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NÓMOS and NÓMISMA

Comments on Inflation in the Roman Empire

1. Aristotle stated (Eth. Nikom. V,3) that money is called *nómisma* because its value is not based on nature but on a norm (*nómos*). This is in my opinion a fitting characterization of the problems of the money unit, true in a very profound sense. If the value of money is based upon a social norm, this means that the problems of inflation call for an analysis of the *reasons* affecting the adherence to legal or other social norms.

This leads us to the methodological problem of a (causal) *explanation and understanding* of human behaviour (von Wright 1967). If inflation is conceived of as a problem concerning adherence of human behaviour to norms, it should be *understood* as a process of *human reasoning*, not a phenomenon *caused* by certain factors.

The present paper is based upon a more comprehensive study on Roman inflation: it is in my opinion suited to a sample of studies in honour of Elemér Pólay, who is a grand-master in questions pertaining to the differentiation of social norms in Rome. Inflation is in my opinion a problem concerning the *limits of law and other social norms* (see in a greater detail Klami 1983).

2. The main idea of the present analysis is delusively simple. The ancient inflation is a very complex phenomenon concerning human reasoning. It cannot be either explained or understood by reference to *one fact*. The main problem is the strength of the Aristotelian *nómos* of *nómisma*: why do people trust in money — or distrust it? The problem of the efficacy and validity of social norms is very complex indeed (see Klami 1983). In this case the problem is even more perplexing because money is the measure of very different commodities. According to this basic methodology inflation is a *normative problem* — in a certain manner similar to such problems as criminality etc. Therefore it calls for a (qualitative) *model of understanding* behaviour and not for a *quantitative* explanatory model. Therefore I have taken the liberty of expressing my opinion on a very difficult problem of economic theory of which I am not an expert (cf. Schneider 1965).

3. The main features of the Roman inflation are relatively well known (see, e.g. Segrè 1941 and 1943, Mickwitz 1932a, 1935) and need not be analysed here in detail. It is sufficient to mention them:

(3.1.) The almost continuous depreciation of the main coinage, the imperial *silver money* beginning in the time of Nero; the coins of the young Nero contained still 93,2 pct silver, but the content was under Septimius Severus

only very slightly over 50 pct., under Gallienus only few pcts and under Diocletian no more than 2,5 pct. Silver coins were then only seemingly silver money (Mickwitz 1933, Mickwitz 1935).

(3.2) Inflation went on. If the level of prices under Antoninus Pius is marked with the index figure 100, we are during the last years of Marcus Aurelius already at 107—113 and under Gallienus at 160—180; but later the variation of prices was — at least in Egypt — stronger still. The value of the denar in a.D. 301 is marked with 100, but in 307 the figure was already 300 and seven years later, i.e. 314 not less than 2800. On the other hand, a certain deflation took place, but already a.D. 341 the index was as high as 206.000, being five years later again 86.400 (Mickwitz 1935).

There have been very numerous attempts to explain inflatory tendencies in the Roman empire (e.g. Rostovtzeff 1929, Frank 1959, Finley 1973). The theories proposed are similar to the present discussion concerning *monetary v. demand-supply* explanation of *modern* inflation. It is sufficient to mention central tendencies and theories:

(a) The *quantity of money increased*, thus causing inflation. This was the theory of Gunnar Mickwitz who in the thirties delivered very important contributions to the theory of ancient Roman economy (Mickwitz 1932a). To Mickwitz the prices were determined according to the following function, based upon the quantity of money:

$$P = \frac{MV}{T}$$

where P = the price level, M = the quantity of money, V = the velocity of its circulation and T = the extension of exchange of goods and money.

It is to be noted that this function was according to Mickwitz not only a definition; it is understandable that Mickwitz and other authors adhering to this kind of theory did not want to exaggerate the inflation as a factor influencing the structure of economy. Mickwitz did not think that inflation should have caused a return to an economy based upon exchange of domestic products (even if there were certain such tendencies, cf. Mazzarino 1951).

