commitment to keep inflation low may be stated in a piece of legislation, in an operational agreement between the government and the independent monetary authorities, made public through the publication of some official document by the monetary authorities or simply made public through the press; (b) the other possible meaning for the commitment to keep inflation low may be the one in which the monetary authorities, without any legal or informal mandate, or even making public their goal, operationally act driven towards the achievement of an inflation goal, and it may be known only by few top officials.

The advocates of inflation target policies claim it is possible to create a "nominal anchor" to the price level by the communication to the public of a target which would result in certain "psychological" market conditions favorable to the achievement of the very same inflation goal (Bernanke *et al*, 2001: 19). They believe that, if the market knows that the Central Bank has the power to do one or all of the following, this knowledge will help them achieve the goal of keeping inflation low:

(a) expand or contract the money supply,
(b) raise or to lower interest rates,
(c) impose exchange controls,
(d) alter the level of compulsory reserves,

(e) alter the classes of assets and the conditions under which they will grant access to discount facilities, and in most cases,
(f) impose new bank regulations.

Bernanke and co-authors could not be clearer about the psychological benefits expected from using everything available into the central bank "tool kit": "*Evidence suggests that the only way for central banks to earn credibility is the hard way: by demonstrating that they have the means and the will to reduce inflation and to keep it low for a period of time*" (Bernanke et al, 2001: 308).

Furthermore, the element of discretion gives the Central Bank the capacity to pursue other political objectives deemed necessary by the circumstances, without compromising the achievement of the stated goal, so long as the so-called psychological conditions remain under control.

When defending discretionary policies, the proponents of inflation targeting policies argue that history shows that rules are no protection against changes in monetary policy. Since changing circumstances require flexibility, to their eyes even the Gold Standard offers no protection against political decisions to suspend payments in gold (in case of war, for instance). Therefore, so the argument goes, all monetary policies are discretionary to a certain degree, and the best you can get is a framework such as the one provided by the adoption of a nominal anchor.

For the proponents of inflation targeting policies, in an scenario with no commodity monies or fixed exchange-rate mechanisms, the *Friedmanesque* proposal for a legally (constitutionally) defined rate of expansion for the money supply never gained acceptance because it was considered "too rigid", as the experience with monetary expansion goals has proven since 1974. We are left only with discretionary regimes, and for them, the inflation target framework is the only one in sight carrying some limitations to monetary expansion.

Historical Overview of Inflation Targeting Policies

On August 15, 1971, the United States under the Nixon administration defaulted on the Bretton Woods Treaty and severed the tenuous link still existing between the US Dollar and gold by closing the "Gold Window" under which US Dollars were redeemable by Central Banks of signatory countries at the fixed rate of US$ 35.00 per ounce. A new, short-lived parity was established, but in 1973 the fixed exchange-rate monetary regime enforced since the end of WW II came to an end. Central banks around the world searched for a new "anchor". In a world left only with fluctuating fiat money, the only possible "anchor" to the value of a currency was a "nominal" one, to be implemented at a national level.

The Deutsche Bundesbank and the Swiss Central Bank as early as 1974, and the American Federal Reserve System (FED) and the Bank of Canada during 1975, started to establish a desired growth target (Bernanke *et al*, 2001: 43). Initially, the effort of central banks was to make known to society the growth in the monetary aggregates. In doing so, they would know the expected changes in prices, as mechanically derived from the Quantitative Theory of Money.

Pressures to make changes to the goals in terms of expansion of the money supply were felt soon. Real and political factors contributed to force central banks out of their stated goals for monetary expansion, therefore compromising their credibility. At times, with a relative low inflation but a small rate of growth, additional monetary expansion seemed to be possible, and pressure to promote this policy increased. At other times, a more stringent monetary policy was pursued by the monetary authorities to keep inflation low, frustrating the expectative (if from no one else, from the Treasury) that the stated monetary expansion would happen. In sum, the claim for "discretion" was a constant.

