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Deflation and Japan Revisited

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Abstract:

Deflation counts among the worst things that could happen to an economy, the conventional wisdom tells us. But are falling prices really that bad? According to the Austrian School of Economics, this is not necessarily the case. A distinction is commonly made between (1) growth, (2) cash-building, (3) bank credit and (4) confiscatory deflation. When it comes to the first three kinds, falling prices are regarded as benign free market responses to changing circumstance, whether these are positive or negative by themselves. When it comes to the latter, it is often regarded as something negative.

Lately, the word deflation has become almost synonymous with Japan and its economic problems. In this paper, the development of the Japanese economy of 1990-2001 is revisited. While consumer prices fell in 1995 and 1999-2001, if other prices are taken into account, it appears that the overall price level actually fell during most of the years throughout the period, 1997 and 2000 being exceptions. When it comes to the causes of the deflation, any confiscatory deflation created by the government is ruled out, since the money supply has been rising throughout the period. Instead, it is suggested that the deflation of 1994, 1995 and 1996 was exclusively caused by rising supply, i.e. there was growth deflation. This could also have been the case in 1991 and 1992, but the evidence is somewhat inconclusive. Moreover, deflation in 1993, 1998 and 2001 appears exclusively to have been caused by falling aggregate demand, suggesting cash-building or bank credit deflation. Finally, deflation in 1999 might have been caused by a combination of growth, cash-building and bank credit deflation. In all of these cases, the falling prices are to be regarded as benign.

Although based on the same set of data, these findings diverge sharply from the official Japanese view of the economy at the time. This is ascertained by studying the official records of the time the consumer price index moved into the negative domain for the first time recorded. Instead of seeing this as something possibly benign, the conventional fear of deflation on the part of the Bank of Japan came to dominate its actions. And if it is true that falling prices are a benign response to the changes that actually occurred in Japan at the time, then any measures taken to make prices not fall cannot be of the benign nature. And if there were one thing most economists would agree on it would probably be that Japan's economic malaise is not over. This seems to be an important lesson for the future – preventing a free market adjusting, including deflation, to changing circumstances could possibly prevent or prolong a recovery.

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1 Introduction

Deflation counts among the worst things that could happen to an economy, the conventional wisdom tells us. Lately, the word deflation has become almost synonymous with Japan and its economic problems. But are falling prices *really* that bad? According to the Austrian School of Economics, this is not necessarily the case. In fact, falling prices are in most cases regarded as benign.

With this view, the development of the Japanese economy of 1990-2001 is revisited. Among other things, it is found that the deflation at times was a consequence of rising aggregate supply while at other times of a combination of cash-building deflation and bank-credit deflation, all of which are regarded to be basically benign free market responses to changing circumstance (whether good or bad).

Although based on the same set of data, these findings diverge sharply from the official Japanese view of the economy at the time. This is ascertained by studying the official records of the time the fear of deflation first emerged.

This paper proceeds by in more detail explaining the view on deflation and aggregate price determination relied upon. Then some facts about the development in Japan 1990-2001 are provided, together with an extensive interpretation of these. This is followed by a closer examination of the official Japanese interpretation, contrasting it with my own views. Finally some concluding remarks are made.

2 Some Theoretical Remarks

Adherents of the Austrian School of economics usually define deflation and inflation in terms of changes in the overall money supply, while the mainstream definition refers to changes in average prices. To avoid confusion, I will stick to the mainstream definition, thus defining deflation as falling average prices.

An attempt to present an Austrian state of the art on deflation was recently made by Salerno (2003). He classifies the causes of falling prices as follows: (i) growth deflation, (ii) cash-building deflation, (iii) bank credit deflation and (iv) confiscatory deflation. The first two operate on the demand side of the “money relation”, while the latter on the supply side. Salerno concludes that the first three causes, in a free market of voluntary cooperation, are benign responses to changing circumstances, while the latter kind of coercive intervention in

the free market is basically bad. Note that this allows for the possibility that the changing circumstances themselves could be either good or bad.¹

Changes in the money supply tend to affect prices basically since it brings about changes the overall volume of spending. More money - more spending - higher prices, or conversely, less money – less spending – lower prices, would be a simple characterization of this view. This could be represented by the formula:

$$P = D / S \tag{1}$$

where P is the average price level, D the aggregate demand *in nominal terms* and S the supply of goods and services expressed *in physical terms*, all during a given period². Formula (1) tells us that the prices could fall in connection to (a) a rise in physical production and supply of goods and services and (b) a fall in aggregate demand. The case of (a) would correspond to growth deflation, while (b) would be caused by either cash-building, bank credit contraction or government confiscatory deflation.³

Thus, according to the view adopted in this paper, deflation is not to fear from an economy-wide perspective, unless forcibly imposed on the free market by means of government intervention. With this in mind we can revisit the Japanese experience.

