

Chapter 2

Economic Theories of Deflation

2.1 Introduction

Many economists have written about deflation or touched upon the subject in passing while focusing on their development of related monetary theories. My aim in this chapter is not to comment on every reference concerning the subject of falling prices. This endeavor would be virtually impossible. Rather, I provide an overview of the main currents and changes in economic theories of deflation. This overview aids in explaining how and when theories of deflation in economic thought were formed and why views on deflation have changed. To explain why certain theories of deflation and deflation phobia have emerged, I place special emphasis on the circumstances and backgrounds of these deflation theorists. My exposition of the theories of deflation proceeds mainly in chronological order; however, at times I will group theorists with similar views together, though they may not be contemporaries of each other.

2.2 Mercantilists and Deflation

In the Middle Ages, prior to the sixteenth century, hoarding, sticky prices, the fear of falling prices, and the need to stabilize the price level were not discussed and, thus, seem not to have been regarded as an urgent problem.¹⁵ Possible reasons for this disregard of deflation in the Middle Ages are that a money economy and credit money were not widespread. Instead, self-sufficient granges dominated the economy.

¹⁵ For example, John Locke argued that the money supply was irrelevant as any amount of money would be sufficient for the needs of trade (Locke [1691] 1824, p. 48).

Keeping their focus on monetary inflation, mercantilists are among the first to implicitly address the subject of deflation. According to mercantilist doctrine, a favorable balance of trade, i.e., an excess of exports over imports, would be beneficial for a country in terms of increasing its stock of precious metals.¹⁶ Mercantilists championed the accumulation of money as the best store of wealth and correspondingly feared the circumstances in which a country would be bereft of its money. Thus, they implicitly feared a monetary deflation. Mercantilists also touched upon the subject of hoarding. However, these theorists differed on the question of hoarding, forming two groups with regard to this particular manner.

One group, which included William Potter and John Law (1671–1721),¹⁷ argued that more money in “circulation” meant more trade. For them it was important that money was not sitting “idle” in a hoard but “circulating” and stimulating trade. Hoarding money could counteract the supposed benefits of inflation, as the new money would not be spent. Hoarding might hurt that at which inflation aims, namely, greater spending. Similarly Thomas Manley condemns the miser, because “money locked up in the misers’s coffers is like dung in a heap, it does no good, but being dispersed, and orderly disposed abroad, enricheth the land.”¹⁸ Accordingly, these authors condemned private hoards and anything that would keep bullion from circulating as harmful.¹⁹ Therefore, we have here one of the first incidents in which hoarding is considered ruinous.

The second group, included the likes of Sir Francis Bacon (1561–1626), Gerrard de Malynes (1586–1641), Thomas Mun (1571–1641), and John Briscoe,²⁰ who regarded the hoarding of precious metals be it as state treasure or as private stores of wealth as something very beneficial. Likewise, they considered money the best store of wealth. Hence, the increase of money in the economy meant an increase in the accumulated wealth of society and was regarded as something good. For this group, savings in the form of accumulation of precious metals was the primary aim

¹⁶ Viner ([1937] 1975, p. 6).

¹⁷ See Viner ([1937] 1975, pp. 36–37). These two authors, not surprisingly, were also advocates of paper money. Concerning two strands of mercantilists, see p. 40; See Rothbard concerning Law (2006a, p. 330) and concerning Potter’s opposition to hoarding and of Potter as proposing one of the most odd theories of price deflation (p. 328). In one of the most curious lines of reasoning in the history of economic thought, Potter claimed that an increase in the amount of money could stimulate production to an extent that prices would fall. He obviously, did not see any problems in a price deflation stemming from monetary inflation.

¹⁸ Manley (1669, p. 53).

¹⁹ (Viner [1937] 1975, pp. 45–46); Later, when mercantilism was already in retreat, David Hume would still condemn state hoarding as “a practice which we should all exclaim against as destructive, namely, the gathering of large sums into a public treasure, locking them up, and absolutely preventing their circulation” ([1752] 1826b, p. 361).

²⁰ (Viner [1937] 1975, pp. 8–9, 23–24, 26, 49); Even though neither were mercantilists, both Richard Cantillon and Jacob Vanderlint advised the king to hoard money in order to keep prices low and competitive. See Rothbard (2006a, pp. 333–334).

of economic activity. The doctrine of thrift was inspired by Puritan moral and religious principles.²¹

2.3 Classical Theories of Deflation

2.3.1 *Deflation and Early Classical Economists*

Early classical economists generally do not approach deflation as a problem, nor do they discuss it in great detail, if it is considered at all. For example, Adam Smith discusses the effects that division of labor has on output without ever discussing the fall of prices. Therefore, we are faced with two possibilities concerning early classical economists: Either these authors did not foresee any problems caused by price deflation worth discussing, or they were not aware of the fact that economic growth can cause prices to fall, this last scenario being highly unlikely. However, some of these economists do touch upon deflationary processes.

One incident where a price deflation occurs is the specie-flow-price mechanism of the classical gold standard first described by Richard Cantillon (1680–1734).²² Cantillon concentrates on the increases in the amount of money. He points out that changes in the money supply affect prices differently over a prolonged period of time, leading to a redistribution in favor of those economic agents that receive the new money first and a reallocation of resources in society. This effect is now called the “Cantillon effect.” Without explicitly describing the process of monetary deflation, his analysis seems to imply that decreases in the quantity of money have symmetrical effects. Though his analysis is quite detailed, he does not notice—or at least does not discuss—any problems concerning the flow of money into another country or problems concerning price deflation.

David Hume (1711–1776) is another famous exponent of the specie-flow-price mechanism. His treatment of the specie-flow-price mechanism, which we will consider shortly, is not as detailed as Cantillon’s analysis and is sometimes flawed, as he assumes that all prices rise in proportion to increases in the money supply. Yet, in contrast to Cantillon, Hume considers various kinds of deflation. More specifically, he describes price deflation caused by economic growth, price deflation caused by an extended use of money, and price deflation caused by a reduction in the supply of money.

²¹ “The doctrine of thrift also led to emphasis on the importance of a favorable balance of trade through another chain of reasoning” (Viner 1975, p. 30) Viner explains that “[t]he disparagement of consumption and the exaltation of frugality and thrift were common doctrines of the period, not wholly dependent upon economic reasoning but deriving much of their vitality from moral and religious principles and class prejudices. The Puritans disapproved of luxury. . .” (p. 26).

²² (Cantillon [1755] 1959, pp. 159–199); Cantillon wrote his treatise around 1730, but it was not published until 1755.

First, Hume does not devote much analysis to price deflation caused by economic growth, but he does mention this: “It seems a maxim almost self-evident, that the prices of every thing depend on the proportion between commodities and money. . . . Increase the commodities, they become cheaper.”²³ In this brief mention of growth deflation, Hume fails to mention any reservations or fear concerning a price deflation. Second, Hume discusses a second kind of price deflation caused by an extended use of money or the emergence of money substituting barter:

... [T]he sphere of circulation is enlarged; it is the same case as if that individual sum were to serve a larger kingdom; and therefore, the proportion being here lessened on the side of money, every thing must become cheaper, and the prices gradually fall.²⁴

Again, we must note the absence of a problematization of price deflation.

Third, Hume discusses price deflation caused by a reduction in the supply of money, considering both one-time reductions and continuous reductions in the money supply. The consideration of a one-time reduction in the money supply is found in his analysis of the specie-flow-price mechanism in “Of the Balance of Trade.” In this case, he does not note any adverse effects of price deflation. This is particularly curious considering an example Hume provides, wherein he supposes that four-fifths of all money in Great Britain disappears over night. He claims that in such a case all prices would fall proportionately, inducing exports and thus replenishing the money stock.²⁵ However, he does not see this severe four-fifths price deflation to be problematic, or if he does, he does not discuss it.

Considering the evidence, we might note that classical economist David Hume does not see price deflation as problematic per se. Yet, and this comes somewhat as a surprise after the comments above, he does see continuous monetary deflation as problematic. While he argues that every quantity of money is optimal for the proper functioning of a monetary economy, changes in the quantity of money would have short-term effects. Thus, he states that increasing the quantity of money would lift the “spirit of industry in the nation.”²⁶ A decrease in the quantity of money would have the opposite effect.

A nation, whose money decreases, is actually at that time weaker and more miserable than another nation which possesses no more money, but is on the increasing hand. This will be easily accounted for, if we consider that the alterations in the quantity of money, either on one side or the other, are not immediately attended with proportionable alterations in the price of commodities. There is always an interval before matters be adjusted to their new situation; and this interval is as pernicious to industry, when gold and silver are

²³ Hume ([1752] 1826a, pp. 326–327).

²⁴ Hume ([1752] 1826a, p. 329).

²⁵ (Hume [1752] 1826b, p. 351); Hume’s reasoning that prices would fall proportionately must be criticized. Even though all individuals would lose nominal money proportionately they might react quite differently to that incident. He does not concentrate on the dynamic processes that are caused by reductions or injections of money in the real world but only on the long run price equilibria.