It was in 1990 that the New Zealand Central Bank finally adopted an explicit inflation target which made no more reference to the expansion of monetary aggregates but to a certain price level, as measured by a price index. An inflation targeting policy, in a narrow sense, had officially began (Bernanke *et al*, 2001: 86).

Since the precursory adoption of an inflation targeting policy in New Zealand, and the adoption of a similar policy by Canada one year later, it has gradually become the policy of choice worldwide due to its apparent success. The establishment of price level goals by monetary authorities, without any other commitment about how that goal would be achieved, has become the common practice around the globe albeit with different grades of formality and public commitment,

The historically low levels of inflation achieved under the inflation targeting framework wherever it has been adopted, according to their proponents, seem to prove that it is the solution for price stability under fiat money and fluctuating exchange rates. And the statistical record gives credit to that assessment, at least until the financial crisis that started in 2008.

In order to analyze the validity of the claims of the proponents of inflation targeting policies, Table 1 presents below the Consumer Price Indexes of selected developed countries from 1970 to 2007.

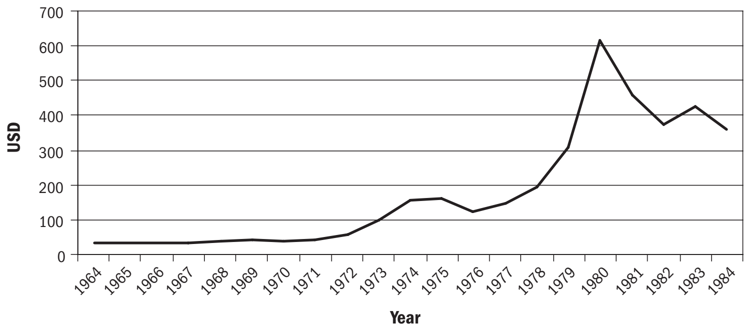
Until February 1973 the international monetary arrangements were the ones established in 1944 by the Treaty of Bretton Woods with fixed exchange rates pegging all currencies of the signing countries to a US Dollar, until 1971, convertible (only by their correspondent central banks) in gold at a fixed parity of US$ 35.00 per ounce. However, Table 1 above shows that the average inflation level in the selected developed countries for the period 1970-1972 was well above 5% per year. Those arrangements were clearly unsustainable in the long run. The weakened link to the Gold Standard provided by the Bretton Woods treaty until August 1971 proved to be insufficient to check inflationary expansions of the money supply among the Western developed countries and the abandonment of those arrangements became inevitable.

The American *default* on their obligations of redeeming US Dollar in Gold had huge and last long impact. From 1973 until 1983, we see in Table 1 an increase in prices. That was the period of failed attempts to control inflation by establishing targets for the growth of monetary aggregates. Figure 1 below shows the price of gold in US Dollars for the period 1964 to 1984. It shows that until 1968 it was perceived by world markets that the promise by the American government to redeem US Dollars at the agreed parity of US$ 35 per ounce was credible. From 1968 to 1971, when the pledge was finally broken, the increases in the gold prices showed that the

Table 1. Consumer Price Indexes in selected developed countries (1970-2007)