3 Analyzing the Japanese Deflation

To see how the Japanese economy developed during the 1990-2001 period, we could start by focusing on aggregate demand and prices. When it comes to aggregate demand, this paper will rely on the Gross Domestic Revenue (GDR) gross measure of nominal spending, as outlined by Reisman (1996). This measure differs from the widely used Gross Domestic Product (GDP) measure in that it includes not only (i) gross investment expenditure on fixed assets, but also (ii) gross investment on inventories and work-in-progress, as well as the (iii) current business expenditure that is charged off in the year it is incurred (as opposed to being amortized over a period of years)⁴. These three items are together referred to as *productive expenditure*. By taking the full productive expenditure into account (and not only one

¹ See Salerno (2003) for more on this. See also Rothbard (1962, pp. 672-75) and *The Quarterly Journal of Austrian Economics'* winter 2003 special edition on deflation. See also Reisman (2003) for slightly differing view, a view that will find some support in the evidence presented below.

² The formula was used already by the classical economists, see for example J. S. Mill (1848, Book III, Chapter II, §3).

³ Although the main determinant of aggregate demand would be the money supply, it is fully conceivable that in the short run, these magnitudes might move in opposite directions. It is of course also perfectly conceivable that changes in aggregate demand and aggregate supply could have a mutually offsetting influence on prices, as well as one of the two could be dominating in any particular instance. For example, it is conceivable that if for some reasons the aggregate demand would decrease by 6, 8 or 10%, and at the same time the aggregate supply decreases by 2%, the price level will fall by 4.1, 6.1 and 8.2%. We will see examples of both of these kinds of changes below.

⁴ This means that to the [gross investment in fixed assets = net investment + depreciation of fixed assets] and that gross investment in inventories and work-in-progress = net investment + cost of goods sold].

component of it as in GDP), some interesting facts fully in line with Austrian thought are revealed⁵.

Table 1 shows the changes in GDR as well as the Money Supply (MS - measured as M1), the Consumer Price Index (CPI) and the Producer Price Index (PPI)⁶.

Table 1 – Changes in GDR, MS, CPI and PPI, 1991-2001, %

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
GDR	5,7%	1,4%	-1,0%	0,8%	2,1%	2,8%	2,8%	-2,2%	-1,9%	1,6%	-0,9%
MS (M1)	8,8%	1,9%	3,4%	4,9%	12,8%	10,0%	8,9%	6,1%	11,8%	4,1%	13,6%
CPI*	3.3%	1.7%	1.3%	0.6%	-0.1%	0.1%	1.8%	0.6%	-0.3%	-0.7%	-0.7%
PPI**	-2.1%	-1.4%	-3.3%	-1.0%	-0.3%	-0.1%	1.6%	-4.4%	-1.5%	1.1%	-0.9%

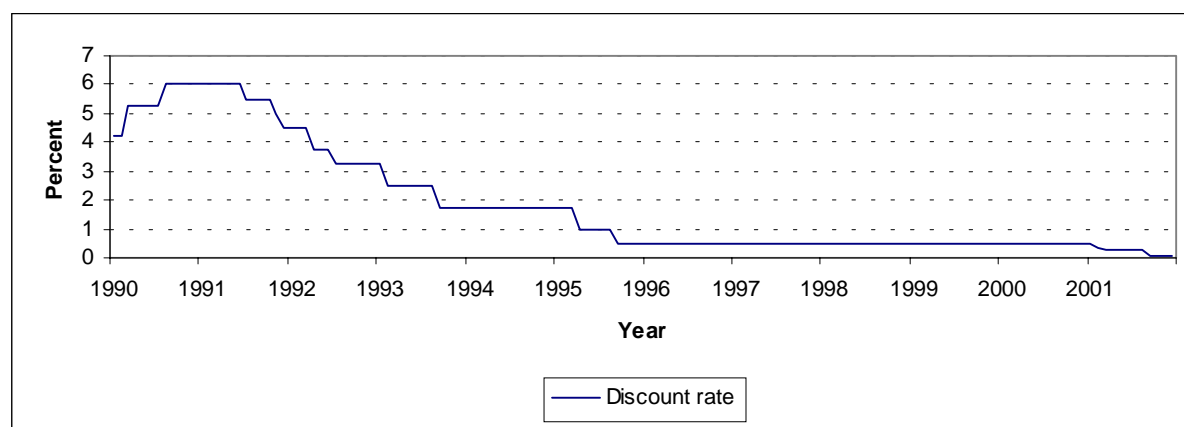
Sources: Economic and Social Research Institute and own calculations (GDR), Statistics Bureau, and Statistics Center, Ministry of Public Management, Home Affairs, Posts and Telecommunications, Government of Japan (CPI) and Bank of Japan (MS and PPI).

Notes: *Yearly average, y/y figures **End of year y/y figures.

From the GDR data we can single out 1993, 1998, 1999 and 2001 as years when the aggregate demand fell, i.e. these were years of deflationary pressure. The rest of the years should then be years of inflationary pressure.

From the money supply data, it appears the Bank of Japan (BoJ) did its very best to make sure that the money supply was inflated during the period. Evidence of this is the aggressively loose monetary policy conducted including consecutive rate cuts down to record low levels, as shown in figure 1.