(b) It is also often claimed that the *spendthrift Emperors* caused the economy of the Empire to come to a disorder. This is particularly stressed by ancient historians (Suetonius, Zosimos, Zonaras etc.) who tell us astonishing (and often unreliable) stories about the vices and stupidities of the Emperors (cf. Mickwitz 1932b; Syme 1930).

(c) *Reorganization of the army* is often said to have been the cause of inflation: when the wages of the soldiers rose and began to be paid in cash instead of being hoarded in the treasuries of the paymasters, and the soldiers were allowed to marry and have families in the barracks, the places where the units of the army were located became centers of consumers, consumption — and demand (cf. Bruun 1965). But it would surely not be correct to establish a causal connection with the alleged growth of the army and the equally improbable general decrease of production of commodities (cf. Visky 1983, p. 233 et seq.).

(d) On the other hand, there are different attempts to explain inflatory phenomena by factors pertaining to fluctuations of *demand and supply*. The most "natural" explanation of this kind is a reference to changing *harvests* of

different sorts of grain. But this would only imply a change of supply; a major part of the population lived in conditions near to the *minimum demands of existence* (Frank 1959).

4. In my opinion, however, all these explanations are *insufficient* or misleading — just because they are explanations, alleged *causes* of inflation. The main problem is that the inflatory tendencies are during certain periods — at least in Egypt — so strong that one cannot easily explain them by referring to a *linear mathematical function*. The quality of money did not decrease in such a manner that it could explain inflation; the value of gold coinage decreased even if one cannot assume that the *amount* of *aurei* or *solidi* should have increased in a corresponding manner; on the other hand, it is clear that the *gold content* of this kind of coinage did not decrease (cf. Segrè 1943).

Certain partly unexpected events could of course *cause* inflatory tendencies by influencing human reasoning but their strength is very difficult to estimate. During the 2nd and 3rd centuries a.D. there were severe disturbances of civil life. Of course these phenomena were partly only local. In places where troops invaded, prices almost inevitably rose. On the other hand, fluctuations of harvest were not *unexpected*; they belonged to the normal sphere of experience of people. But they could "cause" remarkable *uncertainty* (Rostovtzeff 1929).

In this situation certain aspects of norm-formation are to be taken into consideration. There is a basic transformation behind social norms — legal and other. *Teleology* — with its cognitive and evaluative components. — is *transformed into normativity*. But this transformation is not complete or final: normativity is to be *revised* if knowledge or evaluations are changed (Klami 1983). The value of money is based upon certain assumptions of *ceteris paribus*. A certain fluctuation of the prices is hereby assumed — in our days also a certain inflation belongs to the iron core of the cognitive aspect of the legal and other social norm-formation.

But there are situations where the basic assumptions of *ceteris paribus* are shaken. In these situations the change of the relevant background assumptions cannot be conceived of with the help of a model of thinking of a deterministic kind. We can draw up a function but there are too many *stochastic* elements in it: How are certain relevant states of affairs going to *develop*? — and, what is perhaps even more important: How are other people *reacting* to the changes?

When we are trying to *understand* inflation we should be well aware of the fact that we cannot fully *explain* inflation: the models used are not regular, there is no linear regularity: the reactions of men toward stochastic phenomena are often disproportional when compared to the *quantitative relevance* of the uncertainty in question. E.g.: an Emperor is letting the silver content of silver coinage to sink. A sinking of this kind, say, 10 per cent, cannot, of course, explain an inflation of 50 per cent — but it can make it understandable because reactions of men in conditions of uncertainty concerning social norms are *not linear* in comparison with the change of the uncertain aspects of the situation; it is also clear that such a sinking of the silver content of money cannot explain the growth of the quantity of money in such a manner as the quantitative and monetarian models presuppose it (cf. Schneider 1965).

5. There were in the Roman Empire mechanisms creating — or tending to create — *demand-supply-inflation*. I try to describe the main mechanisms very briefly.

