

FIVE COMMON ERRORS ABOUT DEFLATION

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Resumen: Comúnmente se considera la deflación como algo malo que hay que evitar. También los economistas se esfuerzan en estudiar cómo se puede prevenir la deflación. Este artículo analiza las razones por las cuales se considera la deflación como algo malo y refuta en este contexto cinco errores muy difundidos sobre la deflación: que la deflación causa una redistribución arbitraria, que la deflación lleva a una reducción de la producción, que una inestabilidad de precios causada por la deflación produce caos, que es la causa de paro masivo y que puede poner a la economía en una trampa de liquidez desastrosa. Se concluye que, ante estos errores, hay que revisar el análisis estándar de la deflación.

Palabras clave: deflación.

Abstract: Deflation is generally considered as an evil that must be prevented. Economists as well are focusing on the question of deflation prevention. This paper examines the reasons for why deflation is considered as bad and refutes in this context five common errors concerning deflation: That deflation leads to an unfair redistribution, that deflation induces an decrease in production, that deflation induced price instability leads to chaos, that it is the cause of mass unemployment and can put the economy in a disastrous liquidity trap. It is concluded that the standard analysis of deflation must be revised.

Key words: deflation.

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INTRODUCTION

In contrast to inflation, which constitutes an important part of nearly every monetary theory textbook, deflation is still neglected. Sometimes in monetary theory textbooks deflation is not mentioned at all and at other times, it is just defined as the reverse of inflation in a chapter about inflation (Miller and Upton 1986, p. 363). The question why deflation has been neglected seems to have a straightforward answer: There has been a long period of inflation (Stiglitz 1993, p. 652, and Svensson 2000, p. 222). Because of this long period of inflation, almost «no one had seen actual falls in the price level as even a remote possibility. Now people do» (Delong 1999, p. 1). Because of the developments in Japan and the fears in the Western world about deflation, the concept is now beginning to be discussed in media and academia (Tigges 2004, p. 1, and Krugman 1999, p. 1).

Interestingly, in the actual discussion, deflation is often only implicitly assumed to be bad rather than demonstrated to be bad. Economists start with this hypothesis, because they probably do not want to make «open» value judgments. So they avoid them by use of implicit assumptions (Svensson, 2000 p. 222, and Bernanke, 2002, p. 1). Assuming that deflation is undesirable, economists focus their discussion on the question if and how deflation can be prevented (Meltzer 2000, p. 71, and Goodfriend 2001, p. 1). But is this really the important question to be asked? Must not the more fundamental question be answered first? — Is deflation really undesirable and evil?

There are many fallacies concerning deflation¹, which need to be corrected before this fundamental question can be

¹ Austrian economists, as well, diverge on the subject of deflation and some even propose an arsenal of interventions to fight it (Bagus 2004).

answered. This paper will discuss the most common errors about the vital subject of deflation.

ERROR NUMBER 1:
DEFLATION LEADS TO AN ARBITRARY
AND UNFAIR REDISTRIBUTION

Economics is a value-free science. Therefore, it seems unnecessary to deal with the argument that deflation should be avoided because it leads to an unfair redistribution. Yet we will see that this argument is sometimes used implicitly and that sometimes redistribution is openly criticized. Kent provides us with a clear example of this particular error. He claims that price deflation leads to an «arbitrary redistribution» (Kent 1966, p. 458) of real income and wealth. He is right that deflation leads to a redistribution of wealth, but why would that be arbitrary and unfair? Furthermore, would that not be an ethical value statement? Kent admits that «those who previously gained are likely to lose purchasing power» (Kent 1966, p. 459). Actually, those who gain during inflation and those who lose during inflation are not necessarily the same as those who lose or gain during a deflation. The ability to profit in either situation depends upon entrepreneurial skills. In other words, people who most accurately anticipate the rise in the purchasing power of money gain from the price deflation.²

Delong (1999) claims that it is not an entrepreneurial task to anticipate price changes. Yet, this view is erroneous. Entrepreneurs try to anticipate all relevant future changes. Especially important for them are the prices of their factors of production and their selling prices. And of course, entrepreneurs

² See for instance Bernanke (2002) who states the problems for debtors who did not anticipate the deflation.

can be successful in anticipating price changes. Hence, in times of deflation, «...entrepreneurs *can* run a profitable business by bidding down buying prices or, if it is not possible, by abstaining from investment altogether» (Hülsmann 2004, p. 51).