Figure 1 – The Bank of Japan discount rate, 1990-2001



Source: Bank of Japan

⁵ See Appendix for more about GDR and its relation to GDP. The GDR measure is approximately 2.5 times as larger than GDP. During the period at hand, GDR was more volatile than GDP. The changes were of the same sign and more or less of the same order, except in 1993 when GDP increased by 0.7 % while GDR fell by 1.0 %.

⁶ PPI as represented by the Overall Wholesale Price Index (OWPI). The OWPI is the weighted average of the Domestic Wholesale Price Index (DWPI), the Export Price Index (EPI), and the Import Price Index (IPI). The OWPI focuses on the prices of goods traded among corporations.

This means that we actually could exclude the fourth cause of deflation discussed above, namely the confiscatory deflation where there is a contraction in the money supply brought about by government intervention. Thus, we only have to consider the other three benign causes of deflation.

When it comes to prices, we see that consumer prices fell in 1995, 1999, 2000 and 2001, and rose in all the other years. Producer prices fell every year during the period except in 1997 and 2000 when they rose. As productive expenditure accounts for roughly ¾ of the overall GDR expenditure (see Appendix), we can make the rough conclusion that overall prices seem to have fallen in 1991, 1992, 1993, 1994, 1995, 1996, 1998, 1999 and 2001, i.e. all years but 1997 and 2000. On top of that, prices of real estate have fallen every year during the period and the average price of a share at the Nikkei stock market has fallen by over 70 percent (while, interestingly, the trading volume has risen by over 80 percent).

Thus, the signs shown in Table 2 are implied.

Table 2 – Sign of Changes in money supply, prices and aggregate demand, 1991-2001

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Money Supply	+	+	+	+	+	+	+	+	+	+	+
Aggregate Demand	+	+	-	+	+	+	+	-	-	+	-
Prices	-	-	-	-	-	-	+	-	-	+	-

From this we could make the following preliminary conclusions. Deflation apparently was exclusively caused by rising aggregate supply in 1991, 1992, 1994, 1995, 1996, i.e. there was growth deflation, since aggregate demand was rising in these years. Deflation in 1993, 1998, 1999, 2001 could have been caused by any of the three causes under consideration, i.e. growth, cash-building or bank credit deflation.

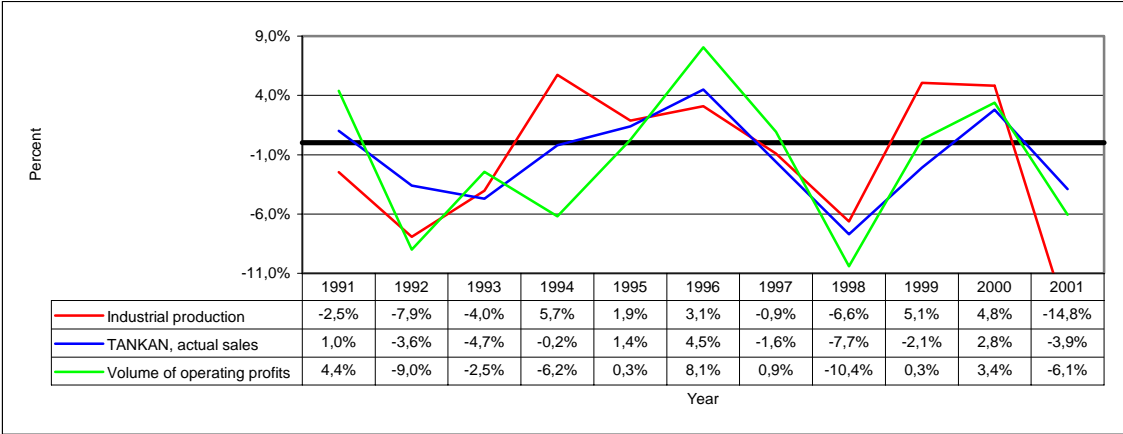
When it comes to the latter preliminary conclusion, it should be noted that we already have ruled out confiscatory deflation as a cause of the deflation. This would suggest that the combinations of deflation and falling aggregate demand displayed in table 2 would have been caused either by cash-building deflation or by bank credit deflation, likely both. It is clear that one major ingredient of the Japanese problems has been the banks so it seems likely that there have been at least some bank credit deflation. At the same time, we can't exclude the possibility of rising supply as part of the deflation.

There is some support for the preliminary conclusion that rising aggregate supply has caused deflation. For example, the Industrial Production Index (IPI) rose in 1994, 1995, 1996, 1999 and 2000, as shown in figure 2 (leaving the other figures on the side for a moment). This would suggest that at least in 1999, rising supply could have been among the causes of the

deflation. On the other hand, the fact that IPI didn't rise in 1991 and 1992 would contradict the first preliminary conclusion. Anyhow, we obtain these conclusions:

1. Deflation in 1994, 1995 and 1996 was exclusively caused by rising supply, i.e. there was growth deflation⁷. This could also have been the case in 1991 and 1992, but the evidence is somewhat contradictory.
2. Deflation in 1993, 1998 and 2001 was exclusively caused by falling aggregate demand, suggesting cash-building or bank credit deflation.
3. Deflation in 1999 might have been caused by a combination of growth, cash-building and bank credit deflation.