(I) The imperial economy and administration was responsible for the grain supply of Rome: there was an organization headed by the *praefectus annonae*, which collected the victuals needed. The methods were of two kinds: (a) land taxes were paid *in natura* (b) purchase (cf. already *Rodbertus* 1865, and recently, *Hamza* 1981).

(II) Italy and especially the regions near Rome had a "surplus population" whose standard of living and number was unproportionally high when compared to the basic production of Italy. One may say that there was a permanent *deficit of the balance of trade* for Italy in the Roman Empire. The balance of payment was, of course, adjusted with the help of taxation and other means of exploitation (cf. *Rostovtzeff* 1929 I, 87; 164 f; *Syme* 1930).

(III) The basic production of the Empire — e.g. the harvest of grain in Egypt — was variable depending, *inter alia*, on weather circumstances.

(IV) Later, especially during the 3rd century a.D. internal wars caused serious disorder and uncertainty in central areas of the Empire. The trend was, however, clear: the old „provinces" and similar areas had become both politically and economically more independent than earlier. In a corresponding manner the central position of Rome and Italy in the Empire slowly but surely weakened (on the whole problem see *Vogt* 1965).

There was a certain mechanism in the economy of the Empire which promoted inflatory tendencies. When Italy needed grain, the Emperor could provide for it through taxes or by paying for it. The Emperor was, moreover, legally entitled to issue money which was valid in the whole Empire.

Let us now assume that the harvest had been bad. This (a) tended to *reduce the flow of the land taxes paid in natura* (b) but because of the limited supply of grain also *caused a tendency to raise the prices paid for grain*.

It is also important to note that the grain trade was subject to private speculation. *Lex Iulia de annonae* which was issued in the beginning of the principate tried to prohibit different methods of private speculation, such as private contracts or cartels (*societas*) with the aim to make the *annonae* more expensive, or attempts at delaying grain ships from coming to Rome. But the sanction was according to Ulpian a relatively small fine (20 units of golden money, itp.) (*See Ulpian*, D. 48. 12. 2; cf. *Hamza* 1981).

It is probable that this statute was ineffective; Ulpian tells us that the punishment had later been made more severe. Now — probably in the Severan time — the prohibition of cartels for purchase of victuals was also applied to other victuals than grain; the "hoarders", called *dardanarii*, could now lose their rights as merchants; moreover, even relegation could come into question (*Hamza* 1981). The new statute belonged to the edict of the proconsuls; this seems to indicate that the problem was now more crucial than ever and in particular in the *provinces*. *Lex Iulia de annonae* referred still clearly to *Roman* speculants, but they evidently did no longer possess the control over the trade (see *Ulpian* D. 47. 11. 6 pr).

But neither did the imperial administration have the control over the situation. *Legislation has its limits* in the (normative) *structure of production and trade* (cf. *Junnila* 1947). Criminal sanctions alone cannot prevent speculation, unless the legislator can control the whole market. This was not the

case. It was also apparent when Diocletian's well-known price edict failed to fix real price ceilings one hundred years after Ulpian's commentary on the edict of the proconsuls. Very simply: if the legal prices of certain goods do not correspond to the prices conditioned by the market situation including demand and supply, the commodities in question tend to *disappear from the controlled market* — if it is possible to store them, they become "hoarded," or otherwise a black market is born. This is rather trivial national economics — but how often have those in power over-estimated the effectiveness of their will and commands. One cannot blame Roman Emperors too heavily for their lack of insight in economic questions because governments in our days still make the same *mistakes* in over-estimating the impact of legal norms on the economy-based social norms which govern the behaviour of the more or less "economic men" (cf. *Adam Smith*) of the society:

(a) that it is possible to solve problems concerning "business cycles" or changing conditions of demand and supply by resorting to *monetary* methods alone;

(b) that ineffective legislative measures cause no harm because they remain ineffective if they miss their aim; in fact they, however, often give rise to serious disorder, because they are adversely affecting the *conformity of economic behaviour*. In short, they *cause uncertainty*, and this is easily visible in the value of money just because it is based in a "nómos" and not on nature.

