

**SOME REFLECTIONS ON PRICE FORMATION AND PRICE FLUCTUATION
IN THE CASE EGYPT
AT THE END OF THE SECOND MILLENNIUM B.C.***

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Karl Polanyi's theories help us understand ancient societies better. His classification of the modes of economic flows allows us to avoid the market mentality of many historians. More particularly, the importance of the centre in Polanyi's articulation of the redistributive form of integration allows for a study of ancient monetary practices outside of the usual and often deceptive perspective of conventional political economy. It must be stressed that in this analysis the theories we attack are in any case mere hypotheses held by some of the Egyptologists themselves, since direct access to sources is impossible.

It is our intention here to show that the main function of money for the period of ancient history in question is its account function. The phenomenon of redistribution in ancient Egypt sheds light on the abstraction process which, in turn, is an essential step towards the creation of modern "all-purpose money," including, simultaneously, the functions of accounting and payment processing.

In a first part, we will insist on the uncommon nature of "monetary practices" in ancient Egypt through the analysis of the account function of money. We refer here to "monetary practices" rather than to money uses because, as is the case in this study, the account function is the important one.¹ This enables us to pinpoint some fallacies from which arises the "commodity-money" theory. Secondly, an analysis of the supposed phenomena of "inflation" and "depreciation of currency" during the XXth dynasty allows us to cast even more doubt on the thesis of the market as a founding base for money. This criticism is also possible because we do not forget an outstanding social characteristic of that era, to wit, the indivisibility of the religious, political and economic spheres.

Therefore, both Polanyi's criticism of conventional political economy and a statement of the importance of monetary phenomena as concrete practices allow us to clear away some misunderstandings about the supposed "inflation" during the Ramessid period. Finally, the challenge is to understand how monetary practices in ancient Egypt demonstrate the process through which the economic sphere is instituted by the political one, and how the money institution has transhistorical features.²

It would be easy to mislead seriously by referring in general terms to the social and economic organization of ancient Egypt, which by convention is bounded by the years 3000-330

B.C., within which three great periods are identified: the Old Kingdom (2750-2150), the Middle Kingdom (2000-1750), and the New Kingdom (1580-1085). These three periods are separated by two Intermediate Periods. Over these many centuries prosperities and accompanying institutions came and went, although the existence of an administrative and religious centre is common to each Kingdom. The materials we will be looking at in this paper come from papyri and ostraca of the XIXth and XXth dynasties (the end of the New Kingdom: about 1300-1085).

§1. THE SPECIFICITY OF EGYPTIAN MONETARY PRACTICES

A/ Money: the instrument of a centralized economy

Redistribution in ancient Egypt is characterized by a decentralization process within which the unit of account plays an essential role.³ For instance, there was no centralized storage facility for produced goods, since the large size of the country ruled this out. Instead, a network of public granaries belonging to various institutions such as temples, harems or local administrations was used to store agricultural surplus. This surplus was then redistributed as "ration-wages" to the labourers working on public building sites nearby.

There is plenty of evidence to underline the importance of decentralization in the ancient Egyptian economy. To take one example, the E.3226 papyrus describes the work of two State teams in charge of exchanging the grains stored in the royal granaries for dates, which were not produced directly by the State, but by peasants. More specifically, the grain bags were brought from various public granaries to the place where the exchange was to be made. It is presumed that the dates were stored either where they were going to be redistributed to the local workers, or on sites for sugar manufacturing. Actually, the civil servants working for the granaries travelled by boat to pick up the newly produced grains and redistributed a part of the stock along their way. The greater quantities of delivered goods came from city granaries, whereas lesser but more regular quantities came from the main public granary depots.⁴

The main function of these central depots was to ensure regularity in a truly decentralized system. Within that kind of system, the main function of the centre is not the storage of the goods, but the supervision of the cereal flow. The E.3226 papyrus is, in fact, an accounting document belonging to the central public depot. Such public accounting activities were the work of scribes who organized this type of product flow which led to real monetary practices.

The account function is the only money function discernible here. It would be judicious to refrain from using the usual categories of "value" and "price," and following Polanyi refer instead to the "substitutive equivalencies" of the redistribution process.⁵ Beyond the simple expression of volumes of wheat in terms of barley, for example, we presume that the "substitutive equivalencies"

system would have led to the emergence of an "ideal unit" that allowed some consistency in its use. Concerning Polanyi's concept of redistribution we should point out that substantivists have indeed already offered the essential definition of this concept. The redistribution pattern is "not the pattern of the physical movement of goods but of the rights and obligations that sanction the 'between hands' movements of goods and persons into and out of the economy."⁶ Indeed the purpose here was only to underline the empirical relevance of this concept with an emphasis on the fact that monetary practices are not the result of the exchange process. The money issue is, first of all, a matter of power: "The 'centricity' of the redistributive pattern refers to the fact that the power . . . is located at an identifiable center The emergence of redistribution is . . . closely related to the emergence of the political order as a differentiated system in society."⁷

It appears, then, that the whole essence of money lies rather in the unit of account, not in material means of payment nor store of purchasing power: "In the primitive age, before man attained the conception of weight . . . it may still have been the State or the Community which determined what kind or quality of unit should be a due discharge of an obligation to pay which had been expressed by the numerals one or two or ten."⁸ The abstract representation of money is not a consequence of the intensification of the market product flow -- as has been the commonly held view since Smith -- but rather it was due to a standardization of the accounting of surplus goods, accomplished by the State through an accounting service.⁹ Thus, numerical information allows State control.¹⁰ For as this information is represented by monetary figures and thus reflects a homogeneous image of the surplus of goods, the circulation or product flow is easier.