Figure 2 – Changes in Industrial Production, *Tankan* sales and volume of operating profits, Japan 1991-2001, %



Sources: Economic and Social Research Institute; Bank of Japan; Ministry of Economy, Trade and Industry and own calculations

When it comes to deflation related to a falling aggregate demand, there is a debate whether the falling demand could cause some serious economy-wide problems, and here we could provide some empirical evidence on this topic. On the one hand, Reisman (2003) argues that the contraction of the money supply and aggregate spending could cause, in all but the growth deflation case, sales revenue and profits to fall and this in turn creating debt repayment problems (however, the solution to such problems would still be falling prices). On the other hand, Bagus (2003, p.32) argues that there is no inherent reason why costs couldn't fall faster than prices, thus suggesting Reisman's argument is invalid. However, Bagus base his point on the idea that costs are equal to wage payments, which is far from true. Basic knowledge about income statements and balance sheets tells us that even in the case that a business would cut their wages down to zero, and even if all kind of spending would come to a halt, there would still be costs for the business in the form of depreciation against fixed assets and cost of goods

⁷ The perhaps most notable case of falling prices due to increasing production and supply would today be Mainland China. See for example Fed (2002b) and Lo (2003).

sold (if inventories are cleared). Thus, there is an inherent lag between on the one hand prices and sales revenue and on the other hand costs. It thus seems that there is some theoretical justification for Reisman's view. What about the empirical evidence?

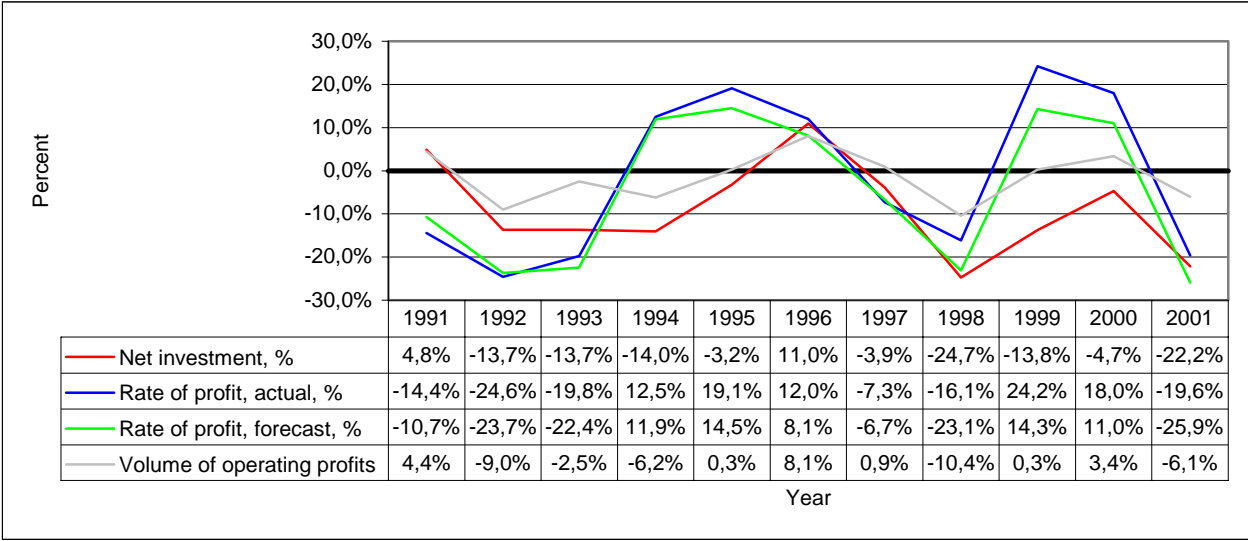
From figure 2 we see that sales and profits actually fell in the deflationary years of 1993, 1998 and 2001, when falling aggregate demand was the main cause of the deflation. Since 1994 was a year of growth deflation, the falling prices of 1993 actually appear to have been sufficient to overcome the problems. The same might hold for 1999 when IPI rose 5.1 percent, but evidence is not conclusive. 2002 falls outside of this study. Thus, while the data provide some empirical support for Reisman's view on the problems related to falling aggregate demand, it is interesting to note that there is nothing in the data that contradicts the idea that falling prices mitigate the problems with falling aggregate demand, sales, profitability and debt repayment.