It was for the Emperors easier to pay the prices demanded for victuals (and other commodities) than to regulate the prices: the Emperors could issue new money (cf. *Syme 1930; Mickwitz 1932b*). The supply of gold and silver was of course not unlimited but the invention of issuing "bad" money with a lesser silver content helped to some extent. Emperors since Nero made small "adjustments" of the silver coinage which sank from 93 pct (Nero in the beginning) to 84 (Trajan), to 74 (Septimius Severus), to 44 (Alexander Severus), to 20 (Valerianus) and to 2,5 (Diocletian). It should be stressed, however, that this decline was relatively slow (except for the 3rd century) and the "adjustments" small; there were during the reign of the same Emperors different silver contents. Some Emperors apparently tried to issue *better* money: Volusianus let the silver content raise to 61 pct from 35 (Gallus). This was probably one method to take up fight against inflation. It is, however, easy to see that inflation cannot be *caused* by such measures as augmenting the amount of money circulating in the economy. The differences between new money and old money were not very big; in fact the Emperors tried to keep the deterioration of money secret in order to maintain the *nominal value equality* between old and new money. The amount of new money could never have been very big, because the supply of silver was limited.

Increase of money — and bad money to boot — cannot, however, have been so great that it could have *caused* heavy inflatory tendencies; at least the dependance between the amount and quality of money and inflation is not a linear function.

But monetary aspects are an important part of the economic *reasoning*, and monetary measures of the Emperors could "cause" uncertainty. This was particularly so because they often *coincided with bad harvest* and scarcity of commodities or with internal disorder, aspects which already *as such* caused uncertainty. When the emperors reacted to such events by increasing the

amount of money, the result of the reasoning in economic interaction was easily a lack of confidence in money, but the reactions of the economy could vary in different times and in different parts of the Empire.

It is important to note that inflation also affected *good* money: the value of *gold* coinage sank even if one could not think that its amount should have much increased.

6. Normative regularities concerning the value of money are more or less clearly expressed in certain *legal* mechanisms. In our days it is relatively easy to foresee inflation: the economic regularities are well-known, and there are *prognoses* which — as social prognoses often do — *affect the reasoning* of the men whose behaviour is their object. *Expected* inflation and numerical *prognoses* concerning it become parts of reasoning. In antiquity there were no such prognoses; moreover, certain modern institutions which create regularity were unknown (banks, especially central banks with powers to regulate the rate of interest etc.). Banks had other functions (Boulvert 1968; Klami 1969).

There are in our days certain contractual methods to take account of inflation; but if such methods are lacking, this fact *contributes to uncertainty* and, accordingly, affects adversely the value of money. We can only very briefly treat of these methods.

(a) *Rate of interest*. In Roman Law the rate of interest was relatively inflexible: the *legitimae usurae* did not allow for legal methods for taking account of inflation. There may, however, have been illegal rates of interest — e.g. the *mora* clause of *paratheke diplo* was probably in certain cases used in order to surpass the maximum rate of interest.

(b) Index clauses were of course unknown. But to a certain extent the law concerning *laesio enormis* in the contract of sale was a primitive substitute for such clauses. It is not completely sure whether these norms were introduced by Justinian or whether they were earlier. In my opinion this device can be traced back to the period of the big inflation, i.e. to the end of the 3rd century a. D. According to this doctrine such contracts of sale could be invalidated or adjusted where the stipulated price was less than 50 pct of the day value of the object (C. 3. 4. 46. 2); this was later, also during the Middle Ages, developed to a moral philosophical doctrine of *pretium iustum*. (I agree with *Visky* when he declines the usual interpolation assumptions concerning the Diocletian texts, see *Visky* 1983 p. 24 et seq. But why should the judicial practice have ignored recently established norms concerning just prices and the *laesio enormis* — until Justinian restored the spirit of Diocletian's regulation? Despite *Visky's* acute remarks this still remains to be explained.) Concrete regulation of prices cannot, however, have any great impact upon the price level. It covers only a small part of the cases.

