Mankiw's ninth principle

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To call Nicholas Gregory Mankiw well-known is anything but a gross understatement of his popularity with professional academics and undergraduate students alike. For many of the latter, his best-selling textbook "Economics" is the first and sometimes also the last and closest approach to structured economic thinking they will ever encounter. Therefore, his influence on the thinking of what we may call lay economic experts cannot be underestimated.

One of the many appealing features of Mankiw's textbook is the structuring of economics into ten easy-to-remember principles. Among them, the ninth principle deals with the causes of inflation and goes as follows:

> Prices rise when the government prints too much money.
>
> Mankiw (2014, p. 11)

Mankiw further claims that in "almost all cases of high or persistent inflation, the culprit turns out to be the same – growth in the quantity of money." (Mankiw, 2014, p. 11). Although this accusation is probably very widely accepted, it is nevertheless insightful to study it in more detail. In fact, it turns out that the ninth principle might better be re-phrased in order to more accurately reflect actual economic relationships.

To begin, let us take stock of how Mankiw supports this ninth principle. The first three versions of the textbook (the first edition, the special edition – the one that deals with the financial crisis – and the second edition) substantiate the principle by the hyperinflation examples of Germany, Hungary, Poland and Austria in the 1920s. Referring to an article by Sargent (1982) he "proves" the principle by means of illustration (Mankiw, 2011, p. 649f).

A closer inspection of Sargent's (1982) paper shows, however, that Sargent stresses that all four countries "ran enormous budget deficits on current account" (Sargent, 1982, p. 43). Their currencies were not "backed" by the gold standard but "by the commitment of the government to levy taxes in sufficient amounts, given its expenditures, to make good on its debt" (Sargent, 1982, p.45). Importantly, all four countries found themselves at the losers' side of the first World War which severely impaired their opportunities "to make good" on their debts. Germany, moreover, experienced a revolution after the war and its post-revolutionary moderate Socialist government "reached accommodations with centers of military and industrial power of the pre-war regime. These accommodations in effect undermined the willingness and capability of the government to meet its admittedly staggering revenue needs through explicit taxation", Sargent (1982, p.73) reports.

The final blow to the German government's illusion of fiscal sobriety was dealt by France when it occupied the Ruhr in January 1923. In response, the German government tried to stir passive resistance by "making direct payments to striking workers which were financed by discounting treasury bills with the Reichsbank" (Sargent, 1982, p.73). At that time, the German Reichsbank was not yet independent and the government resorted to its central bank for financing its debt by issuing more money. However, due to the apparent impossibility "to make good on its debt" people naturally lost confidence in money. With newly printed money being ever less trustworthy the government had to make up for the loss of quality by issuing ever more quantities.

Consequently and in striking contrast to Mankiw's ninth principle, Sargent (1982, p.73) asserts that after "World War I, Germany owed staggering reparations to the Allied countries. This fact dominated Germany's *public finance* from 1919 until 1923 and *was a most important force for hyperinflation.*" (emphasis added). In other words, Sargent (1982) does not consider money growth as the main culprit behind the hyperinflation in Germany that Mankiw quotes in support for the general principle that money growth causes inflation.

Rather, money growth must be viewed as a result of inflation which was triggered by the loss in trust in government finances and hence the rise in inflation which caused the money stock to increase. The government's *demand for money* rocketed as inflation took off. This causality is also reflected in Sargent's (1982) statistics. While the price level started to double every month as early as July 1922, notes in circulation and treasury bills grew by only 12 percent at that time and reached 76 percent (treasury bills) in December 1922. Throughout the hyperinflation period, not only accelerated the rate of inflation way before the rate of money expansion, it also always exceeded money growth by a factor of roughly five (Sargent, 1982, p.82). Thus, the causal order of how hyperinflation emerged is also born out by the empirical facts.

If it was not for the government's printing of money, how can we still make sense of the apparent and striking relation between (hyper)inflation and money growth? "Trust" may yield the appropriate answer.

In order to understand this, one should first notice that money is an institution. This is because it only works as a set of rules followed by humans.[1] Without these rules about accepting and valuing money there is no money. Second, money always solves the well-known problem of double coincidences in exchange. This problem arises because in exchange the offer of one party has to be met by a matching demand at the same time. Put simply, if a producer of cotton wants to exchange cotton against milk, the cotton producer has, in principle, to find a farmer who has a surplus of milk and *concurrently* is in need of cotton.

Money does greatly simplify this exchange by allowing the cotton producer to sell his product for money and find someone who accepts the money in exchange for milk without time pressure.[2] The most interesting part of this exchange story now rests with the fact the the cotton seller has enough confidence in the worth of the money that he accepts it as a compensation for his hard-laboured product. Therefore, the key question is why is he so confident?