Some further comments

Before turning to the official Japanese interpretation of the development during the period, it is possible to make at least three further interesting remarks. First of all, there is data that reveal something else of great importance – it proves that Japan has not been in a Keynesian/Hicksian 'liquidity trap'. The MEC and IS curve in the IS-LM analysis, i.e. the foundations of the idea of the liquidity trap, tells us that the relation between the rate of profit and net investment is negative. That is, when the rate of profit falls, net investment would rise, and *vice versa*. But by plotting the net investment against the rate of profit, both in terms of actual, forecasted as well as in the form of the change in the volume of profits, we see that it has been a far from clear negative relationship. In fact, it is tempting to rather draw the opposite conclusion, as the variables have moved closely together in Japan during the 1991-2001 period. Hence, the idea of the liquidity trap in Japan seems to be refuted.⁸

⁸ This helps explain why for example Krugman (1998b) has such problem of applying the liquidity trap on Japan. For example, he changes investment on the horizontal axis to consumption, i.e. the exact opposite. For more on the flawed idea underlying the liquidity trap myth, see Johnsson (2003).

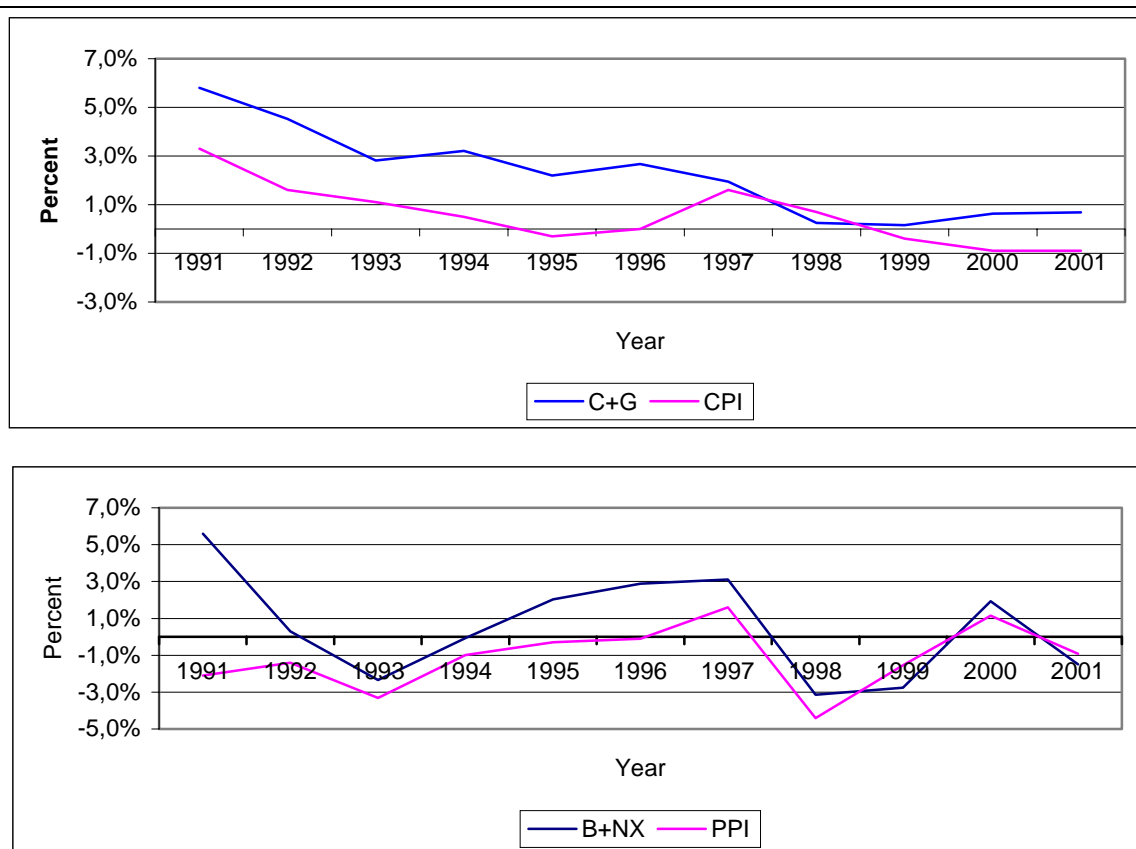
Figure 3 – Changes in Net Investment, changes in the volume of operating profits and the rate of profit, both actual and forecasted, Japan 1991-2000, %



Sources: Economic and Social Research Institute (net investment and volume of operating profits) and the *Tankan—Short-term Economic Survey of Enterprises in Japan* of the Bank of Japan (rate of profit)

Secondly, there is a further remark that seems to give credibility to the GDR measure, the use of formula (1) and hence my interpretation thus far. The changes in CPI and PPI could be interpreted by studying the parts of GDR expenditure made for the purpose of consumption and production, respectively. This follows since formula (1) could be applied to any part of the bulk of expenditure as well. Thus, we could compare the changes in the two different kinds of expenditure to the respective price changes (CPI and PPI). The upper part of Figure 4 shows the changes in consumption expenditure (C+G) and CPI while the lower shows the changes in productive expenditure plus net exports (B+NX) and PPI. Suddenly the changes in CPI and PPI appear to make some sense. They follow closely the changes in the respective kind of expenditure.