(c) Identity of coins and inspection of the quality and weight of money played a relatively important part in everyday economy in Rome. Inspected money was put in bags with closing "bricks," *tesserae nummularie* (Klami 1969). But even if there are in the papyri certain clauses specifying the money to be used (*kainon nomisma*) (*palaion nomisma*), these references are an exception to the rule which was clearly *nominalism*.

The primitive state of the legal methods for taking account of inflation undoubtedly *contributed to the uncertainty*.

It is, however, obvious that *inflation as such* was not considered as a big problem. Therefore it is understandable that Roman Emperors were more

interested in getting the grain which Italy and the Roman man of the street (taken in a literal sense) demanded. Plinius praises Trajan for his efficient methods of purchasing grain: he let his *negotiatores frumentarii* pay as much as was demanded, all this in order to guarantee the availability of victuals in Rome and Italy (*Plinius*, Paneg. 29. 3. 5). But Trajan had to issue bad money (cf. *Syme* 1930), too; on the other hand, a steady flow of grain to Italy entailed scarcity in *some other place*. If the place in question simultaneously got a considerable amount of (new, bad) money, this could lead there to unforeseeable inflatory tendencies.

7. Adherence of people to legal or other social norms is connected with teleology consisting of cognitive and evaluative components. Uncertainty concerning teleology may entail that also social norms are felt as uncertain. This is in my opinion the case also as to phenomena of inflation.

The problem is that inflation cannot be *explained* by *monetary* models: one can hardly assume that big inflatory tendencies should have been *caused* by relative slow changes of the quality of money; nor can it be assumed that these changes should have caused a very big increase in the amount of money circulating in Roman economy. One might of course construe such assumptions in order to "save" the basic monetarian explanations of inflation. I am not claiming that I have found a new explanation for inflation in antiquity, even if I liked to stress demand-supply-aspects as the *main* parts of the people's reasoning, monetary aspects being a kind of *conclusion* from them. But these connections cannot be expressed with the help of linear functions, because inflation is *in ultima analysi* a problem of *human reasoning* and as such not simply "caused". Of course one can use quasi-causal models of explanation when reasoning is *understood*. But one cannot say that these models are real "explanations" because reasoning is another thing.

Inflation is a riddle which cannot be solved by historical studies: interaction of human reasoning is not depending on fixed laws. Modern economists can of course explain inflation — because their explanations and prognoses are influencing the phenomena that they are trying to explain. But what about the legal problem? It is in my opinion highly significant that there were no efficient legal remedies against heavy inflation, although Roman Law should not have been alien to such principles. There are several possibilities for explaining this "deficiency." The first one is that Roman lawyers lacked the innovative spirit needed. This is not convincing, because Roman Law was usually capable to cope with any real problem of the contemporaneous society. But more likely is the explanation that inflation was not wholly detrimental: there were persons and groups who benefited by the phenomenon. It is probable that *their* interests dictated the main focus of the regulation. Their interests did not coincide with the interests of those in power and the owner class. There is no straightforward relationship between interests, power and law. Even for this reason the study of legal and social history is interesting: should there be only one answer, given in advance by some theorist, then it would be senseless to commit oneself for years to such studies.