²⁶ Hume ([1752] 1826a, p. 324).

diminishing, as it is advantageous when these metals are increasing. The workmen has not [sic!] the employment from the manufacturer and merchant; though he pays the same price for every thing in the market.²⁷

Thus, in a certain way, Hume introduces a new assessment of deflation into economic thought. He sees it as being more problematic and employs the sticky price argument (i.e., deflation is harmful because some prices are rigid in that it is difficult for the prices to fall). Even though in the long run, a monetary deflation would be neutral, i.e., have no effect on real economic factors, in the short run there would be adjustment problems. More specifically, the process of monetary deflation would not be neutral in the short run. Hume's statement might be considered the first strong attack on monetary deflation in the history of economic thought. Yet, Hume does not understand that when all prices fall, both buying (monetary) costs and selling proceeds fall as well. This might be either pernicious or stimulating to industry, depending on how quickly buying and selling proceeds fall. In other words, there is no clear reason why buying costs should not fall faster than selling proceeds when the quantity of money diminishes. In sum, Hume's fateful assessment was to be the source of future arguments against monetary deflation, especially those arguments concerning the "spirit of industry" or rather, the motivational effects of deflationary policies on the actions of entrepreneurs.

One of the first classical economists to make an in-depth analysis of arguments concerning monetary deflation was Swedish economist Pehr Niclas Christiernin (1725–1799). Christiernin wrote during a period of monetary expansionism initiated by the Bank of Sweden in order to finance a government budget deficit, due mainly in part to the Seven Years' War (1756–1763).²⁸ Forming the Hat Party, privileged manufacturers and merchants, especially iron exporters, benefited from the inflation of money and credit. Their opposition, the Cap Party opposed these privileges and the monetary inflation. In 1765, the Cap Party rose to power and initiated a sharp monetary deflation accompanied by a price deflation. Favoring their deflationary course, the Caps stressed the redistribution argument,²⁹ claiming that deflation would reward those who had suffered losses during the previous inflationary period. In turn, those who had profited during the inflationary period, the wealthy merchants of the Hat Party, would suffer losses.³⁰

Curiously, Christiernin was one of the few Cap opponents of deflation. Reminiscent of one of Hume's analysis, Christiernin writes that

[i]t is easy for prices to adjust upward when the money supply increases, but to get prices to fall has always been more difficult. No one reduces the price of his commodities or his labor until the lack of sales necessitates him to do so. Because of this the workers must suffer

²⁷ Hume ([1752] 1826a, pp. 324–325).

²⁸ See Rothbard (2006b, p. 218).

²⁹ See Rothbard (2006b, p. 219).

³⁰ This is, of course, not necessarily so, but might be valid as a historical judgment for many individual cases.

want and the industriousness of wage earners must stop before the established market price can be reduced. ([1761] 1971, p. 90)

Christiernin's assessment that workers must first suffer hunger before they are willing to reduce their nominal wages appears to be extreme. Further, he does not explain why workers only demand excessively high wages in periods of price deflation but not during price inflation. Christiernin provides further arguments against monetary deflation. He argues that the consequent price deflation would have undesirable effects: unwelcomed inventory augmentations, increased real debts and bankruptcies, increased burden of taxes, credit crunches, a dampening of exports due to currency appreciation, and the idle hoarding of cash due to deflationary expectations. All this would lead to real spending that is short of its capacity.³¹ Christiernin ([1761] 1971, p. 91) also points out that as a result of price deflation, the Crown's debt would increase. He also states that debtors suffer losses in a price deflation. Drawing a connection between debtorship and the economic establishment, he seems to be aware that the economic establishment suffers losses in a price deflation, and would have profited from a monetary expansion, otherwise. He writes, "[a]lmost all landlords, merchants, iron masters, and manufacturers are debtors" ([1761] 1971, p. 92). As a consequence of his views, Christiernin favors stabilizing the value of the monetary unit, the Swedish daler, and in doing so, anticipates the views of the zero inflationists or price level stabilizers which will be analyzed shortly. Obviously, confronted with the choice of inflation or deflation, Christiernin would opt for the first.

Yet, we should remember that in his treatment of deflation, Christiernin is an exception, the odd man out, among early classical economists. Prominent classical economists like Adam Smith (1723–1790), David Ricardo (1772–1823), and Jean-Baptiste Say (1767–1832) do not discuss deflation as a problem even though they discuss deflationary processes. Thus, in *Wealth of Nations* Adam Smith describes reasons for economic growth but does not state that an increase in the money supply would be necessary to accompany this economic growth. Smith analyzes the advantages of an increase in the division of labor³² or of increased capital accumulation without making comments on negative effects of a possible price deflation.³³ Smith also points out that with an increase in the quantity of commodities and a constant money supply, the value of money increases. However, he does not address any problems with this process. On the contrary, he argues that the demand for labor increases due to this process.³⁴

Like Smith, David Ricardo is interested in the long run equilibrium price, and consequently, is not concerned with short term price deflation. In *The High Price of Bullion*, for instance, he points out that any level of money supply is optimal and a shortage of money simply does not exist:

³¹ See Humpfrey (2004, p. 17).

³² Smith ([1776] 1976), Book I Ch. I.

³³ Smith ([1776] 1976), Book II, Introduction.

³⁴ Smith ([1776] 1976, p. 356).

If the quantity of gold and silver in the world employed as money were exceedingly small, or abundantly great. . . the variation in their quantity would have produced no other effect than to make the commodities for which they were exchanges comparatively dear or cheap. ([1810] 2004, p. 53)

To the same extent he writes:

When the number of transactions increase in any country from its increasing opulence and industry—bullion remaining at the same value, and the economy in the use of money also continuing unaltered—the value of money will rise on account of the increased use which will be made of it, and will continue permanently above the value of bullion, unless the quantity is increased, either by the addition of paper, or by procuring bullion to be coined into money. There will be more commodities bought and sold, but at lower prices; so that the same money will still be adequate to the increased number of transactions, by passing in each transaction at a higher value. ([1816] 2004, p. 56)

Here, Ricardo concentrates on the long-term effects and sees no adverse effects in either a monetary deflation or in a price deflation. For him, the classicist, money is neutral. Moreover, similar to Smith, Ricardo discusses processes with deflationary effects without regarding it necessary to discuss them in detail. For instance, Ricardo writes about the increases in wealth caused by increases in the division of labor due to international trade. In his example of international trade between two countries, the prices of the internationally traded goods fall in both countries.³⁵ However, Ricardo does not discuss this as problematic. Furthermore, Ricardo discusses the case where more abundant capital³⁶ and the introduction of machinery³⁷ lead to economic growth. Ricardo argues that costs of production determine prices and that machinery reduces the costs of production and thus indirectly the prices of commodities.³⁸ Thus, he speaks of causes of price deflation, namely economic growth, without being concerned about the phenomenon. However, because of his experiences, he would later come out against monetary deflation in certain circumstances, as we will see shortly. This indicates that in his later years he opposed, at least, this potential cause of price deflation.

French classical economist Jean-Baptist Say also writes about deflationary processes, following Adam Smith and David Ricardo that the division of labor results in an increase of production (1845, p. 91). He indicates its deflationary effects : “The division of labour cheapens products, by raising a greater quantity at the same or less charge of production. Competition soon obliges the producer to lower the price to the whole amount of the saving effected”(1845, p. 93). Say apparently does not see growth deflation as a problem.

In sum, Smith, Ricardo, and Say discuss processes (mainly economic growth processes) that could lead to price deflation without analyzing the question whether this would pose a problem to economic development. There are two possible

³⁵ Ricardo ([1817] 1973), Chap. VII.

³⁶ Ricardo [1817] 1973), Chap. XXI.

³⁷ Ricardo ([1817] 1973), Chap. XXXI.

³⁸ Ricardo ([1817] 1973), Chap. XXX, XXXI.

reasons for this. First, either they do not see any problems with deflationary processes or consider such problems not worth discussing. Or second, Smith, Ricardo, and Say are more concerned with the long-term “natural” equilibrium analysis. They analyze different long-term equilibrium states and are not concerned about the dynamic market process leading towards these states. The possible “intermediate” adverse effects of decreases in the quantity of money, consequently, are not discussed.

2.3.2 *Theories of Deflation After the Napoleonic Wars*

The theories of deflation and arguments against deflation spring from and surge in times of discontent as those suffering losses in a price deflation wish to profit by a credit expansion, i.e. monetary inflation. Thus, in the wake of a credit contraction in Great Britain new theories concerning deflation flourished. In 1798, in reaction to a threat of a French invasion, Great Britain went off the gold standard. Banks substantially expanded credit and increased the quantity of notes of the new fiat money. An artificial war-time boom ensued. After the war it became obvious that malinvestments had been undertaken and had to be liquidated. The corresponding credit contraction was accompanied by economic growth, and the expectation of a return to the old parity, leading to a strong price deflation.³⁹ During this period, many economists who had favored resumption of specie payment changed their position and argued against deflation. In these years fell the birth of a widespread deflation phobia that prevails in the profession until today. Not surprisingly, this was to the benefit of the establishment—mainly the companies with political connections that had made malinvestments during the inflationary war years. These companies favored easy money and inflation.⁴⁰ Thus, agriculturists who had indebted themselves by over-expanding production during the time of war strongly opposed the price deflation and agitated for monetary inflation. For instance, representing the Tory party and powerful aristocratic landlords, the *Quarterly Review* changed its initial position in favor of resumption of specie payments towards bitter attacks on price deflation.⁴¹

Concerning the new arguments against price deflation arising in this period, Jacob Viner ([1937] 1975, pp. 185–186) writes:

There was general agreement at the time that changes in price levels resulted in arbitrary and inequitable redistribution of wealth and income. There appeared, however, during this period some new arguments in support of the doctrine that falling prices had adverse effects on the *volume* of wealth and production which made them particularly undesirable, and that rising prices might bring advantages for production and wealth-accumulation to

³⁹ See Rothbard (2006b, pp. 203–205).