Figure 4 – Upper part: changes in private and public consumption expenditure (C+G) vs. Consumer price index (CPI), and Lower part: changes in productive expenditure and net exports expenditure (B+NX) vs. Producer price index (PPI), Japan 1991-2000, %



Sources: Economic and Social Research Institute, Bank of Japan and own calculations

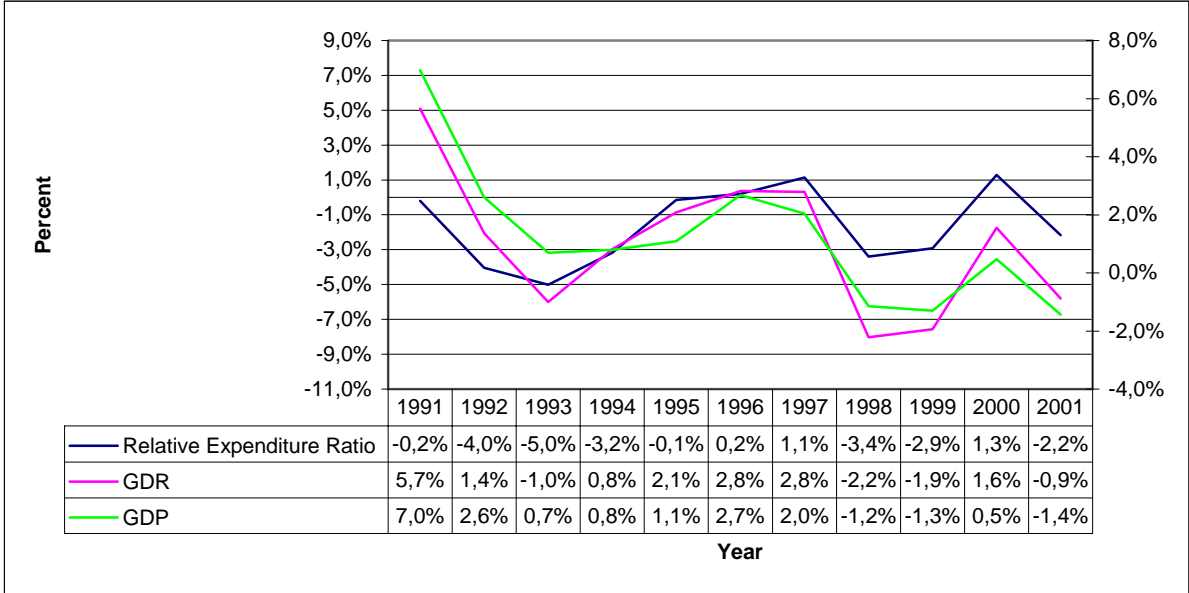
Thirdly, according to the Austrian School of Economics, one would have to study not only expenditure on and prices of the consumer's goods, but also on the expenditure on and prices of capital goods, to get a full understanding of the dynamics of an economy⁹. If for some reason people voluntarily choose to invest more funds in production, rather than consuming them, we might expect capital accumulation and that more will be produced in the future. In the same way as expenditure made for the purpose of consumption tends to make an individual poorer, *ceteris paribus*, and expenditure for productive purposes tends to make an individual richer, *ceteris paribus*, this also holds at an economy-wide level. While more overall expenditure on consumer's goods, at the expense of investment, certainly enriches the sellers of these goods, if it is continued, the capacity to produce capital goods is diminished. And since the consumer's goods are produced with the aid of such capital goods, also the production of consumer's goods will be diminished. Hence, consumption will after some time

⁹ This is often referred to as the structure of production. See for example von Strigl (1934, p.27), Rothbard (1962, Ch.5) or Garrison (2001, Ch.3). See also Reisman (1996, p.820-4 and 852-4).

have to fall. In line with this kind of reasoning, there is a clear distinction between consumer's goods and capital goods, on consumption and production or investment.¹⁰

One way to illustrate this is to relate the productive expenditure to the expenditure made on consumption. Defining the Relative Expenditure Ratio (RER) as the ratio between the [B+NX] expenditure and the [C+G] expenditure, the change in RER is given by figure 5. Interestingly, the changes in RER coincide with the changes in the overall level of GDR expenditure, also shown in figure 5¹¹. Moreover, the overall shifts in the structure of the (relative) expenditure also coincide with the major changes in industrial production, sales and profits shown in figure 2. Taken together, this seems to show the importance of studying the structure production.

Figure 5 – Change in RER (left axis), GDR and GDP (right axis), Japan 1991-2000, %



Sources: Economic and Social Research Institute and own calculations

That concludes my interpretation of the events from what basically is an Austrian perspective. Regardless of the underlying reasons, the fact that prices did fall during the 1990-2001 period seems to have been something good *per se*. And this brings me to the official Japanese interpretation of the event.

¹⁰ There is also an important distinction between different stages of production. The analysis of the Austrian Business Cycle Theory (ABCT) also is highly relevant for the causes of the occurrence of the economic problems in Japan in the first place. Following von Mises (1912), the ABCT shows how officially and newly created money and credit inflation without real backing creates a boom, a boom that necessarily must end in a bust as the money is wiped out. See von Mises (1936) for a short version. I would also like to mention analysis of Japan put forward by Bonner (2003), particularly the demographics.