The answer to this question can be given by interpreting money in institutional terms. The institution that matters most for money is the one that justifies the confidence in accepting money as an intermediate means of exchange.

Historically, money has assumed many guises such as gold and precious metals in general, pearls, stones, cigarettes, coins and notes and so on. It is tempting to label money according to these phenomenological attributes as metallic money, paper money or commodity money. These labels do, however, veil the fact that the crucial difference between any types of money lies with the institutions that justify the confidence in using money in the first place.

Let us consider gold, for example. Gold seems to be a “natural” choice for money because it serves most money functions very well. However, underlying the “value” that gold is associated with is a cultural institution that assigns this value. Cultures across the globe hold gold in high regard and this respect which is based on a culturally determined set of rules is what gold qualifies as money. [3]

But what is this “quality”? The essential quality is that any owner of gold can trust in anyone else to also share in the high regard for gold. This property even goes as far as being able to rely on the “value” of gold even if oneself, individually, does not have any respect for it.

1 In the words of Aristoteles: “To others, in turn, money is a nonsense and a pure legal fiction, in no way given by nature” (Aristoteles, 1971, p. 80) and further “So it is due to an agreement that money has become a substitute of the need.” (Aristoteles, 1951, p. 164) (author’s translations from German to English)

2 Aristoteles (1951, p. 164) observes: “For a future exchange [...], money is, in a manner of speaking, a bailer [...]” (author’s translation from German to English)

3 Note that scarcity alone is an insufficient explanation as there are precious metals such as palladium or platinum that are even scarcer and yet not regarded as highly as gold.

In fact, it is sufficient to *believe*, or better *trust* in anybody else holding gold in high regard to also accept and use gold as money.

A situation in which there is trust in money must hence be distinguished from a situation when there is no trust in money. For simplicity, let us assume that in the latter case, there is no money at all. The situation without trust in money is obviously associated with considerable uncertainty with respect to the outcome of the production and exchange process. This uncertainty arises because it is very difficult to gauge the eventual proceeds (if any) from producing and selling one's goods due to the necessity of the double coincidence. In contrast, money dissolves the need for the double coincidence which simplifies and eventually facilitates the exchange.

However, when accepting money with the intent to satisfy own needs the money holder depends on the confidence the potential seller has in that the money will serve him too, or in other words, that those third parties also trust in money.

Inflation can now be understood as a phenomenon that has its roots in the deterioration of trust. Trust can be diminished by pretty much everything that shakes the institutions which generate the confidence in money. Therefore, government crisis as well as strikes or the abuse of monopoly power can result in inflation. Printing too much money also has the potential to destroy the confidence in money. In contrast to the monetarist view, however, money "supply" is just one factor that affects the trust one has in the relevant institutions.

This observation is an accurate copy of the earlier statement that it is those who accept money who decide about its worth. Returning to Sargeant's examples, we can now see that without the prospect of the money (Sargent, 1982, "unbacked of backed only by treasury bills"p. 89f) being honoured by the government through taxation, there was no reason to believe that prospective business partners would accept it as a means of payment.

Therefore, and in contrast to Sargeant's claims, one has to concede that it neither was the "the growth of fiat currency" nor the "increasing quantity of central bank notes" (alone) which caused inflation. Rather, the inflation was caused by the fast deterioration in the trust of money due to the apparent inability of the government to match its promises which were manifested as newly issued money with future revenues. It was this bleak prospect about the usefulness of the money which eventually created inflation.

According to the lessons from Sargent's (1982) examples as well as from the principle considerations, money as trust implies that the initial trigger for inflation will always be some impairment of the belief in the respective money's ability to satisfy needs. And in fact, wars, corruption and grave economic mismanagement usually cripple inflation infested economies first.

The *growth in money stock* hence is a *response* to these ails and must be regarded as attempts to create more money in order to compensate for the loss in trust in the existing stock. Printing more money, however, is a sure means of destroying trust even further. Therefore, the excessive creation of money *reinforces but does not cause* an ongoing inflation.

When it comes to inflation, matters are apparently somewhat more complicated than the simplicity of the ninth principle suggests. Maybe as a sign of acknowledgement, Mankiw dropped the case study on Germany, Austria, Poland and Hungary starting with the third edition of his textbook (Mankiw, 2014). In its stead he refers to the case of Zimbabwe but only in passing (Mankiw, 2014, p.11) and without any further elaboration. The more recent editions thus provide support for the ninth principle only on theoretical grounds (Mankiw, 2014, p.590). suse+ In view of the full evidence, it would probably be even better not only to drop the mis-placed proof by example but to re-write the ninth principle altogether:

> Prices rise when people lose trust in money.

References

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