Moreover, it must be recognized that any change in the economy has effects on the relative wealth positions of all market participants (Hülsmann 2004, p. 45). That leads us to the question: Who decides which changes on the market are arbitrary and unfair and which changes are not? Should every change be bad and therefore be prohibited by the government?

Mises (1949, p. 539) remarks on the changing world that:

In the world of reality all prices are fluctuating and acting men are forced to take full account of these changes. Entrepreneurs embark upon business ventures and capitalists change their investments only because they anticipate such changes and want to profit from them. The market economy is essentially characterized as a social system in which there prevails an incessant urge toward improvement. The most provident and enterprising individuals are driven too earn profit by readjusting again and again the arrangement of production activities so as to fill in the best possible needs of the consumers.

Yet, it could be argued that confiscatory deflation, i.e. the direct government reduction of the money supply, is arbitrary because it is not initiated on the free market. But even if we, for the sake of the argument, assume that all price deflation is somehow «arbitrary» and leads to arbitrary redistribution of real income and wealth, it does not follow that it is harmful.

Of course, a redistribution will also occur in the case of a liberating deflation that purges an unsound banking system, e.g. by an abolishment of the amnesty for fractional reserve banks for the fraud of issuing fiduciary media. Fractional reserve banking is fraudulent, since banks issue more money titles than they have money and they promise, at the same time, to redeem them on demand. A sound and non-fraudulent banking system,

is a 100% reserve system. In this case, redistribution is not an arbitrary and unfair solution for it involves justice. Every punishment of criminals or the stopping of criminal activities will bring about a loss for the criminals and their trade partners, while their victims will win.

The crucial question is: Can «unfair» redistribution be prevented by inflation, i.e. an increase in the money supply? In practice, new money created out of thin air is injected through the banking system. Therefore, there is a redistribution in favor of the banks and the connected industries and individuals which get the new money first. They profit because they have higher sums of money to bid for resources before the prices have risen. On the contrary there are people whose incomes rise only after there has been an increase in prices. Yet, why would this scenario be less unfair?

ERROR NUMBER 2: DEFLATIONARY REDISTRIBUTION DECREASES PRODUCTION

There is the argument that redistribution, which deflation causes, would be harmful (Keynes 1963, p. 177)³, because through hurting debtors, entrepreneurs, businesses and the financial system, overall production would fall. I will deal with these arguments one after another, but it should be stressed here that redistribution or changes in the wealth positions of the market participants per se do not harm production at all. The production will be different though, since those who benefit from the redistribution will have other preferences than those who suffer a loss.

³ Here Keynes interestingly himself summarizes the liberating effects of deflation and admits that the financial system would be liquidated and «Individually many of us would be 'ruined,' even though collectively we were much as before.»

The first variant of this argument states that if the price deflation was not anticipated and many debtors go bankrupt, the financial institutions of a fractional reserve system can get into difficulties (Keynes, 1963, pp. 168). Surely, it is true, loans that were given under the expectation of inflation can turn bad and harm «banks' balance sheets» (Delong 1999, p. 6). There is also a redistribution of wealth in favor of creditors. Furthermore, it is true, that the unsound monetary system, which rests on continuous inflation and benefits those who first receive the new money and money titles, could collapse. However, a new financial system based on 100% reserve banking could emerge. It is hard to see why that would be an «adverse effect» (Bernanke 2002, p. 3) on the soundness of the monetary and financial system.

Another variant of this argument stresses that there would be redistribution at the expense of entrepreneurs. Delong (1999) states that entrepreneurs are hurt by falling prices⁴ and therefore production falls. Bye (1944, p. 220) even states that: «When prices fall, however, the effects upon business men are very disastrous...».