Year	USA	Canada	Japan	France	Germany	Italy	Sweden	Swiss	UK
1970	5.9	3.3	7.6	5.9	3.4	5.0	7.0	3.6	6.4
1971	4.2	2.9	6.4	5.5	5.2	4.9	7.4	6.6	9.5
1972	3.3	4.9	4.8	6.2	5.5	5.7	6.0	6.7	7.1
1973	6.3	7.6	11.7	7.3	7.0	10.8	6.7	8.8	9.2
1974	11.0	10.9	23.2	13.7	7.0	19.1	9.9	9.8	16.0
1975	9.1	10.7	11.7	11.8	5.9	17.1	9.8	6.7	24.3
1976	5.8	7.6	9.4	9.6	4.3	16.7	10.3	1.7	16.7
1977	6.5	8.0	8.2	9.4	3.7	18.5	11.4	1.3	15.8
1978	7.6	9.0	4.2	9.0	2.7	12.0	10.0	1.1	8.6
1979	11.3	9.1	3.7	10.8	4.1	14.8	7.2	3.7	12.6
1980	13.5	10.2	7.8	13.0	5.5	21.3	13.7	4.0	16.9
1981	10.4	12.4	4.9	13.3	6.3	19.5	12.1	6.5	12.2
1982	4.0	10.7	2.8	12.0	5.3	16.5	8.6	5.7	8.5
1983	5.3	5.9	1.9	9.5	3.3	14.6	8.9	3.0	5.2
1984	4.4	4.4	2.3	7.7	2.4	10.9	8.0	2.9	4.5
1985	3.5	4.0	2.0	5.8	2.1	9.1	7.4	3.5	5.2
1986	1.9	4.2	0.6	2.5	-0.1	5.8	4.2	0.8	3.6
1987	3.7	4.4	0.1	3.3	0.2	4.8	4.2	1.4	4.1
1988	4.1	4.0	0.7	2.7	1.3	5.1	5.8	1.9	4.6
1989	4.8	5.0	2.3	3.5	2.8	6.3	6.4	3.1	5.9
1990	5.4	4.8	3.1	3.4	2.7	6.5	10.5	5.4	8.2
1991	4.2	5.6	3.3	3.2	3.5	6.3	9.3	5.9	6.8
1992	3.0	1.5	1.7	2.4	5.1	5.3	2.3	4.0	4,7
1993	3.0	1.8	1.2	2.1	4.5	4.6	4.7	3.3	3.0
1994	2.6	0.2	0.7	1.7	2.7	4.1	2.2	0.9	2.4
1995	2.8	2.2	-0.1	1.8	1.8	5.3	2.5	1.8	3.5
1996	3.0	1.5	0.1	2.0	1.4	4.0	0.5	0.8	2.4
1997	2.3	1.7	1.9	1.2	1.9	2.0	0.7	0.5	3.1
1998	1.6	1.0	0.6	0.7	1.0	2.0	-0.3	0.0	3.4
1999	2.2	1.8	-0.3	0.5	0.6	1.7	0.5	0.9	1.5
2000	3.3	2.7	-0.8	1.7	1.4	2.5	0.9	1.5	3.0
2001	2.8	2.5	-0.7	1.7	1.9	2.7	2.4	1.0	1.8
2002	1.6	2.2	-0.9	1.9	1.5	2.5	2.2	0.6	1.7
2003	2.3	2.8	-0.3	2.1	1.0	2.7	1.9	0.6	2.9
2004	2.7	1.8	0.0	2.1	1.7	2.2	0.4	0.8	3.0
2005	3.4	2.2	-0.3	1.8	1.5	2.0	0.5	1.1	2.8
2006	3.2	2.0	0.3	1.6	1.6	2.1	1.4	1.1	3.2
2007	2.8	2.2	0.0	1.5	2.3	1.8	2.2	0.7	4.3

Figure 1. Average Price of Gold (1964-1984)



confidence in that promise had somewhat diminished. Under the Smithsonian Agreement of December 1971, an attempt to fix exchange rates at a devaluated US Dollar without a link to actual gold faced skepticism and the gold in 1971 closed at the record price of US$ 44.20 per ounce. In February 1973, the Bretton Woods exchange market formally closed, reopening in March 1973 in a floating regime.

Credibility was not recovered until 1984, the first year in which the data show the results of more conservative policies adopted in developed countries. The galloping inflation during the Carter Administration led Paul Volker to become the head of the FED. He implemented a monetary policy of quantitative control of monetary aggregates, which eventually curbed the increases in consumer prices. Similar policies were adopted in Europe since 1979 with the creation of the European Monetary System. But in order to impose an effective control on the growth of monetary aggregates, these policies resulted, as a byproduct, in a short but significant recession during the year 1980 with a double dip at the end of 1981, beginning of 1982. Although those policies proved successful, eventually, new inflationary pressures came into the scenario.