⁴⁰ See Rothbard (2006b, p. 204).

⁴¹ See Rothbard (2006b, p. 205).

compensate for their inequitable influence on distribution. The general trend of these arguments was such as to constitute at least a partial defense of the wartime inflation and to strengthen the opposition to resumption at the old par. (*Italics in original*)

Important for this period, therefore, are the new arguments against price deflation and their new quality. The emergence of bias in these arguments is related to the occurrence of a price deflation in this period that was to the detriment of many individuals. One of the first enemies of deflation is Thomas Attwood (1783–1859), as well as his brother Matthias. The Attwoods were both Birmingham bankers, and as such were inclined to be against deflation.⁴² Moreover, both of them “served as the spokesmen for the iron and brass industry”⁴³ of their home city Birmingham. Their father, the elder Matthias Attwood, was a steel manufacturer.⁴⁴ Birmingham had been a main beneficiary of the war years due to its steel and armaments industry. Those industries entered into crises at the end of the war, at which time an adaptation of the structure of production to peace time conditions began.

Thus, it is not surprising that Thomas Attwood denounced falling prices as a serious evil⁴⁵ that could only be prevented by installation of an inconvertible paper currency and the continuous increase of its supply. In *Prosperity Restored* (1817, pp. 78–79), he argues that falling prices when they do not affect all prices at the same time (obligations included), would be depressing on business because of problems for debtors⁴⁶ and adverse psychological effects in the form of failing confidence in property:

If prices were to fall suddenly, and generally, and equally, in all things, *and if it was well understood, that the amount of debts and obligations were to fall in the same proportion, at the same time*, it is possible that such a fall might take place without arresting consumption and production, and in that case it would neither be injurious or beneficial in any great degree, but when a fall of this kind takes place in an obscure and unknown way, first upon

⁴² Bankers fear price deflation because it may lead to defaults of their clients on loans and, thereby, losses.

⁴³ See Rothbard (2006b, p. 205).

⁴⁴ See Fetter (1964, p. Viii).

⁴⁵ David Laidler (2000, p. 17) comes to a similar conclusion and explains the deflation aversion by Thomas Attwood and interest groups with ties to steel and agriculture as follows: “Agriculture was faced with foreign competition again [after the end of the Napoleonic Wars], while small arms manufacturing and the metal working trades associated with it saw a precipitous decline in demand for their output. In view of this, it was perhaps to be expected that the representatives of agricultural interests in Parliament were sometimes found attempting to obstruct the restoration of convertibility and the deflation that had to accompany it. Nor, since metal working was concentrated around Birmingham, is it surprising that this important city became the centre of a dissenting and, for its time, quite radical body of economic thought. The principal, and certainly the most able spokesman of so-called *Birmingham School* at this time was the banker Thomas Attwood.” (*Italics in the original*)

⁴⁶ Again, Attwood is speaking here in his own economic interest as he was himself a debtor. As Fetter, states: “As early as 1836, when the elder Matthias Attwood died, not only did the Attwoods have no net capital in the bank, but they were heavily in debt to it” (1964, Xxvii).

one article and then upon another, without any correspondent fall taking place upon debts and obligations, it has the effect of destroying all confidence in property, and all inducements to its production, or to the employment of laborers in any way.⁴⁷

In Thomas Attwood we can also find the sticky prices (wages) argument against deflation (Viner 1975, pp. 186–187). He argues that when there is a monetary deflation, prices must fall, but as wages do not fall, workers will become unemployed. His words resembling Christiennin's, he states that wages would only fall after an interval, when under the pressure of "intense misery" workers finally would agree to lower wages. As output and employment fall, a self-reinforcing downward spiral develops.⁴⁸ In a last effort to promote his policy recommendations, Attwood appeals to the ruling class. In a letter to the Earl of Liverpool he argues that price deflation would lead to misery and discontent in the population and that the social unrest might shake the throne of the king (Attwood 1819, p. 42).

Similar to Attwood's arguments are those offered by John Wheatley (1772–1832).⁴⁹ Wheatley does not see problems with growth deflation, i.e., falling prices caused by economic growth. Yet, he regards other incidents of price deflation as harmful, taking recourse in the sticky prices argument. Thus, he states that wages, rents, and taxes do not fall as long term contracts are difficult to change. This would cause distress to both farmers and manufacturers.⁵⁰ John Wheatley came from a prominent aristocratic military and landowner family. He had connections with West India trade and experienced personal financial difficulties.⁵¹ In view of his family background, Frank Fetter speculates that Wheatley was especially concerned about the conditions of agriculture and the landowner (1942, pp. 369–370).

Wheatley argues that falling prices would be much worse than rising prices. However, he does not see a growth deflation but rather a price deflation caused by monetary deflation as problematic, thereby anticipating the current commonly-held view that there is good price deflation (caused by economic growth) and bad price deflation (caused by other reasons):

When low prices proceed from an increase of produce, the amount of money continuing the same, they are good[;] they are good, because all receive the same income as before, and as that income will go so much further, all are benefited by the plenty that causes them. But when they proceed from a decrease of money, the quantity of produce remaining the same, they are an evil, because only those receive the same income who can legally demand a fixed sum; and all who derive a fluctuating income from agriculture and trade, sustain a loss according to their reduction. When they are occasioned by an increase of produce, the additional supply makes up for the deficiency of price, and the aggregate quantity sells for

⁴⁷ Quoted in Viner (1975, p. 186); italics in the original.

⁴⁸ See Humpfrey (2004, p. 28).

⁴⁹ See Viner (1975, p. 187).

⁵⁰ Similar sticky price arguments are employed by C.C. Western, George Julius Poulett Scrope (1797–1876), Thomas R. Malthus (1766–1834) and Henry Thornton (1769–1815). For the first three, see Viner (1975, p. 187), fn. 3. See also Thornton ([1802] 1978, p. 119).

⁵¹ See Fetter (1942, pp. 358, 361).

as large an aggregate sum, as the smaller quantity at high prices, without any diminution of income taking place.⁵²

Henry Thornton (1769–1815) fears a deliberately incited monetary deflation following a monetary inflation. He states that wages tend to adjust downward more rigidly than other prices resulting in distress for manufacturers. Workers would regard the price fall only as transitory and thus, not be willing to accept wage cuts. Thornton, in addition, brings up two other arguments against deliberate monetary deflation.⁵³ He argues that merchants in a monetary deflation would restrict their purchases in order to replenish their nominal cash balances that had fallen. This would have a depressionary effect on manufacturers. Then he refers to the inefficiencies that would be induced by the deflation-created idleness. Unsold goods would pile up to be dumped suddenly on the market when producers needed cash. He even opposes the outflow of gold through the specie-flow-price mechanism, (something that early classical economists thought to be the most natural process), and recommended the Bank of England to neutralize it through the issue of bank notes.⁵⁴ Concerning Thornton's interests as a banker, it is not so surprising that he worried about deflation.

George Julius Poulett Scrope⁵⁵ (1797–1876) is another author who feared a deflationary scenario. He writes that

epochs of general embarrassment and distress among the productive classes, accompanied...by a general glut or apparent excess of all goods in every market...are...occasioned by the force of some artificial disturbing cause or other. A general glut—that is, a general fall in the prices of the mass of commodities below their producing cost—is tantamount to a rise in the general exchangeable value of money; and is a proof not of an excessive supply of goods, but of a deficient supply of money, against which the goods have to be exchanged. ([1833] 1969, pp. 214–215)

Scrope implicitly assumes that prices of factors of production are sticky and cannot fall, while prices of consumption goods do fall. Therefore, prices of goods fall below their producing costs. Remedy in such a situation, from Scrope's point of view, is obviously an increase in the quantity of money.

Even strong proponents of the resumption of specie payment like David Ricardo or Edward Copleston (1776–1849) become less assertive about a pure gold coin standard due to their fear of deflation. Copleston emphasizes the agricultural distress caused by falling prices.⁵⁶ Ricardo⁵⁷ comes out in favor of a gold bullion

⁵² Wheatley (1816), *A Letter to Lord Grenville on the Distress of the Country*, p. 29 as quoted in Fetter (1942, p. 374).

⁵³ See Humpfrey (2004, pp. 20–22).

⁵⁴ See Rothbard (2006b, p. 175). In the famous Bullion Report, Thornton also argues for a devaluation of the pound to prevent a price deflation. See Rothbard (2006b, p. 195).

⁵⁵ George Julius Poulett Scrope, a son of a merchant, also married into an aristocratic family.