Yet this view is erroneous. Price deflation can surely hurt entrepreneurs whose selling prices fall first while the prices of other goods and services they buy are still higher. Price deflation can also hurt those who have debts, but it does not hurt *all* entrepreneurs. Delong obviously has a confused idea about the concept of entrepreneurship. Entrepreneurs try to anticipate the future prices of their products and bid for factors of production in relation to their anticipation. In this respect it is not important if general prices fall or rise. An entrepreneur can always err by expecting higher future prices for his products than will actually occur, and bidding too much for factors of production. He will, as a result, suffer losses. There is no systematical reason why

⁴ For a similar view see Keynes (1936).

entrepreneurs would err more in times of falling prices than in any other scenario.

Furthermore, in times of falling prices the essential price differential (the difference between buying and selling prices) does not necessarily fall but can actually increase and stimulate businesses if buying prices fall faster than selling prices do (Rothbard 2000, p. 17). Moreover, if the price drop is unanticipated, the real rate of return, respectively the natural rate of interest, might not change due to the increase in purchasing power of the revenues. The anticipation of falling prices, in contrast, «lead[s] to an immediate fall in factor prices» and «partial anticipation speeds up the adjustment of the PPM [purchasing power of money] to the changed conditions» (Rothbard 1993, p. 697).

Another variation of this argument sees the problem for businesses and production in the rising real debts and deterioration of balance sheets due to the collapse of asset prices (Goodfriend 2001, p. 17, and Cargill 2001, p. 116). But again, this simply leads to a redistribution that may not affect production at all. Surely, if a company rests on loans and invests in assets whose prices were inflated by credit expansion, problems can be expected. In such a case, the company's real debt might increase to such an extent that it is forced into bankruptcy and its assets would therefore be turned over to the debtors. As Rothbard (2000, p. 51) states,

It has often been maintained that a failing price level injures business firms because it aggravates the burden of fixed monetary debt. However, the creditors of a firm are just as much its owners as are the equity shareholders. The equity shareholders have less equity in the business to the extent of its debts. Bondholders (long-term creditors) are just different types of owners, very much as preferred and common stock holders exercise their ownership rights differently. Creditors save money and invest it in an enterprise, just as do stockholders.

Therefore, no change in price level by itself helps or hampers a business; creditor-owners and debtor-owners may simply divide their gains (or losses) in different proportions. These are mere intra-owner controversies.

There would merely be a change of ownership and a redistribution of the assets, from failed entrepreneurs to those who more successfully anticipated the price change. Successful entrepreneurs would now have the chance to use the assets in a way that suits better consumer wishes.

Yet, there is no need for the claim to be true that price deflation would lead to «changes in total productive activity and therefore in total output and employment» (Kent 1966, p. 458). The mere change of ownership inherent in all market economies from failed entrepreneurs to those that can satisfy consumer wants better does not have to change production. The physical integrity of the redistributed assets is not inhibited at all by the change of ownership. When, for instance, Chrysler was taken over by Daimler, it did not mean that production of Chrysler cars had to fall. In such cases, the new owners are likely to change the production somewhat if there has been mismanagement by the former owners. They might also cut back on production. However, the new owners or their hired managers might increase production, as well.

It must be admitted that every change of ownership implies some period of transition. In this period the assets of the bankrupt business are in use as well. Probably the bankrupt owner tries to disinvest and consume his capital or invest in other ventures, which leads to a different structure of production. Would it not be arbitrary to say that the needed transitional time to sort out a bankruptcy would be too long and therefore bad?

It is also important to examine the sources of the price deflation before making any predictions about changes of production. First, a price deflation caused by an increase in

productivity is indeed a result of an increase in total output. Second, a confiscatory deflation, i.e. a confiscation and destruction of money titles by the government, will flatten and shorten the structure of production due to an increase in the time preference rate (Hoppe 2001, p. 14). Third, a deflation initiated by the government through the loan market might lead to a shortening of the structure of production and therefore to reduction in total output. However, this intervention might also counteract the lengthening tendencies of a simultaneous credit expansion.