Three historical events may explain the new increase in the general price levels, which lasted until 1991. The first of them was the Black Monday in October 1987, when the stock market in the US plunged and the recently appointed Chairman of the FED, Alan Greenspan, took charge of the problem flooding the market with dollars. The second one was the fall of the Berlin Wall in 1988, with the required effort made by developed countries to integrate the Eastern European countries into the new world order. And the third event was the invasion of Kuwait and the first war in the Persian Gulf, with the correspondent shock in the world oil supply.

Undoubtedly, the massive inflationary expansion determined by those events resulted in the increases in prices shown on Table 1. But they were eventually counterweighted by the productivity gains generated by the enlargement of the division of labor, caused by:

(a) the integration of China and the countries behind the Iron Curtain in world markets;
(b) the liberalization of trade worldwide with the creation of the World Trade Organization (WTO);
(c) the benefits in terms of lower barriers for the trade of goods, labor, services, finances in an expanded Euro-zone, with the final adoption of the Euro ten years ago;
(d) and, last but not least, the advances in Information Technology.

A twenty-year period of prosperity had begun. Behind the miracle, foreign trade was the motor of the real economy, and economic expansion and increasing tax revenues lessened the political cost of implementing more conservative fiscal policies in developed countries, which were therefore adopted. With a regained credibility in their fiscal management, governments started to adopt, either explicitly or tacitly, the inflation target framework.

The US is one of these countries where, to this day, inflation targets are not formally adopted; nevertheless American monetary policy is guided primarily with a focus on the inflation rate. Writing about the US monetary policy in 1996 –in the seventh year of the most consistent bull market in record– Greenspan argues that the FED "has no explicit mandate under the law to try to contain a stock market bubble" and that it was established that "price stability is (the) central (FED's concern) to (promote) long-term economic growth" (Greenspan, 2007: 178).

The adoption of the inflation target framework perfectly coincides with the beginning of the twenty-year expansion mentioned above. Up to a point in which the inflation target framework has been credited by the prosperity experienced until 2007. Claims have been made that it is the "perfect" balance between rules and discretion in monetary policy.

What remains to be assessed is to what extent the current crisis proved that inflation targeting policy is the best strategy possible for monetary policy, since it gives room for the monetary authorities to react to the crisis with every instrument at their disposal, or if rather it has proven to be no more than a new dress for the recurrent mistake of credit expansion that in the end caused the crisis.

In order to assess this latter point, it is worthwhile revisiting the monetary policies of the early 1920's.

Repeating the Recipe: The Monetary Policy of the 1920's

It is commonly believed that the period between the Great War and the Depression were years in which the monetary excesses provoked by the war were interrupted in Europe and in the US. It was also believed that resuming redemption in gold was a signal of a regained monetary stability under the venerable Gold Standard, and that the wild speculation with equities during the 1920's was mainly due to a lack of regulation of the stock markets.

The available data, however, tell a different story, one of monetary expansion. From June 30, 1921, to June 30, 1929, the total money supply of the United States rose from 45.30 to 73.26 billion dollars. It means an increase of 28 billion dollars during those eight years, or 61.8% (Rothbard, 2008: 92). Many mechanisms were used to expand the money supply, given the limitations of the Gold Exchange Standard then in force; the currency in circulation, for instance, stayed fairly constant around $ 3.7 billion during the period. The truth of the matter is that the entire monetary expansion happened with money substitutes, i.e. through credit expansion.

But does not the Gold Standard have an inbuilt mechanism to self-correct imbalances preventing inflationary expansions? It seems that not all monetary regimes based on a Gold Standard are the same. It was already noted in nineteenth-century England that the operation of an external drain of specie would only work in order to keep the monetary system "neutral", that is to say, neither promoting nor reducing the business cycle under a hypothetical purely metallic currency (Hume, 1987: 308). Under the gold exchange system with a Central Bank, the anti-inflationary effects of a specie drain mechanism were not immediately perceived, if perceived at all (White, 1995:115).