¹¹ There is no circular reasoning here, since there is nothing that analytically says that the relation between the parts of the whole has to have anything to do with the change in size of the whole itself. I've included figures on GDP just to show how the changes in RER seem to predict changes in GDP as well. Since RER is based on GDR, this could be seen as yet another argument in favor of the use of GDR over GDP.

4 Official Japanese Interpretation

The great concern about falling prices and deflation did not start until 1995. The fall in CPI by 0.1 percent of this year was the first recorded decline since the current statistical survey began in 1970¹². It might prove useful to contrast the official view on this topic with my own findings. This could be made by simply studying the monetary and fiscal policy measures taken by BoJ and other official agents during the 1990-2001 period in response to what they perceived was going on in the country. Before doing that, it is important to note that there are some mainstream economists that claim that prices could fall because of increased productivity, i.e. due to positive “productivity shocks” and consequent “output gaps”. Thus, one would at least expect to find some discussions on this possible cause of the falling prices of 1995 in the official records.¹³

To gain a deeper understanding of what kind of reasoning they did base their actions on (like in figure 1 above), the BoJ *Quarterly Economic Outlook* for 1995 could be a useful source. In the February edition, we can read that “prices will be stable”, the decline in year-to-year domestic wholesale prices “will become smaller” and that “the rate of increase in consumer prices may virtually stop dwindling” (see Table 1 above). The outlook ends by noting that “in sum, Japan’s economy will probably continue to recover.” Hence, in February, BoJ seemed rather positive and this view comes from, among other things, the fact that they believed producer prices would stop falling and consumer prices to stop increasing at such a slow rate.

In the May edition, we can read that it appears “domestic wholesale prices have now stopped declining but are likely to go down again. The year-to-year increase in consumer prices will stay about zero as the increase in cheap imports will exert downward pressures on consumer prices, the so-called ‘price destruction’ phenomenon.” They continue by stating that, “in sum, [...] moderate economic recovery has been under way in Japan [...]. In these circumstances, the Bank of Japan [...] lowered the official discount rate by 0.75 percent point to 1 percent, on April 14 [...].” Hence, in May, BoJ seems to have believed that falling prices were so destructive as to prompt them to cut interest rates.

In the August edition, they start by noting that “economic recovery has paused in Japan despite expansionary forces that underlie the economy.” Furthermore, “prices are expected to continue a weak trend owing to the weak economic recovery” and “the declining trend of

¹² See BoJ (2000).

¹³ However, this view should not be mixed with the growth deflation (increasing aggregate supply) discussed above since increased productivity need not materialize into new goods and services. Historically, some of this increasing productivity has made it possible to afford more spare time.

domestic wholesale prices is expected to persist while consumer prices are also forecast to decrease somewhat year to year [...].” And in conclusion, “in these circumstances, the Bank of Japan, considering the influence that an excessive decline in prices may have on the economy,” they soon again lowered the discount rate down to 0.5 percent in September. “The effects of these monetary policy actions, combined with the easing in March and April 1995, are expected to contribute to the sustainability of economic recovery by stimulating demand [...],” the report ends. Thus, in August, they expressed the idea that price increases means a strong economy, and *vice versa*, and that the prospect of deflation needed to be combated by further rate cuts.

In the November edition, BoJ starts by noting that “the pause in Japan’s economic recovery continues.” They continue by noting that, “in addition, the ‘Economic Measures Toward Steady Economic Recovery’, announced on September 20, 1995 will add a substantial amount of public-sector investment and is expected to contribute significantly to the upturn of the economy in early 1996. Housing investment is also expected to recover in the fourth quarter of 1995 against the background of low interest rates.” They also declared that “prices are expected to remain unchanged or decline marginally.” In November, we once again see that they believed that prices weren’t rising because the economy had paused, and was in desperate need of some Keynesian stimulation.

Hence, from the 1995 Quarterly Economic Outlook we could conclude that the BoJ clearly expressed a fear of falling prices. Moreover, we could conclude that they had a true belief that typical Keynesian measures like increasing public consumptive expenditure (although it might be called investment), lowering interest rates and creating more money to increase private housing consumption (although they might call also this investment) would be enough to turn the economy around¹⁴. They clearly relied on the GDP measure, and its focus on consumption expenditure, as an indicator of whether the economy was doing well or not. Finally, BoJ did not take falling prices and a stable or increasing nominal GDP, i.e. a rising real GDP, as a good sign – the fear of falling prices seems to have hidden this fact. There was no discussion about any possibilities of “productivity shocks”, even though it was a fact that BoJ’s own Tankan index was rising, as did industrial production and profits. Thus, it appears BoJ even ignored some of the mainstream ideas on productivity-induced fall in prices. They simply appear to have believed that rising prices were good, falling prices bad.

¹⁴ See for example Herbener (1999) or Powell (2002) for more on the Keynesian and Monetarist interpretation of the Japanese economy.