Regardless of which source is considered, a price deflation simply results in a redistribution of wealth. The preferences of the winners and losers cannot be known *ex ante*, and therefore the effects on the structure of production and output cannot be predicted. The critics are right in that a price deflation results in economic changes. For all changes in economic data correspond to a change in the economy. But they give no explanation why changes should be prevented. Nor do they explain why the changes a central bank system induces are somehow better than those made by the redistribution of wealth resulting from price deflation.

Why would inflationary redistribution lead to an increase in production? The only thing we know for sure about the inflationary redistribution is that it will change the structure of the economy. An ongoing inflation in favor of some market participants will surely prevent some bankruptcies. But in contrast, the inflation hampers those businesses and households that get the new money last because they have already faced a price structure driven up by the first recipients of the new money. While established industries might be bailed out, other companies are prevented from growing or coming into existence.

ERROR NUMBER 3:
DEFLATION-INDUCED PRICE INSTABILITY
LEADS TO CHAOS

One variant of this argument states that there must be an adjustment of the quantity of money to economic growth. This «adjustment» would prevent prices from falling. Colander (1995, p. 519) argues that «...if there's an increase in real goods but not a corresponding increase in money, there will be a shortage of money, which will hamper the economy.»⁵ Remarkable is that Colander fails to explain why it would hamper the economy.

He does not recognize that each quantity of money is optimal to fulfill the essential function of money as a medium of exchange (Rothbard 1990, p. 34). An increase in the purchasing power of money does not affect its usefulness as a medium of exchange. It is true that inflation may preserve businesses whose ventures rested on the expectation of higher priced products. In contrast, an inflation could cause harm to those businesses which had expected lower prices for their factors of production or which had lent out money.

Moreover, the proposed inflation initiated through the loan market can artificially lengthen and broaden the structure of production, by lowering the market rate of interest. Since real savings does not sustain this lengthening, the malinvestments must be liquidated at some point.⁶ The initiation and maintaining of the unsustainable boom can hardly be called a «balance.»

It is often assumed though, that price stability itself would be something desirable because it would balance the economy

⁵ See also Hahn (1956) for this argument.

⁶ For more intensive accounts of the Austrian business cycle theory see: Rothbard (1993) and idem (2002, Part I), and Mises (1953) and Huerta de Soto (2005).

(Shiratsuka, 2000, pp. 16). Therefore it is argued that «...[d]eflation is not price stability, and the absence of price stability is likely to increase information costs, interfere with the market mechanism and resource allocation, and make long-term planning more difficult» (Svensson 2000, p. 225).

It is true that with «guaranteed» price stability, long-term planning is easier. With price controls, long-term planning is the easiest and information costs are minimal. Yet, even with government intervention, price stability is not guaranteed. However, just for the sake of the argument, let us assume government interventions in voluntary exchanges are stable in the long run, reducing information costs by making planning easier. We must then ask if these minimized information costs are a good *per se*. To answer this question it must be stressed, that every government intervention limits the array of possible human actions, which economic agents regard as beneficial and, could otherwise undertake. Since there are fewer actions possible, planning becomes easier. Yet that is not an advantage from the actors' or consumers' points of view, whose satisfaction of wants become limited.

Minimized information costs are not a good *per se*. A quasi «aggregate price control» enforced by a central bank's manipulations of the money supply distorts the market prices. The reason for this is that market prices become different than those that would occur in absence of that intervention based on consumer preferences. Aggregate price controls inhibit necessary adjustments by rescuing businesses that would not be profitable without the manipulation of the money supply. If the new money flows in the loan market, there might be a misplanning in the form of malinvestments. «Businessmen, in short, are misled by the bank inflation into believing that the supply of saved funds is greater than it really is» (Rothbard 2000, p.5). Actually, the resulting boom bust cycles make long-term planning more difficult.

In any case, there is no explanation why free market prices are bad and price controls good. As Mises (1953, p. 416) pointed out: «All plans to render money neutral and stable are contradictory. Money is an element of action and consequently of change.»

Surely resources are allocated differently if there is government intervention. But it is hard to see how free market price changes interfere with the market mechanism and resource allocation. Preventing price adjustments by inflation-targeting will make necessary readjustments slower, if the structure of production has been distorted. When the malinvestments become obvious, entrepreneurs might not even cut back production, because they rely on the central bank to fight price deflation.