⁵⁶ See Rothbard (2006b, p. 209).

⁵⁷ As indicated above, Ricardo, in his theoretical long-term analysis, is not deflation-phobic. Only when it comes to practical policies in his time, does he become somewhat deflation-phobic.

standard which is easier for the banking system to inflate than a gold coin standard as only a few rich traders can use gold in transaction and resume their deposits in specie.⁵⁸ Moreover, Ricardo apparently wants to prevent a price deflation. He writes that he would never advise a government to restore the parity of a strongly inflated and devalued currency to its old levels. In a passage in a letter to John Wheatley, dated September 18, 1821 he writes that he:

never should advise a government to restore a currency which had been depreciated 30 % to par; I should recommend, as you propose, but not in the same manner, that the currency should be fixed at the depreciated value by lowering the standard, and that no further deviations should take place.⁵⁹

From this letter, one can deduce that it is the sudden and strong deflation that Ricardo opposes.⁶⁰ He considers a large deflation of 30 % to be too much, generating distress via price stickiness. A small gradual deflation, he does not regard as dangerous.⁶¹ We see, that after his experience of deflation following the Napoleonic Wars, even Ricardo, the resumption proponent, was not free from a deflation phobia.

In sum, before this period, next to no one had been worried about the phenomenon of falling prices in particular. The specie flows of the gold standard that would cause price deflation, apparently did not preoccupy theorists. The literature of the Bullionist controversy, however, brought up new arguments concerning deflation. Now, in the time of Britain's resumption of specie payment when prices in a contractionary recession fell and many manufacturers and agricultural interests⁶² favored monetary expansion, the first theories about deflation appeared. Agreeing with these later arguments, Viner supports those theorists favoring an inconvertible paper currency to overcome the mechanisms of the gold standard (1975, p. 217):

They presented valid and novel arguments for the economic advantages of the freedom afforded by an independent monetary standard to escape a deflation (or inflation!) induced by external factors, to cope with a deflation resulting from internal factors and intensified by the prevalence of rigidity downwards in the prices of the factors of production, and, in general, to provide a country with the quantity of means of payment deemed best for it as against having that quantity dictated to it by external factors beyond its control.

⁵⁸ See Rothbard (2006b, p. 207).

⁵⁹ Ricardo ([1821] 2004, p. 73).

⁶⁰ Also, Jean-Baptiste Say opposed the return to the old parity. He uses a legal argument, stating that debtors had to pay more than they owed if they had to pay back with the old parity. See Rist (1966, p. 184).

⁶¹ See Humphrey (2004, pp. 23–24).

⁶² Concerning manufacturing and agricultural interest groups, see Rothbard (2006b, p. 206). For instance, the landed aristocrat, the Earl of Carnarvon denounced the Resumption Act of 1819, as well as lower farming prices, calling for monetary expansion and fiscal policies as a remedy.

2.3.3 *Later Classical Theories of Deflation*

Robert Torrens (1834/1970) is one of the late classical authors who wrote about deflation. He feared that a protective tariff from a foreign country could cause price deflation at home. In this case a lowering of domestic tariffs would aggravate the downward pressure on prices as metals would be lost. In particular, he writes:

When, from foreign rivalry and hostile tariffs, a country begins to lose a portion of her former command over the precious metals, and to experience a contraction of the currency, a fall in prices, in profits, and in wages, and a falling off in the revenue, then, the lowering of import duties upon the productions of countries retaining their hostile tariffs, instead of affording relief, would aggravate the general distress, by occasioning a more rapid abstraction of the metals, and a deeper decline in prices, in profits, in wages, and in the revenue, accompanied not by a diminution, but an increase in the real extent of taxation. (Torrens [1834] 1970, pp. 28–29)

Thus, Torrens favors domestic tariffs. He hopes that those tariffs would bring back precious metals and thus prevent a price deflation. Torrens also employs the common arguments of increasing real burden of debts and sticky wages.⁶³

John Stuart Mill (1806–1873) continues the tradition of Adam Smith, David Ricardo, and Jean-Baptiste Say who discuss reasons for economic growth, but are not worried about growth deflation. In 1844, he comes out against the proposal to increase the money supply along with increases in output and increases in the use of money. He calls such proposals, as made for example by Sir Robert Peel, as degrading the standard (1844, p. 581). Hence, he is not afraid of a price deflation that can occur when output is growing and the money supply is constant. Furthermore, Mill writes that the division of labor increases productivity⁶⁴ and describes how large scale production increases productivity.⁶⁵ He also states that the progress of industry and population makes the costs of production fall⁶⁶ and refers to the contemporary situation of the world without being worried about the price deflation. He does not mention deflation as a threat in these circumstances.

In sum, we can find two lines of thought concerning deflation in classical economics. Along one line of thought, authors such as Smith, Ricardo, Say, and Mill do not see problems with a price deflation or, at least, do not see them worth discussing in their theoretical works and treatises. In the other line of thought, authors, starting with Hume and Christiernin, and followed by the British authors after the Napoleonic Wars, are more critical of price deflation. They regard price deflation as something harmful. This line of reasoning is inspired by the historical events of their time. Sometimes they had personal ties to those groups that suffered losses during the price deflations. In the following section, I will turn to the theories

⁶³ See Humphrey (2004, pp. 38–39).

⁶⁴ Mill ([1848] 1965), Book I, Chap. VIII.

⁶⁵ Mill ([1848] 1965), Book I, Chap. IX.

⁶⁶ Mill ([1848] 1965), Book IV, Chap. II.

of deflation of early neoclassical thought. Then I will analyze two groups of thinkers that reach back to classical economics.

2.4 Neoclassical Theories of Deflation

2.4.1 *Early Neoclassical Theories of Deflation*

Alfred Marshall (1842–1924) continues the classical line of economists like Adam Smith, David Ricardo, Jean-Baptiste Say or John Stuart Mill who do not treat deflation critically. As does Ricardo and Smith, Marshall concentrates on long run equilibria in his theoretical analysis. Possible transitional problems during price deflation are not discussed. Thus, a critical treatment of deflation by Marshall cannot be found. Only indirectly does he refer to price deflation when he writes about economic progress and falling costs.⁶⁷ In this context he does not talk about possible problems connected with economic progress and falling costs. Hence, one might assume that Marshall did not see any problems resulting from price deflation.

In early neoclassical theory, there is an important treatment of price deflation by Knut Wicksell (1851–1926). His case is curious as at several stages in his life, he defends different and apparently inconsistent theories of deflation. In his famous article “The Influence of the Rate of Interest on Prices” (1907) Wicksell reveals his theory of inflation and deflation. When the banking sector lowers the rate of interest below its normal level, i.e., the existing rate of profit or the natural interest rate, a credit expansion will follow and prices will keep rising. When, on the contrary, the banking sector raises the rate of interest above the natural interest rate, all prices will keep on falling. Prices fall because credits will be restricted and entrepreneurs will have less money to bid for factors of production. In other words, a credit contraction ensues.

Knut Wicksell’s assessment of price deflation is ambivalent and changes over time.⁶⁸ It seems that he did not hold a firm opinion on the issue of deflation. On the one hand, he argues that deflation leads to business stagnation, unemployment and falling wages ([1898] 1968, pp. 2–3). He also states that, possibly, the most important effect of a deflation would be its implications for taxation. Salaries of state officials would not decrease as quickly as other prices. Furthermore, the state’s creditor would claim a higher real stake, which in the end would mean higher taxation to repay government debts. In 1908, he argues that a falling price level disturbs entrepreneurial spirit and destroys many companies. In 1919, he states that falling prices would have a negative effect on production.

On the other hand, Wicksell argues that an announced and perfectly anticipated deflation would not have real effects when it is taken into account in all economic

⁶⁷ Marshall (1920), Book VI, Chaps. XII and XIII.

⁶⁸ Concerning Wicksell’s treatment of deflation, see Bioanovsky (1998).

contracts. Moreover, an unexpected but gradual deflation would not be too disturbing to the economy, either.⁶⁹ And after World War I he is in favor of a deflationary policy to bring Sweden back to the gold standard at the pre-World War I parity. He justifies his view by pointing out the importance of the constancy of the value of money for contracts. He takes recourse to economic history, stating that between 1873 and 1896, a long period of price deflation and a prospering economy had co-existed. Possibly inspired by the criticism of Eli Heckscher,⁷⁰ he argues that only companies with debts would suffer real losses in a general price deflation. Wicksell severely criticizes the view point that price deflation would lead to unemployment through wage stickiness. He wonders why workers would not be able to compare cost of living indexes with their nominal wages. Thus, he thinks workers, aware of the general price fall, would be willing to accept reductions in nominal wages. Wages would not be more rigid than other prices.

After the 1921–1922 Swedish depression, Wicksell's views concerning deflation turn more negative again. He explains the Swedish depression by the increase in real debts and by hoarding induced by the price deflation. As a consequence, Wicksell suggests indexing all money contracts. In sum, Wicksell argues that a perfectly anticipated deflation would be neutral. However, over time, he became influenced by historical events, and saw more practical problems with deflation like the effects of bankruptcy and hoarding, thereby, suggesting indexation of contracts.