Using the concept of "Total Dollar Claims" to represent the total money supply on top of gold reserves, Murray Rothbard (2008) demonstrates that that was the case in the 1920's. The data retrieved from the Banking and Monetary Statistics published by the FED in 1943 is shown on Table 2 below.

As shown above, the regime of gold exchange standard during the 1920's, in which governments no longer accepted to redeem their currency in gold –domestically and abroad–, although formally available was politically constrained, and posed no real limits to monetary expansion.

Rothbard considers Yale Professor Irving Fisher as the major representative of the inflationist theories in the years of the Great Depression. He was someone "*who mechanistically had believed that since the price level was not rising in the 1920's, there was no inflation to worry about and no coming crash*" (Rothbard, 2005: 303). After the crash, Fisher urged President Roosevelt to abandon the gold standard and was rejoiced when the President finally did that. But the important lesson is what history tells us about the monetary policy before the Great Depression. What we now know is that the only actual limits to monetary expansion at that time were already the self-limitations adopted by different central banks with eyes only on the price levels. Those policies anticipated by sixty years the strategy of conducing monetary policy primarily aiming at a certain inflation level, and of using discretion in the management of the money supply in order to achieve the goal of inflation targeting.

Table 2. Total Dollars and Total Gold Reserves in the US (in billions of dollars)

	Total Dollar Claims	Total Gold Reserve	Total Uncovered Dollars
June, 1921	44.7	2.6	42.1
June, 1929	71.8	3.0	68.8

Source: Federal Reserve (1943), in Rothbard (2008:94).

Faced with the apparent success of the FED Governor, Mr. Strong, in stabilizing wholesale prices during the late 1920's, Fisher was again the leader in the economic profession in welcoming the arrival of an era of continuous prosperity, assured by the "new" policy of managed money in America and in the world, but ignorant of the fact of mounting mal-investments induced by the inflationary policies in practice during the 1920's.

As stated by Rothbard in *America's Great Depression*:

> One of the reasons that most economists in the 1920's did not recognize the existence of an inflationary problem was the widespread adoption of a stable price level as the goal and criterion for monetary policy (Rothbard, 2008: 169).

Rothbard is explicit in stating that the Federal Reserve was guided not only by the desire to help the UK in their inflationist monetary policy or to help farmers, but "by the fashionable economic theory of a stable price level as the goal of monetary manipulation" (Rothbard, 2008: 181).

Conclusion

The monetary policy known as inflation targeting is neither new nor effective. Seen by most economists today as the state of the art in monetary policy, the inflation target framework can be understood as a relabeled version of the monetary management that was gradually implemented by central banks world-wide once the Gold Standard was diluted into the Gold-Exchange Standard.

It is not the objective of this paper to discuss the historical evolution of the Gold Standard, but suffice it to say that the golden era of the International Gold Standard, with a fractional reserve banking system –structured as a pyramid with the Bank of England on the top, that took form after Peel's Act of 1844–[2] was already a regime with room for monetary management by the Central Bank. The gradual transformation of that system first into a system of gold-exchange, and later on into a system of limited gold-exchange, fixed exchange rates and finally one of fiat money with floating exchange rates, gave more and more room for the exercise of a discretionary monetary policy.

Taking the fractional reserves system under the umbrella of the Bank of England as our departing point, inflationary credit expansion was made possible first, by diminishing the prudent ratio of reserves to assets (with the implicit support of the British Crown to the banking system). As described by Rothbard, after the Great War and under a regime with a Central Bank, direct trade on money substitutes by the FED, the Bank of England and other leading central banks was a source of inflationary credit expansion worldwide. Finally, since 1973, under fiat currency and floating exchange rates, inflationary expansion of the money supply was made possible by the total discretion that central banks have to this day.