ERROR NUMBER 4: DEFLATION LEADS TO MASS UNEMPLOYMENT

This argument states that because wages are sticky, price deflation leads to a rise in real wages and therefore unemployment (Keynes 1936, p. 291, and Svensson 2000, p. 225). Yet, unemployment is not the consequence of a price deflation. Unemployment can only have two causes. First, the unemployment is voluntary and the worker does not want to work for the wage which an employer is willing to pay for his work. Or, in the second case, it is impossible for the worker to accept what would have been the employer's offer because of government interventions (minimum wage laws and union monopoly). If the nominal wage an employer is willing to offer declines because of a price deflation there will only be voluntary unemployment or unemployment caused by government intervention.

It is true that «contracts cannot be varied constantly», to reflect price changes; therefore, «costs tend to follow prices

with some interval.» It should be stressed that «...contractually fixed prices...are, in themselves, in no sense price rigidities. They concern agreements about the division of the value of output.» Hence they can lead to a «speculative gain to the one party and speculative loss to the other» (Hutt 1995, p. 401). Therefore, there can be constant changes in real wages (and all other real factor incomes), but there is no systematic economic law that would say that these changes are always real wage increases. It is also possible that the parties of the wage contract will overestimate the price deflation. In this case real wages would fall. Both employers and employees anticipate future prices and take them into account when they make long-term contracts. Surely they can err, but in both directions, while general prices are falling or rising.

In any case, inflation is not a remedy against overly high real wages due to union privileges, since unions might try to anticipate the changes in the price level. In doing so, they may also overestimate the price inflation. If they overestimate the price inflation, there might be more unemployment than before (Röpke 1995, p. 378, and Hutt 1995, p. 400).

ERROR NUMBER 5: PRICE DEFLATION CAN PUT THE ECONOMY INTO A LIQUIDITY TRAP, I.E. A DISASTER

A liquidity trap is «a situation of several years with persistent deflation, deflationary expectations, zero interest rates, and ineffective monetary policy» (Svensson 1999, p. 222). Later on Svensson gives a valuation of the liquidity trap: «Still, given the potential harm a liquidity trap may cause,..., prepare for the worst.» How does he come to this conclusion?

In a liquidity trap, goes the argument, the typical Keynesian stimulation, — i.e. an increase in the money supply, which

«leads to a lower interest rate, which [in turn] leads to higher investment and hence greater aggregate spending,» (Krugman 1999, p. 2)⁷ — does not work anymore. This is because in an economy in a liquidity trap, the interest rate, already near zero, cannot be lowered and there is virtually no investment.. Open-market operations cannot increase investment, since «the private sector just holds the increased monetary base instead of bonds» (Svensson 1999, pp. 223).

Foreign exchange interventions are probably ineffective as well, since foreigners who believe in a further appreciation of the currency will also simply keep the new money. That explains why «both Europe and the United States fear that they too may fall into liquidity trap» (Krugman 1999, p. 2).

There are so many errors in that argument that its critique must be split up.

One part of the argument is that, if the nominal interest rate is close to zero, a deflation will lead to high real interest rates (Delong 1999, p. 6, and Taylor 2001, p. 41), because the nominal interest rate cannot become negative. So if the deflation is expected to go on, «the real costs of borrowing become prohibitive.» That «poses special problems for the economy and for policy» (Bernanke 2002, p. 3) because investments and spending decline.

Rothbard refutes the argument that there are overly high real interest rates and states that the natural rate of interest, i.e. the essential price differential, need not to be changed by a general expectation of falling prices. «...[T]o the extent that [deflation] is anticipated, [entrepreneurs] will hold money rather than buy factors. This will *immediately* lower factor prices to their expected future levels...» (Rothbard, 1993, p. 694).

⁷ This Keynesian reasoning is wrong, because an increase in the money supply through the loan market does not lead to more investments in form of real resources, but to malinvestments of these resources and higher nominal spending.