In sum, it appears that it was the possibility of a fall in consumer prices *per se* that caused these concerns, because the size of the fall itself was close to zero (0.1 percent). This has deftly been named Apoplithorismophobia, or deflation-phobia, by Thornton (2003)¹⁵.

This interpretation of the situation stands in sharp contrast to my interpretation outlined above, even granted the fact that BoJ did not have the possibility of hindsight in the way I have had.

5 Concluding Remarks

What consequences might one expect from the official measures taken, based on the official interpretation? Well, if deflation really would be benign for the economy at large (except for confiscatory deflation), then we might expect that any measures taken to prevent prices from falling might be not so benign. And most of the official measures taken have indeed been aiming at keeping the growth in money supply, in aggregate demand and the level of price inflation up.

The result? It appears the official measures have been quite successful in their mistaken attempt to improve the economic situation – indeed, more money has been spent and things have generally become more expensive. But if there were one thing most economists would agree on it would probably be that Japan’s economic malaise is not over. This seems to be an important lesson for the future – preventing a free market adjustment to changing circumstances, including deflation, could prevent or prolong a recovery. Similar policy measures are most likely to fail in the future as well, despite the advice of some famous mainstream economists¹⁶.

As von Mises showed so long ago, government intervention in the economy tend to cause unintended problems, problems that later are used as excuses for further interventions. However caring and intelligent the individuals within the official bureaucracy, the ideas they base their decisions on appears not to measure up to any reasonable standards. Unfortunately, until a change of ideas occurs, the economic malaise of Japan is likely to continue.

¹⁵ Another example of this would be Fed (2002a).

¹⁶ According to Reuters on April 14, 2003, Nobel laureate and former World Bank chief economist Joseph Stiglitz the same day said “the Japanese government could stimulate domestic demand by printing money, in a form similar to U.S. treasury paper.” That is, above the money printing conducted by BoJ. According to popular economist and NY Times columnist Paul Krugman (1998a, 2001 and 2003), the problem is too little spending regardless of what kind, so that the spending in connection to the destruction of skyscrapers or even war is good for the economy.

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Appendix

For those familiar with the system of national accounting, it is known that to obtain the Gross Domestic Product (GDP) from the Net Domestic Product (NDP), the depreciation of fixed assets is added. If NDP is given by:

$$\text{profits} + \text{wages} = \text{NDP} = C + I + G + \text{NX} \quad (\text{A1})$$

where C is private consumption, I net investments, G public consumption and NX net exports (i.e. exports-imports), GDP is given by:

$$\text{profits} + \text{wages} + \text{depr. of fixed assets} = \text{GDP} = C + I + G + \text{NX} + \text{depr. of fixed assets} \quad (\text{A2})$$

On the other hand, GDR is obtained by adding business costs in accordance to the income statements of the period at hand. This means that, since [profits + business costs = sales revenue], that the counterpart of the left hand side of A2 becomes [sales revenue + wages]. This seems intuitively very appealing as a measure of gross income during a period, and certainly more intuitively appealing than the [profits + wages + depr. of fixed assets] of the GDP measure¹⁷. Thus, GDR is given by:

$$\text{sales revenue} + \text{w} = \text{GDR} = C + B + G + \text{NX} \quad (\text{A3})$$

where B is the productive expenditure, corresponding to (i) gross investment in fixed assets, (ii) gross investment in inventories and work-in-progress, and (iii) current productive expenditure.¹⁸

The Economic and Social Research Institute (ESRI), Cabinet Office, Government of Japan, publishes sufficient data for the computation of GDR. The result is shown in Table A1.

Table A1 – Japanese NDP, GDP and GDR, 1990-2001, Billion Yen

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
NDP	370 277	394 204	400 632	401 101	402 904	405 950	416 112	424 313	416 429	410 211	410 423	401 878
GDP	439 482	470 160	482 369	485 704	489 580	494 900	508 163	518 547	512 578	505 892	508 264	500 972
GDR	1 164 581	1 230 394	1 247 172	1 234 720	1 244 832	1 270 744	1 306 617	1 343 115	1 313 366	1 287 845	1 307 874	1 296 380
Private consumption	234 280	247 568	258 035	264 156	272 636	276 836	283 382	288 808	288 103	286 583	285 808	286 240
Public consumption	58 870	62 603	66 163	69 183	71 389	74 729	77 557	79 165	80 795	82 895	85 997	88 098
Productive Expenditure	825 567	873 556	875 687	857 272	856 538	873 950	896 117	919 069	889 417	867 224	880 814	869 475
Exports	45 863	46 668	47 288	44 109	44 270	45 230	49 561	56 074	55 051	51 144	55 256	52 567

¹⁷ Furthermore, it could be argued that in national accounting, either you should use a measure containing only gross terms (a gross measure), or a measure containing only net terms (a net measure). There could be no justification whatsoever for the use of a measure that contains a mix of net and gross terms (a gross net measure). The fact that the alleged gross measure of GDP contains a net term, net investment in inventories, seems to make it a totally flawed gross net measure. This is not the same as saying that GDR is the ultimate measure, though.

¹⁸ For more on this, see Reisman (1996), p. 702.