All along the way, the "nominal" anchor, i.e., an implicit or explicit commitment of the monetary authorities to avoiding increases in the price level as gauged commonly by a consumer price index, gradually became more and more the only limitation to inflationary expansion and also the only guide to the exercise of monetary policy.

The surprising thing about policies that allow a discretionary expansion of the money supply (so long as the Consumer Price Index does not increase more than some "accepted" rate), is that the shortcomings of the theoretical apparatus behind those policies have been known in academic circles for about eighty years now. The inter-temporal implications of inflationary changes in the money supply, and the limitations imposed by the structure of production for monetary "management" presented by the Austrian Business Cycle Theory are concepts well known since the early 1930's.

During the Great Depression and again during the financial crisis of 2008, many economists were surprised by the effects of inflationary expansions of credit that distorted economic activities and led to mal-investments, which eventually needed to be purged by a recession. To quote again from Rothbard:

> The fact that general prices were more or less stable during the 1920's told most economists that there was no inflationary threat, and therefore the events of the Great Depression caught them completely unaware (Rothbard, 2008: 169).

Inflation targeting strategies do not prevent inflationary credit expansions, and therefore do not prevent cycles of boom and bust irremediably associated with them. Moreover, distortions in relative prices produced by inflationary credit expansion –as described by the Austrian Business Cycle Theory– are not easily perceived by price indexes, since usually they do not include assets in their composition. Massive increases in the money supply can produce sizable appreciation in certain classes of assets without barely affecting consumer prices, or more generally, the price level as measured by general price indexes.

Nowadays it can be affirmed that the flexibility to engage in long term inflationary credit expansion under an inflation targeting framework can be exercised without compromising the achievement of an inflation goal as measured by most price indexes. It was true during the 1920's, it had been true since the 1990's. However, the fact remains that an inflationary credit expansion distorts relative prices and provokes economic booms that eventually will end in a downturn.

Therefore, we may conclude that policies guided solely by targeting a certain price level as measured by an index, while allowing discretion to the monetary authorities to pursue growth, are an insufficient institutional arrangements for a society that purports to offer sound money as a fair instrument for the individuals to enhance the division of labor, productivity and prosperity in the long run.

NOTES

1 Perhaps the most influential academic paper proposing an inflation target as the central criterion for monetary policy is John B. Taylor (1993); its main credit, however, is that it endorsed what at that time became common practice among central banks. Bernanke *et al* (2001), first published in 1999, is also widely quoted in academic discussions about inflation targeting for the collection of data supporting the claim for inflation targets effectiveness.

2 The *Peel's* Act of 1844 gave to the Bank of England (BoE) the monopoly of issuance of paper money, solidifying its role as *de facto* central bank. In such a role the BoE used to concentrate most of the British gold reserves while the other banks used to have BoE notes instead of gold in their vaults, creating a two layered system or reserves which "economized" in gold and allowed an already highly leveraged ratio of gold to banknotes.

REFERENCES

Bernanke, B., Laubach, T., Mishkin, F. S., and Posen, A. S. (2001), *Inflation Targeting*. Princeton: Princeton University Press.

Greenspan, A. (2007), *The Age of Turbulence*. New York: Penguin Press.

Hume, D. (1987), *Essays Moral, Political and Literary*. Indianapolis: Liberty Fund, Inc.

Rothbard, M. (2005), *A History of Money and Banking in the United States: The Colonial Era to World War II*. Alburn: Mises Institute.

Rothbard, M. (2008), *America's Great Depression*. Auburn: Mises Institute.

White, L. H. (1995), *Free Banking in Britain: Theory, Experience, and Debate, 1800-1845*. London: Institute of Economic Affairs.

Taylor, John B., (1993), "Discretion Vs. Policy Rules in Practice", Carnegie-Rochester Conferences Series on Public Policy, Nº 39, pp 195-214.