The odd man out in this period is Silvio Gesell (1862–1930), who anticipates John Maynard Keynes in his theory of crises (2003, pp. 143–144): When production increases, and the stock of money fails to increase, prices tend to fall. As expectations of price deflation rise, money is hoarded or “buried.” Consequently, the demand for goods falls and the economic crises begins.

Gesell warns that preventing economic crises would require that prices never be allowed to fall (2003, p. 150). In order to achieve this, Gesell proposes his famous “Freigeld” (2003, pp. 179–240). The Freigeld is an inconvertible paper money that loses 0.1 % of its worth every week. With this measure, Gesell thinks that individuals will no longer hoard their money at home, as the money is losing value, but spend it as quickly as possible, thus preventing crises. The government issuing agency would then easily be able to stabilize the price level (2003, p. 187).

⁶⁹ An announced deflation cannot be gradual according to Gustav Cassel who argued that when a central bank would announce such a policy, demand would immediately contract and accelerate the fall in prices. The central bank would lose the control of the pace of the process. See Bioanovsky (1998, p. 248).

⁷⁰ See Bioanovsky (1998).

2.4.2 *Deflation and the Productivity Norm*

One important group of theorists does not see problems in a price deflation caused by economic growth: the productivity norm theorists. Proponents of the productivity norm argue that price-level changes should take into account changes in productivity.⁷¹ When productivity declines, prices should respond with a rise, and when productivity increases, prices should fall as a consequence. One of the first proponents of the productivity norm was Samuel Bailey (1791–1870).^{72,73} He argues that changes in the price level stemming from monetary causes would be harmful and lead to an unjust redistribution, while those redistributions caused by changes in productivity would not be unjust. Bailey was mostly interested in the question of justice in debtor-creditor relations. With a productivity norm, creditors would also participate in a productivity increase.

Later Alfred Marshall (1842–1924), Francis Edgeworth (1834–1926) and Robert Giffen (1837–1910) also embraced the productivity norm and did not see any problems with the contemporary fall in prices caused by economic growth.⁷⁴ Other prominent defenders of a productivity norm were Ralph Hawtrey (1879–1975) and Dennis Robertson (1890–1963). Hawtrey argues that a price index should reflect changes in the real costs of production. Otherwise, prices would deceive entrepreneurs and could cause economic booms or depression. A rise in productivity accompanied by prices that do not fall could lead to an unwarranted encouragement of entrepreneurs. Moreover, Hawtrey argues that there is no reason to exclude receivers of fixed income from productivity increases by monetary policy.⁷⁵ Arthur Pigou (1877–1959)⁷⁶ likewise sees no problem for the industry due to a productivity-caused deflation nor anything unjust in the redistribution from debtors to creditors.⁷⁷ Other economists in favor of a productivity norm were the Swedish economists Bertil Ohlin (1899–1979), Eli Heckscher (1879–1952),

⁷¹ See Selgin (1995, p. 707).

⁷² This implies that the productivity norm goes back to times of classical economics. It is discussed in this paragraph because in neoclassical economics, the productivity norm still plays a prominent role.

⁷³ See Selgin (1995, pp. 708–709).

⁷⁴ See Selgin (1995).

⁷⁵ See Selgin (1995, pp. 714–715).

⁷⁶ See Selgin (1995, p. 717).

⁷⁷ Pigou plays another important role in respect to deflation theories as the “Pigou-effect” is named after him. In a 1943 article “The Classical Stationary State,” Pigou argues that if the price level falls, real wealth, defined as government bonds and money supply divided by the price level, increases. Feeling richer (“wealth effect”), economic agents would increase consumption and thereby stimulating output and employment. The Pigou-effect was intended as a critique of Keynes’ *General Theory*. Through price deflation and the “wealth effect” an economy would be self-correcting when aggregate demand falls.

Gunnar Myrdal (1898–1987), and Erik Lindahl (1891–1960); the Austrian economists, Gottfried von Haberler (1900–1995) and Friedrich A. von Hayek (1899–1992)⁷⁸; as well as the American economists James Laurence Laughlin (1850–1933), Simon Newcomb (1835–1909), and Frank Taussig (1859–1940).⁷⁹

Taussig, for instance, argues that the money paid back to the creditor could buy more goods and services than when the contract was settled. However, due to the productivity increase, debtors would be able to pay back monetary units with a higher purchasing power. Their monetary income would not have fallen. Creditors should not be prevented from participating in productivity improvements.

As can be seen, especially in the nineteenth and early twentieth centuries, the productivity norm had numerous followers. Yet, after the Keynesian revolution, ever fewer economists defended the productivity norm. In contrast, the number of economists joining the zero inflation or price level stability camp, discussed in the next section, grew ever larger. Recently, the productivity norm was rediscovered by George Selgin (1997). In this respect, the productivity norm theorists are intimately connected with the free banking theorists, forming part of the Austrian School of economics, which is in favor of a fractional reserve banking system without a central bank. Free banking theorists are, thus, intellectual heirs of this tradition. They also regard falls in the price level caused by economic growth as not dangerous and recommend that increases in the demand for money or changes in the velocity of money be counteracted by changes in the supply of money.

2.4.3 Price Level Stability and Deflation

Indirectly, there are many authors who oppose price deflation as they argue for a stabilization of the general price level. Such proponents include among others Knut Wicksell (1851–1926), Gustav Cassel (1866–1945), Irving Fisher (1867–1947), Josiah Stamp (1880–1941), John Maynard Keynes (1883–1946) (at least in some of his writings), Carl Snyder (1869–1946), George Warren, and Frank Pearson, as well as contemporary economists like Robert Barro, Robert Black, Kevin Dowd, and Robert Hetzel.⁸⁰ They argue that the stability of output prices is necessary for general macroeconomic stability. In fact, they argue that stable prices would be necessary for rational economic actions.

⁷⁸ See the second edition of *Prices and Production* (von Hayek 1939, p. 124). Concerning the evolution of Hayek on this point from a proponent of a constant money supply to a proponent of policies which advocate adjusting the money supply to changes in the velocity of money, see Selgin (1999).

⁷⁹ See Selgin (1995). The list given by Selgin must be considered with caution. It is true that the mentioned authors saw no problems in a price deflation caused by economic growth. However, not all of them explicitly follow Selgin in his view that changes in the demand for money must be necessarily counteracted by monetary policy. As one example, see Hayek in his earlier works.

⁸⁰ See Selgin (1995, p. 705). According to Hülsmann (2006, p. 72), St. Thomas Aquinas was the first philosopher who postulated a stable purchasing power of money.

There are five basic arguments provided for price level stability or zero inflation.⁸¹ First, unanticipated price level changes would lead to unfair redistribution of wealth. Second, falling prices would hamper business and entrepreneurship and, therefore, should be prevented by expansionary monetary policy. Third, “menu costs” occur when prices are changed and price level stability, as it is argued, would minimize the “menu costs.” Fourth, the ability to predict the price-level is desirable. This would be the case under a zero inflation norm. A similar argument maintains that long-term uncertainty is to be reduced by stabilizing the price level. Thus, economic agents could better rely upon contracts in fixed money terms without having to fear unpredicted changes in the purchasing power of money. Finally, there is a fifth argument offered for a stable price level: the danger of monetary misconceptions. Thus, modern price stability champions or zero inflationists have put emphasis on the “money illusion.” In a money illusion economic agents confuse general price changes with relative price changes. When local prices rise they do not take into account that the general price level has changed. In order to avoid the money illusion zero inflationists want to avoid change in the price level altogether.

There are additional arguments for price level stability. The industrialist and banker Josiah Stamp (1932, p. 5) argues that price level stability could solve the most pressing social problems (of his time). Warren and Pearson write: “One of the most important problems in all human relationships is the establishment of reliable measures” (1933, p. 150). Regarding the problem of redistribution by price changes, these authors go so far as to state: “The solution of the problem of a stable measure of value will go far in establishing peaceful relations among men” (1933, pp. 151–152). From the argument for price level stability it follows that price deflation should be prevented. These authors advocate preventing price inflation as well. However, it seems that at least some of them regard price deflation as worse than price inflation and therefore the reason why these authors promote price stability policies.⁸² Along this line, Warren and Pearson write: “Any given amount of deflation is far more serious than the same amount of inflation” (1933, p. 180). Not surprisingly, these authors try to prevent all price deflation independent of its cause. Thus, Warren and Pearson explicitly discuss the allegedly negative effects of a price deflation caused by increases in productivity (1933, p. 156).

Let us now turn more closely to probably the most prominent proponent of price level stability: Irving Fisher. He has probably developed the most elaborate case for a stabilization of the purchasing power of the dollar and has analysed deflation vigorously. Therefore, we will take a closer look at his theory of deflation. He defines “relative deflation” as occurring when the circulation of money decreases relative to the circulation of goods, and when the price level falls (1928, p. 35). “Absolute deflation”, in turn, is a per capita decrease of circulating money (1928, p. 38). Fisher regards the dollar as the money yardstick that—as every standard—

⁸¹ See Selgin (1995, pp. 706–707) and Dowd (1995).