References

- Because the present essay is based upon a more comprehensive book in Finnish, I have refrained from giving exact references to the literature used.
- BRUNN, Patrick, Den romerska armén som ekonomisk faktor under senare kejsartid, *Finks Tidskrift* 1965. p. 80. ff.
- FINLEY, Moses I., *The Ancient Economy*, London 1973.
- FRANK, Tenney, *An Economic Survey of Ancient Rome and Italy of the Empire*, New Jersey 1959.
- FREDRIKSEN, M., Caesar, Cicero and the Problem of Debt, *Journal of Roman Studies* 1966 p. 128 ff.
- GUEY, J., La dévaluation du denier romain sous Septime-Sévère, *Bull. de Soc. nat. Antiqua, de France*, 1952—1953 p. 89 ff.
- GUMMERUS, Herman, *Industrie und Handel*, Abhandlung im Werke PAULY-WISSOWA, *Realenzyklopedie der classischen Altertumswissenschaft*, IX, Stuttgart 1916 p. 1439 pp.
- HAMZA, Gabor, *Wirtschaft und Recht im römischen Reich*, Ann. Univ. Budapestinensis 1981.
- HEICHELHEIM, F., Zu Pap. Bad 37; ein Beitrag zur römischen Geldgeschichte unter Trajan, *KLIO* 1932 p. 124 ff.
- JUNNILA, T., *Inflaatio*, I, Helsinki 1947.
- KLAMI, Hannu Tapani, *Mutua mags videtur quam deposita*, Helsinki 1969.
- KLAMI, Hannu Tapani, *Ihmisen säännöt*, Turku 1983.
- MAZZARINO, Sandro, *Aspetti sociali sul quarto secolo*, Roma 1951.
- MICKWITZ, Gunnar, *Die Systeme des römischen Silbergeldes im IV. Jhd. n. Chr. Ein Beispiel zur Anwendung der variationsstatistischen Methode in der Numismatik*, Helsingfors 1933.
- MICKWITZ, Gunnar, *Geld und Wirtschaft im römischen Reich des vierten Jahrhunderts n. Chr.* Helsingfors 1932 (a).
- MICKWITZ, Gunnar, *Inflation*, Artikel in Werke PAULY-WISSOWA, *Realenzyklopedie der classischen Altertumswissenschaft*, suppl. VI, Stuttgart 1935 p. 127 pp.
- MICKWITZ, Gunnar, *Zu den Finanzen Trajans*, *Arctos* 1932 (b).
- MOMMSEN, Theodor, *Geschichte des römischen Münzwesens*, Berlin 1860.
- PERSSON, Axel W., *Staat und Manufaktur im römischen Reich*, Lund 1923.
- RODBERTUS, J. K., *Zur Geschichte der römischen Tributsteuern seit Augustus*, (Hildebrands) *Jahrbücher für Nationalökonomie und Statistik* 1865.
- ROSTOVITZEFF, Michael, *Gesellschaft und Wirtschaft im römischen Kaiserreich*, I—II, Heidelberg 1929.
- SCHNEIDER, Erich, *Einführung in die Wirtschaftstheorie*, III, Tübingen 1965.
- SEGRE, Angelo, *Metrologia*, Bologna 1928.
- SEGRE, Angelo, *Inflation and its Implication in Early Byzantine Times*, *Byzantion* XV (1940—1941) p. 249 ff.
- SEGRE, Angelo, *Some Traits of Monetary Inflation in Antiquity and the Middle Ages*, *Seminar* 1 (1943) p. 20 ff.
- SOMBART, Werner, *Der moderne Kapitalismus*, I, 2. painos, München—Berlin 1928.
- SYME, R., *The Imperial Finances under Domitian, Nerva and Trajan*, *Journal of Roman Studies* 1930 p. 55 ff.
- VISKY, Károly, *Spuren der Wirtschaftskrise der Kaiserzeit in den römischen Rechtsquellen*, Budapest 1983.
- VOGT, J., *Der Niedergang Roms. Metamorphose der antiken Kultur*, Zürich 1965.
- VON WRIGHT, Georg Henrik, *Explanation and Understanding*, London 1967.
- P. S.
- The latest book of the eminent Hungarian Romanist *Károly Visky* was sent to me when the text of my essay had already been written and checked. For this reason, a more detailed analysis of his thoughts was not possible.