Partial anticipations accelerate the adjustment of the prices and reduce the purchasing-power component of the market interest rate. Of course, if not all entrepreneurs anticipate a price deflation, there could be loans with a positive nominal interest rate.

Therefore, a nominal interest rate close to zero in times of an anticipated deflation does not prohibit borrowing nor investing, since investments are determined by the natural rate of interest, i.e. the individual time preferences on the market (see Rothbard 2000, p. 40).

Another part of the liquidity trap argument is that spending gets postponed because of the deflationary expectations (Cargill 2001, p. 116). Again, this postponing of spending, i.e. speculation, would accelerate the price deflation to the expected level and speed up adjustments. This «hoarding» would lead to the desired increase in real cash balances through falling prices without any change in real income, if the consumption/investment proportion stays the same. «Furthermore, the demand for money could not be infinite,» (Rothbard 1993, p. 692) because everyone must consume sometime.

Another feared feature of the liquidity trap is that since the nominal interest rates are close to zero and due to the high real interest rates, the central bank has lost its power to use credit expansion to «stimulate aggregate demand» (Bernanke 2002, p. 3).⁸ Strangely enough, that is supposed to be an argument against price deflation. In the eyes of the central bank, redistribution of wealth by credit expansion has become useless. Therefore, the central bank, in fact, might abstain from

⁸ See also Svensson (1999, p. 225): «Fourth, and arguably equally important, the ineffectiveness of monetary policy removes all possibilities of using monetary policy for stabilization purposes.» It is hard to see why that would be bad, since «monetary policy for stabilization purposes» simply stands for interfering with market adjustments. And from the assumption that monetary policy making in times of deflation might be complicated does not follow that deflation is bad and must be prevented.

promoting further credit expansion. In this case, there will be no further distortions of the structure of production. Hence, there will not be further malinvestments that are ultimately doomed to be liquidated. In other words, the central bank will not initiate a boom bust cycle anymore.⁹

The economist who fears the liquidity trap because it hampers the opportunities of a central bank to «stimulate» the economy, does not see that in addition to its distributional effects, an increase in the money supply can only lead to an artificial lengthening in the structure of production. This distortion must be corrected by the liquidation of the malinvestments sooner or later.

CONCLUSION

There are widespread errors about deflation in the literature and in the general public as well. These errors have led to a strong anti-deflationary bias, even to a deflation phobia, which is, as we have seen, theoretically ungrounded. This bias has prevented a neutral evaluation of deflation. Therefore, an intensive new study of deflation seems to be necessary. In past studies the wrong questions were asked, i.e, how and if deflation can be prevented. These studies did not consider the more fundamental question, if there is something inherently bad in deflation. The five common errors discussed here do not hold as proof that deflation should be prevented. These five arguments do not prove that there is something inherently bad in deflation. Rather, the case can be made that deflation can be a fast, direct, smooth, and ethical means to a sound monetary system, by purging an unsound banking system and unsound investments.

⁹ Most writers still see a way to expand credit and get out of the liquidity trap. Finding a way out of the liquidity trap is actually the task that most writers want to solve. See for instance Goddfriend (2001, p.24) and Cargill (2001, p. 131).

Yet, in order to make this case, the theoretical analysis of deflation and the refutation of the fallacies concerning deflation should come first. In any case, every economist, especially he who deals with monetary policy or proposes monetary reforms, must abandon these common errors about deflation.

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REFERENCES

- BAGUS, Philipp (2004), «Deflation – When Austrians become Interventionists», *Quarterly Journal of Austrian Economics*, 6 (4), pp. 19-35.
- BEERNANKE, Ben S. (2002), «Deflation: Making Sure “It” Doesn’t Happen Here», speech before the National Economists Club. Washington, D.C. November 21, 2002.
- BYE, Raymond T. (1944), *Principles of Economics*, 4th ed., F.S.Crofts & Co: New York.
- CARGILL, Thomas F. (2001), «Monetary Policy, Deflation, and Economic History: Lessons for the Bank of Japan», *Monetary and Economic Studies (Special Edition)*, Institute for Monetary and Economic Studies, Bank of Japan.
- COLANDER, David C. (1995), *Economics*, 2nd ed., Irwin: Chicago.
- DELONG, Bradford J. (1999), «Why We Should Fear Deflation», *Brookings Papers on Economic Activity*. March 25-26, 1999. Post-meeting draft.