⁸² Josiah Stamp is such a case (Stamp 1932).

must be held constant. Thus, he regards inflation and deflation as equally harmful and delivers four typical arguments against deflation. He calls the redistribution between debtors and creditors a social injustice. He regards this redistribution as equivalent to a redistribution in society that occurs in a bank robbery. He also makes the argument (1928, pp. 91–92) that a money illusion occurs when business men calculate their profits in constant dollars. He argues, consequently, that in a deflation, entrepreneurs would unduly contract their business. He also states that workers become unemployed in a deflation (1928, p. 97). He, furthermore, argues that the before mentioned cases, i.e., the social injustice, the problems for businesses, and unemployment would cause social discontent with negative effects on economic output, in the form of strikes, sabotage, riots, violence and even Bolshevism (1928, p. 98, 103).

In his “Debt-Deflation Theory of Great Depressions” [1933] and *100 % Money* ([1935] 1945), Irving Fisher offers us his famous debt deflation theory. He argues that a euphoria caused by new opportunities with expected substantial profits, for example, induced by the development of new technologies, brings about an over-indebtedness. This over-indebtedness tends to lead to a liquidation that will alarm either debtors or creditors or both. Nine consequences will ensue: (1) distress selling created by debt liquidation; (2) a contraction of bank credits as bank loans are paid back and the velocity of money circulation is reduced; (3) a fall in the general price level caused by distress selling and contraction in bank credits; (4) bankruptcies and another fall in the net worth of businesses; (5) the decrease in profits; (6) as a consequence, a reduction in output and trade and increase in unemployment; (7) pessimism and lack of confidence; (8) subsequent hoarding and a further reduction of the velocity of money circulation; and (9) disturbances in the interest rates, namely the fall of nominal interest rates and the increase of real interest rates (Fisher 1945, pp. 122–123; 1933, p. 1). In the cumulative downward process, debts and deflation aggravate each other. The liquidation of debts will make the price deflation harsher and the price deflation makes it more difficult to repay debts as the purchasing power of the dollars rises even more. The liquidation feeds itself. Thus, the forerunner of the price level stability theorists, Irving Fisher, provides us with a vast array of arguments against price deflation and develops his influential debt-deflation theory. Unsurprisingly, Fisher had strong personal interests in monetary inflation.⁸³ During the Great Depression he agitated for inflation not only to reinflate stock prices, but also to be able to pay his debts, and save his wife’s family fortune, which was mainly invested in the major American company Allied Chemical. He would have been ruined by debt-deflation.

A somewhat similar approach is represented by monetary disequilibrium theorists like Leland B. Yeager (1986).⁸⁴ According to Yeager, a monetary disequilibrium occurs when there is a shortage or surplus of money at some given price

⁸³ See Rothbard (2002, pp. 453–456).

⁸⁴ Another case is Clark Warburton. See Cargill (1979, pp. 439–440). Warburton argues that prices are sticky in the short run, especially wages. A decrease in the money supply or a failure to adopt

level, which is regarded as rigid (1986, p. 370). Hence, we are confronted with the old price rigidity argument once again. Yeager writes that in a monetary disequilibrium, prices will change and “[t]hese price changes *tend* to correct or forestall the monetary disequilibrium but do not and cannot occur promptly and completely enough to absorb the entire impact of the monetary change and so avoid quantity changes” (1986, p. 373).

Yeager names three reasons why prices do not change immediately: First, there are fixed money contracts like wage and debt contracts that cannot be changed easily. Second, there are “menu costs” corresponding to the posting and negotiating of new money prices, which makes prices sticky in the short run. Third, sellers might be reluctant to lower (or change) their prices and do not easily see why they should accept lower ones. Yeager characterizes this taking of the lead in a downward price adjustment as a public good (1986, pp. 376–377). Sellers might even be aware of a monetary disequilibrium, for instance, a money shortage, and that prices must fall to correct it. But no seller wants to be the first in lowering his own product price but would rather that others cut their prices first.

As a consequence, Yeager argues that macro-economic disturbances could be reduced or avoided by avoiding those monetary disequilibria and adjustments in the general price level. Thus, Yeager argues that the nominal stock of money must be manipulated in a way so that the general price level remains constant.

2.4.4 *Keynes on Deflation*

Modern theories of deflation begin with John Maynard Keynes (1883–1946). Actually, he did not come up with many new arguments against deflation. Rather, he took the old ones, combined them, and developed a line of reasoning that would later come to be called the liquidity trap argument.⁸⁵ I will also analyze his influential theories concerning deflation in detail and then also consider the work of his adversary, the very influential economist Milton Friedman (1912–2006).

From the beginning of his career, starting with *A Tract on Monetary Reform* (1923), Keynes was deflation-phobic. We can find almost every important argument against deflation in his works. First, he regards price deflation as leading to an unjust redistribution which would harm borrowers ([1923] 2000, p. 39). Keynes clearly sees the redistribution going on in a price deflation, stating that price deflation always “involves a transference of wealth from the rest of the community to the *rentier* class.... In particular it involves a transference from all borrowers, that is to say from traders, manufacturers, and farmers, to lenders, from the active to the

the money supply to decreases in the velocity of circulation means a decrease in spending. Due to sticky wages, this leads to a decrease in business profits and, thus, to a further fall in total spending.

⁸⁵ The concept of the liquidity trap was formalized in Hicks’ (1937) classic article “Mr. Keynes and the ‘Classics’: A Suggested Interpretation.” The term liquidity trap, however, was first coined by Dennis Robertson, although in a different context. See Boianovsky (2004, p. 92).

inactive.”⁸⁶ He seems to imply that the economic function of lending would be less “active” or productive than the production or trading of other goods aside from future monetary units. Interestingly, in the context of redistribution, he explains the fact that we have had historically more periods of price inflation than periods of price deflation ([1923] 2000, p. 9) by “the impecuniosity of Governments and the superior political influence of the debtor class.” From the perspective of interest groups, it is thus clear for Keynes why the world has experienced price inflation. Price deflation is neither in the interest of a highly indebted government nor of the influential debtors class, consisting of big business.

Second, he ([1923] 2000, p. 144) argues that everyone will try to postpone their expenditures. Third, we find the sticky price argument when he writes that problems will occur when business and social arrangements inhibit prices from falling quickly enough ([1923] 2000, pp. 161–162). In *General Theory*, he argues that wages are sticky ([1936] 1964, pp. 232–233).

Fourth, he argues that deflation “means Impoverishment [sic] to labour and to enterprise by leading *entrepreneurs* to restrict production, in their endeavor to avoid loss to themselves; and is therefore disastrous to employment.”⁸⁷ Keynes argues that the expectation of price deflation hampers production for two reasons. First, it increases the real interest rate. The real cost of borrowing or the real burden of debt increases as money that must be paid back has a higher purchasing power. Second, as production takes time, and prices continue to fall there will be losses for businesses paying their production factors in the higher, still rigid prices and selling at the lower new prices. Thus, when the deflation is expected or anticipated, production will be inhibited ([1923] 2000, pp. 32–37, 144). Keynes’ view stands in contrast to other authors who regard anticipated deflation to be less harmful than he does.

The argument concerning social unrest is also not overlooked. Fifth, Keynes argues that deflation leads to social instability.⁸⁸ In 1931, Keynes makes a sixth argument, identifying another consequence of price deflation, that is nowadays often used as an argument against it, namely that it “threatens the solidity of the whole financial structure” (1931, p. 176).

Another point should also be made that Keynes regards price deflation as more harmful than price inflation, “because it is worse, in an impoverished world, to provoke unemployment than to disappoint the *rentier*.”⁸⁹

In 1930, Keynes continues his case against deflation, in *Treatise on Money*, repeating that price deflation would be more harmful than price inflation:

Since neither economists nor bankers have been quite clear in their minds as to the character of the causal process through which a reduction in the quantity of money

⁸⁶ (Keynes [1923] 2000, p. 143); Italics are in the original.

⁸⁷ (Keynes [1923] 2000, p. 39); Italics are in the original.

⁸⁸ See Keynes ([1923] (2000, p. 143); See also Keynes ([1925] 1963, p. 247).

⁸⁹ See Keynes ([1923] 2000, p. 40); Italics are in the original. See also p. 4.

eventually leads to a new equilibrium at a lower level of money earnings and of price, they have been apt to contemplate a deflation too lightheartedly (1971, p. 244).

He concludes his analysis: “I am doubtful, therefore, whether those are right who believe that a period of deflation generally does less harm than a period of inflation” (1971, p. 245). Keynes argues that if the money supply or the velocity of circulation falls, investments fall below savings. Windfall losses result, inducing entrepreneurs to reduce their spending on factors of production. Spending less, the owners of these factors will further reduce profits or increase losses. Prices continue to fall with the downward process ending when investments are finally equal to savings (1971, pp. 241–245).

Influenced by the developments of the Great Depression, Keynes continues his anti-deflation path in 1936, with the publication of *General Theory*.⁹⁰ His recommendations for getting out of the Great Depression are clearly anti-deflationary as revealed in his endorsement for expanding the money supply and engaging in expansionary fiscal policy.⁹¹ In the *General Theory*, Keynes argues that in the case of economic growth there are two options: Either one allows prices to fall and keeps wages stable, or one allows wages to rise and keeps prices stable. He argues that the second options would have the advantage of avoiding unemployment, reducing the burden of debt, and providing psychological encouragement that likely would be due to rising nominal wages.

As a seventh argument against deflation, which we find in the *General Theory*, Keynes revisits Mercantilist hoarding theories, particularly those which saw hoarding as something to be avoided.⁹² Keynes argues that with lack of effective demand (consumption and investment expenditures) caused by hoarding, an equilibrium with unemployment will prevail.⁹³ When sudden crises of confidence occur, the individual will not spend a larger part of his income on investments nor on consumption, but simply “hoard” the money. In other words, the “propensity to hoard” or the liquidity preference increases.⁹⁴ This, via the multiplier, would have “disastrous, cumulative and far-reaching repercussions” (Keynes 1964, p. 161). Hence, Keynes defends the Mercantilist anti-hoarding theories that make the demand for increases in cash balances responsible for economic crises. Monetary policy cannot stimulate the economy in a deflationary crises as the new money is hoarded and the nominal interest rate is close to zero. He is, thus, the father of the famous liquidity trap argument against deflation. In sum, many of the main arguments against deflation can be found in Keynes’ writings.

⁹⁰ Keynes ([1936] 1964, p. 271, 291).

⁹¹ See Skidelsky (2002, p. 99).

⁹² See Keynes (1964, pp. 344–345).

⁹³ See Keynes (1964, p. 30).

⁹⁴ See Keynes (1964, p. 207). Later this concept became famously known or described as the liquidity trap. For Keynes, the liquidity preference and propensity to hoard are essentially the same thing (1964, p. 208).

2.4.5 *Friedman on Deflation*

Before analyzing contemporary deflation theories, I will first turn to Nobel prize winner and influential economist Milton Friedman (1912–2006).

Friedman's view on monetary deflation can be inferred from his writings on the Great Depression. Friedman feared monetary deflation, in that he saw the monetary deflation of the Great Depression as the main cause of its severity.⁹⁵ According to Friedman, the Federal Reserve had not tried hard enough to prevent a reduction of the money supply, i.e., had allowed the money supply to shrink. The Federal Reserve allowed bank runs to occur and did not provide them with sufficient liquidity by granting the credits or by buying open market purchases. This caused the failure of banks and the reduction of the money supply as well, creating problems for other banks of which some also went bankrupt. As the money supply fell even further, businessmen could not get loans for investing or went bankrupt as loans were not renewed. Friedman alleges the Federal Reserve's inactive policy made the Great Depression far worse than it would have been. Otherwise, an ordinary recession would have followed the stock market crash. For him, a monetary deflation is a scenario which must be prevented.

2.5 Latest Theories of Deflation

2.5.1 *Fractional Reserve Free Banking School*

One contemporary deflation theory is proposed by the Fractional Reserve Free Banking School branch of the Austrian School. These economists are basically modern proponents of the productivity norm. For instance, George Selgin (1997) argues that growth deflation is something good and not harmful to the economy. Price deflation caused by economic growth would pose no problem for the economy. Any changes in the purchasing power of money caused by the goods side and not by the money side should not be counteracted by monetary policy.⁹⁶ A price change caused by productivity changes would contain important information about the price of outputs relative to inputs for economic agents and a counteracting monetary policy would undermine the accuracy of those price signals (1997, p. 23). Thus he writes: "...the price level should be allowed to vary to reflect changes in goods' unit costs of production. I call a pattern of general price level adjustments corresponding to such a rule for individual price changes a 'productivity norm'"(1997, p. 10)

⁹⁵ See Friedman (1968, p. 3) or Friedman and Schwartz (1971, p. 407).

⁹⁶ This is the difference of Selgin's position as compared to the view of the zero inflationists who advocate reducing any change in the general price level no matter what its cause is.

While productivity caused price changes should not be counteracted, price deflation caused by changes in the velocity of money should be counteracted by adjustments in the quantity of money. Selgin goes on: “Under a productivity norm, changes in velocity would be prevented (as under zero inflation) from influencing the price level through offsetting adjustment in the supply of money” (1997, p. 10). And he adds that the productivity norm “calls for monetary expansion to prevent any deflation not consistent with improvements in factor productivity” (1997, p. 59). This is so, because shifts in aggregate demand caused by a change in the velocity of money could lead to monetary misconception. For instance, economic agents might misconceive the general fall of the price level caused by a decrease in the velocity of money for a decline in the real demand for particular goods and services they provide.

Another author in this line of thought is Steven Horwitz. He explains in further detail why decreases in the velocity of money or increases in the demand for money should be counteracted by an increase in the money supply:

During the time it takes the price level to fall, firms will find themselves with unintended inventory accumulations, implying that *desired* saving (holding of gold) is not equal to *desired* investment. This further implies that increases in the money supply would be warranted in order to bring desired saving and investment back together. ... [T]here will be downward pressure on prices and, barring perfect price flexibility, a drop in output and employment. Free banking theorists argue that free banks will respond to this increase in demand by producing more bank liabilities, thus preventing the fall in output and employment that would otherwise result. (2000, p. 227)

Horwitz, like Selgin employs the additional argument that there is a prisoners’ dilemma with regard to which producer lowers his prices first in the situation of an increased demand for money: “[G]iven wage stickiness, it is in no producer’s interest to be the first to lower his prices. ... [F]inding the newly appropriate level of prices is a Mengerian discovery process and not an instantaneous shift” (2000, p. 229).

In sum, fractional reserve free banking theorists do not fear growth deflation but price deflation caused by an increase in the demand for money, or cash building deflation. For his policy recommendation of only counteracting changes in the demand for money, Selgin coins the term “productivity norm.” The free bankers, as well as productivity norm proponents, are therefore less deflation-skeptic than the many of their fellow economists who might recommend preventing any price deflation. However, except for growth deflation, free bankers recommend counteracting other causes of deflation. The solution they offer is a fractional reserve free banking system (Selgin 1997, p. 67).

2.5.2 *Liquidity Trap Theorists*

In the economic mainstream, there are basically two main strands in contemporary deflation theories. The first strand can be represented by economists who in some

way are inspired by Keynesian theories like Ben Bernanke, Lars E.O. Svensson, Marvin Goodfriend, or Paul Krugman. The first group fears that price deflation might put the economy in a liquidity trap and opposes all price deflation categorically. It represents the deflation phobia in its clearest form. The second strand has representatives like Claudio Borio, Andrew Filardo, Michael Bordo, John L. Lane, and Angela Redish.⁹⁷ Inspired by the Chicago School, the second group is more free market oriented. Bordo, for instance, received his doctoral degree from the University of Chicago. This group distinguishes between two types of deflation: good deflation and bad deflation. Its views are briefly presented in the section following our consideration of the liquidity trap theorists.

This first group of theorists fears a liquidity trap. For the liquidity trap group, deflation “is seldom benign” and even when stemming from a positive supply shock, can lead to a deflationary spiral of prices and output.⁹⁸ Svensson (2003, p. 145) states that it is uncontroversial to hold that a liquidity trap and deflation should be avoided. According to this view, unanticipated negative demand or supply shocks may cause recession and deflation. Also substantial realized or anticipated negative aggregate demand shocks like bursts of asset price bubbles, doubts about government policies, or corrections of overly optimistic expectations would lower inflation and output and their respective forecasts (Svensson 2003, p. 146). In this situation a central bank should lower interest rates to stimulate aggregate spending. However, there is a negative premium for deflation in the interest rates. In a price deflation nominal interest rates are already very low. It might be impossible to lower interest rates sufficiently as nominal interest rates cannot fall below zero. The central bank, as feared, has “run out of ammunition.” The real cost of borrowing will be on a level higher than is necessary to stimulate the economy.

Liquidity trap theorists argue that there is no way out of this situation via conventional monetary policies. The central bank can buy bonds from the public and enlarge the money supply, but the public will hold onto the money it receives, instead of spending it. Bonds and money are essentially conceived of as perfect substitutes as the nominal interest rate is zero. The recession and deflation can then be prolonged. In other words, the economy is stuck in a liquidity trap. The ineffectiveness of monetary policy is seen as a main threat of deflation.⁹⁹ Considerable intellectual effort is spent in finding ways out of a liquidity trap via inflation of the money supply.¹⁰⁰ These recommendations imply measures that give more spending power to politicians. Therefore, politicians have an incentive to adopt the

⁹⁷ For a book of selected essays that stand in this tradition, see Burdekin and Siklos (2004a). Good deflation is caused by a positive supply shock and bad deflation by a negative demand shock. In particular, see the Burdekin and Siklos (2004b) and Bordo and Redish (2004).

⁹⁸ See Kumar and colleagues (2003, p. 5 or p. 9). On p. 12, these authors state that temporary price declines due to economic growth may not entail significant costs. This seems to imply that even with a positive supply shock, significant costs might exist.

⁹⁹ See Kumar et al. (2003, p. 13); Krugman (1998, p. 137).

¹⁰⁰ See Krugman (1998), Goodfriend (2000), Svensson (2003), and Leigh (2004).

point of view of liquidity trap theorists and avert the danger of deflation. They are given an excuse to increase spending and to inflate the money supply.