- GOODFRIEND, Marvin (2001), «Financial Stability, Deflation, and Monetary Policy», Federal Reserve Bank of Richmond Working Papers No. 01-01.
- HAHN, Albert L. (1956), *Common Sense Economics*, Abelard-Schumann: New York.
- HOPPE, Hans-Hermann. (2001), *Democracy The God That Failed*, Transaction Publisher: New Brunswick, New Jersey.
- HUERTA DE SOTO, Jesús (2005), *Dinero, Crédito Bancario y Ciclos Económicos*, 3rd ed., Unión Editorial: Madrid. English edition, *Money, Bank Credit and Economic Cycles*, Ludwig von Mises Institute: Auburn, Alabama (2006).
- HÜLSMANN, Jörg G. (2004), «The Optimal Quantity of Money», *Quarterly Journal of Austrian Economics* 6 (4), pp. 61-72.
- (2003), «Deflation and Liberty», unpublished manuscript.
- HUTT, William H. (1995), «The Significance of Price Flexibility», pp. 386-404 in: H. Hazlitt (Ed.), *The Critics of Keynesian Economics*, The Foundation for Economic Education: New York.
- (1979), *The Keynesian Episode*, Liberty Press: Indianapolis.
- KENT, Robert P. (1966), *Money and Banking*, Holt, Rinehart and Winston Inc.: New York-Chicago-San Francisco-Toronto-London.
- KEYNES, John M. (1963), *Essays in Persuasion*, The Norton Library: New York.
- (1996), *Breve tratado sobre la reforma monetaria*, Fondo de Cultura Económica: México.
- (1936), *The General Theory of Employment Interest and Money*, Harcourt, Brace & World, Inc: New York.
- KRUGMAN, Paul (1999), «Can Deflation Be Prevented»: <http://web.mit.edu/krugman/www/deflator.html>.
- MELTZER, Alan H. (2000), «Monetary Policy In The New Global Economy: The Case of Japan», *Cato Journal*, Vol. 20, No. 1.

- MILLER, Merton H., and UPTON, Charles W. (1986), *Macroeconomics: a Neoclassical Introduction*, University of Chicago Press: Chicago.
- MISES, Ludwig von (1949), *Human Action*, Yale University Press: New Haven.
- (1981), *Theory of Money and Credit*, LibertyClassics: Indianapolis.
- RÖPKE, Wilhelm (1995) «The Economics of Full Employment», pp. 362-386 in: H. Hazlitt, *The Critics of Keynesian Economics*, 2nd ed., The Foundation for Economic Education, Inc.: New York.
- ROTHBARD, Murray N. (1990), *What Has Government Done to Our Money?*, 3rd ed., Mises Institute: Auburn, Alabama.
- (1993), *Man, Economy, and State*, Mises Institute: Auburn, Alabama.
- (2000), *America's Great Depression*, Mises Institute: Auburn, Alabama.
- SHIRATSUKA, Shigenori (2000), «Is there a Desirable Rate of Inflation?», *IMES*, Discussion Paper No. 2000-E-32, Bank of Japan.
- STIGLITZ, Joseph E. (1993), *Economics*, 1st ed., W. W. Norton & Company: New York-London.
- SVENSSON, Lars E. O. (2000), «How Should Monetary Policy Be Conducted in an Era of Price Stability?», Working Paper, NBER, No. w7516.
- TAYLOR, John B. (2001), «Low Inflation, Deflation, and Policies for Future Price Stability», *Monetary and Economic Studies* (Special Edition), Institute for Monetary and Economic Studies, Bank of Japan.
- TIGGES, Claus (2004), «Das Märchen von der Deflation»: <http://www.faz.net/s/RubEC1ACFE1EE274C81BCD3621EF555C83C/Doc~E67E3D2BA15CE440297173EB41B790031~ATpl~Ecommon~Scontent.html>.