In addition to the liquidity trap problem, Svensson names other negative consequences of a prolonged deflation: (1) an increase in bankruptcies as the real debts of companies increase; (2) financial instability due to the deterioration of commercial banks' balance sheets; and (3) unemployment in cases where nominal wages are rigid downward.¹⁰¹ Kumar and colleagues add another point: Credit intermediation might be distorted by deflation as collateral loses value (2003, p. 5). All this may lead to a deflationary spiral as declining prices lead to the expectation of further falling prices and further decline in aggregate demand. Thus, these theorists argue for an inflation rate that has some buffer against the danger of price deflation.¹⁰²

2.5.3 *Good-Versus-Bad Deflation Theorists*

The second group of contemporary deflation theorists is inspired by the Chicago School and is more free market oriented. Because this group views deflation as being good at times, and not at others, they might be called the Good-versus-Bad deflation school. The Good-versus-Bad deflation school, to a certain extent, rehabilitates deflation. Thus, it is argued that a mild deflation would not always be more harmful than a mild inflation (Borio and Filardo 2004, p. 1), an assessment contrary to that of the liquidity trap theorists. For Good-versus-Bad deflation theorists, deflation has basically two causes.¹⁰³ One cause is economic growth or positive aggregate supply shocks. There are high profits, asset prices, and rising real wages accompanied by a strong financial sector. This deflation they consider to be good deflation. The other cause is a negative demand shock with a non-vertical aggregate supply curve. As these negative demand shocks would have negative output effects, this type of deflation is considered to be bad deflation. Furthermore, these theorists argue that deflation produces only negative consequences when it is unexpected.¹⁰⁴

¹⁰¹ Svensson (2003, p. 147); It should be pointed out that by criticizing the negative consequences of deflation, Svensson takes a stand against all kinds of deflation. For instance, a positive supply shock, or more specifically, continuous economic growth, might cause a prolonged price deflation also.

¹⁰² For example, Svensson (2000, p. 30), justifies an inflation targeting of 2 % instead of 0 % by the allegedly negative effects of price deflation. Krugman (1998, p. 161), even argues that when an economy is in a liquidity trap, it is stuck there, because the "economy needs inflation." He, p. 181, suggests a price inflation rate of 4 % for 15 years for Japan.

¹⁰³ See Bordo et al. (2004, p. 15). This is the main difference between the two groups. The liquidity trap group does not differentiate between causes of price deflation, but, in contrast, states that "[d]eflation is, in almost all cases, a side effect of a collapse of aggregate demand—a drop in spending so severe that producers must cut prices on an ongoing basis in order to find buyers" (Bernanke 2002, p. 2).

¹⁰⁴ Rational expectation theorists like Sargent and Wallace (1976, p. 175) argue that fully anticipated price changes would not have any effect on the real economic activity. This implies

Borio and Filardo even distinguish three types of deflation: “the good, the bad and the ugly.”¹⁰⁵ Good deflations are caused by productivity increases. Bad deflations are caused by nominal rigidities, while ugly deflations disrupt the economy in a self-reinforcing spiral.

That this group is more friendly towards price deflation can also be inferred from the optimal deflation rate for which Bordo and Filardo argue (2005, pp. 804–806). After reviewing Milton Friedman’s argument for a negative optimal inflation equal to the real interest rate, they name disadvantages of deflation, like price stickiness, nominal wage inflexibility, redistributive losses, and financial stability. After pondering the arguments, they write: “In general, the optimal inflation rate should be low, possibly as low as a moderate deflation” (p. 806). Thus, they regard it as possible that a moderate price deflation would be optimal for an economy. This position is one with which the liquidity trap theorists would never agree.

2.6 Conclusion

Theories of deflation have flourished during times when price deflation has occurred. The first treatments of deflation begin with the Swedish experience in the eighteenth century. A cluster of treatments follows during the suspension of specie payment in Great Britain from 1797 until the 1830s. Later, during the price deflations of the second half of the nineteenth century the subject is addressed again.¹⁰⁶ The discussion receives new impetus in Sweden and Great Britain after World War I when these countries pursued deflationary monetary policies. Then, in the Great Depression, a new anti-deflation climax is reached when Keynes made his case against deflation. After World War II price inflation becomes a main problem in the eyes of economic theorists who did not regard deflation as a subject worthy to study in depth. This has changed recently with the price deflation in Japan and with fears that a price deflation could occur in Europe and the U.S. And so papers and articles on the subject of deflation flourish once again.

These theories often were developed during deflationary periods and concerned the problems of individuals who suffered losses during those periods. In fact, deflation theories were sometimes inspired by interest groups that had suffered losses in the price deflations. And in some cases, theorists had links to those interest groups or personal interests in inflation. In fact, negative theories on deflation thrived when some people most urgently wanted monetary inflation. Naturally, over-indebted companies, banks and governments feared price deflation. Prior to

that a fully anticipated price deflation would have no adverse effect on economic activity. The public’s expectations are “rational” if they “are formed using the appropriate data and objective probability distributions” (p. 175). The view that an expected deflation would be “neutral” to the economic progress is widely held today.

¹⁰⁵ See Bordo and Filardo (2004, p. 7); and (2005, p. 1).

¹⁰⁶ See Sect. 5.1.7.

the twentieth century some of the anti-deflation economists had links to interest groups and the economic establishment. In the twentieth century, the state emerged as the largest debtor in the economy and most professional economists have often been and are government employees or have some connection to the state. Moreover, the majority of monetary economists are employees of monetary authorities or central banks or banks that, naturally, fear price deflation. Also, many university professors dealing with monetary economics receive part of their income from research conducted on behalf of monetary authorities. The prevailing negative view on deflation can hardly surprise considering these economic interests.

One also finds a tendency that deflation was more positively viewed in the past than it is today.¹⁰⁷ Or in other words, the assessment of deflation by economists has become more negative, though it has slightly improved in recent years in the writings of the the Good-versus-Bad deflation theorists. One reason for this negativity is probably that until the twentieth century, price deflation caused by economic growth was common. This kind of deflation was widely appreciated and could be seen by everyone. Arguing that it would be harmful, would have been more difficult in this context. Yet, in our world of continuous price inflation, assessments of deflation have turned more negative.

Instead of ordering the theorists chronologically, one might also try to group modern theorists according to their deflation phobia. The most deflation phobic theorists, like Keynesian-inclined theorists, want to avoid every type of deflation and recommend positive price inflation rates. By recommending positive price inflation rates, they want to make sure that the price inflation rate does not come too close to zero. They see an asymmetry in the effects of price inflation and price deflation. Price deflation is regarded as worse than price inflation.

Then come the price stabilization theorists who recommend avoiding any type of price deflation as well. However, they are not so deflation phobic as the Keynesians¹⁰⁸ and argue for a price inflation rate of zero. They see both price inflation and price deflation as bad. There is no necessary asymmetry in their assessment of inflation and deflation.

Good-versus-Bad deflation theorists regard a price deflation caused by economic growth as good and other types as bad or even “ugly.” A similar position is held by the productivity norm theorists. They allow for a negative price inflation rate, i.e. price deflation, if it is caused by economic growth. They recommend preventing price deflation if it is caused by increases in the demand for money. Productivity norm theorists from the fractional reserve free banking school do not fear monetary deflation if it occurs within their preferred system. They actually recommend monetary deflation when the demand for money falls.

The most deflation-friendly group consists of Austrian economists in the Misesian tradition. I have analyzed the individual deflation theories of Ludwig

¹⁰⁷ See also Bordo and Filardo (2005, p. 811).

¹⁰⁸ Those economists regard price stability as dangerous for monetary policy due to the liquidity trap problematic. They argue for a positive inflation rate. See Goodfriend (2000, p. 1007).

Table 2.1 Theories of deflation compared

	Fear price deflation caused by growth	Fear price deflation caused by an increase in the demand for money	Fear price deflation caused by credit contraction
Liquidity trap theorists (Keynes, Bernanke, Krugman)	Yes	Yes	Yes
Price level stabilization theorists (Fisher, Barro)	Yes	Yes	Yes
Good-versus-Bad deflation theorists (Borio, Filardo)	No	Yes	Yes
Productivity norm theorists, fractional reserve free bankers, monetary disequilibrium theorists (Hawtrey, Pigou, Selgin, Yeager)	No	Yes	Not within fractional reserve banking system
Mises	No	No	Yes (in some of his writings)
100 % reserve Austrians (Salerno, Hülsmann, Rothbard)	No	No	No

von Mises, Murray N. Rothbard, Friedrich A. von Hayek, Jesús Huerta de Soto, and Hans Sennholz elsewhere (Bagus 2003). They do not see difficulties in a price deflation caused by economic growth and an increased demand for money. However, in some circumstances they regard monetary deflation as harmful and want to prevent it when it comes to monetary reform (see Bagus 2003).

In this overview, I have not elaborated much on Austrian theories of deflation. Yet, in the following section, I will develop a theory of deflation with its causes and its consequences within an Austrian theoretical framework. As we will see, this Austrian theory of deflation significantly contrasts the theories of deflation just discussed in this chapter.

Table 2.1 ranks theories on price deflation according to their adversity towards price deflation.



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