B/ The abstract nature of monetary practices and the units of account

Before continuing with the analysis of the abstract nature of monetary practices, it is necessary to define the nature of the "ideal units" that we have postulated. A little precision on the subject will enable us to reconsider some conventional beliefs regarding classical economic history.

The first text that mentions the existence of a monetary standard in Egypt dates back to the twenty-sixth century B.C.¹¹ Long believed to be a bill of sale, it is now known to be a legal transcript of proceeding: "I bought this house from the scribe Tchenti. I gave for it 10 *shât*, that is to say, a piece of cloth worth three *shât*; a bed worth four *shât*; a piece of cloth worth three *shât*." The defence then answered, "You made the total payment by the substitution of things of equal value." In this way, Tchenti acknowledges that the house is no longer his.

Shât appears to have given way to other "ideal units," yielding its place by the time of the New Kingdom to the *sniw* and sometimes the *shâty*. (The transliteration *sniw* has been chosen over *seniu* here, for it is nearer to the hieroglyph translation; *seniu* and *sniw* are transliterations of the same hieroglyph.) However, it was not even the only monetary standard in use in Egypt at that time.

J.J. Janssen identifies four types of "money": the *deben*, the *sniw* (really a unit fraction of the *deben*), the *hin* and the *khar*. We now know that the *deben* indicated a weight of 91 grams.¹² The copper *deben* was the most current means of valuation used at the time, although references to silver *deben* and even to gold *deben* are also found occasionally.¹³ The *deben* is often subdivided by its tenth, the *kite*.¹⁴ As for the *hin*, it was most certainly an oil measure. Jars, on which were found various *hin* measures, indicate that it must have been equal to 0.46 litres.¹⁵ And, even if no trace of the *khar* has ever been found, it is thought to have been a leather bag in which different cereals such as wheat and barley were weighed.

There are still many uncertainties as to the exact nature of these measuring tools, but they all share one point in common: through them, the values of various goods can be expressed. Crockery or sheets, for instance, were estimated in *deben* (or in *kite*),¹⁶ while meat was valued in *sniw*.¹⁷ The *hin* was a measuring device for various liquids: beer, milk, honey, etc. The *khar* measured cereals, but also wickerwork and unusual items such as bed posts.¹⁸ The *deben* and fractions, the *kite* and the *sniw*, would have been higher levels of abstract representations of money. In fact, several estimates of *khars* of cereal were made in *deben*, when on occasion the *hin* became a fraction of the *deben* estimated at one sixth of a *sniw*.¹⁹

C/"Institutional analysis of money" versus "theory of commodity-money"

There has been some uncertainty as to the propriety of inferring acts of exchange from the existence of units of account. Some Egyptologists have considered that at least some of them may have been coins. For example, T.G. James recalls an effort to find out whether during the period of the New Kingdom, a piece of metal of a specific weight called the *seniu* was really used as a coin.²⁰ For instance, Cerny tried to find evidence in what he called "the piece": "a flat, round piece of metal 1/12 *deben* that is about 7.6 grams in weight, possibly with an inscription to indicate this weight or the name of the issuing authority." This meant that the *sniw* "was practically a coin."²¹ This assertion is all the more surprising as neither any *khar* nor any *sniw* have ever been found. And, if the *sniw* was effectively used daily as a monetary unit, we should have been able to find a trace of it somewhere.

We can avoid such dead ends resulting from using commodity-money theories by taking into account the redistributive aspect of the ancient Egyptian economy. Because of the great variety of goods exchanged, the use of a unit of account was useful and transactions took the form of "money barter."²² For example, under Ramses II, an individual in serfdom was valued as the equivalent of a blanket, a sheet, a coat, a skirt, loin-cloths, tunics and a number of jars (each of these objects being, in turn, evaluated in silver *kites*).²³ Such a fractioned evaluation allows for a precise definition of the value. But, in the end, it would be the various objects that would be exchanged

against the individual, and not the small silver pieces. This practice is not very astonishing. Actually, there were numerous transactions made without any mention of any coin just as there could have been coin transactions outside of the context of a market exchange.²⁴

The existence of monetary practices based exclusively on the unit of account system in 2500 B.C. is remarkable. We tend to think of abstract modern money as the result of a long process of work division. However this process is not the only possible way of accounting for non-material uses of money. Thus, it is not surprising to see, that even in those days, credit transfers were made, giving to each individual a purchasing power. Anomalies found in the public accounting books of that period allow us to make the following hypothesis: State agents would be "credited" with a certain number of "loaves" that would be considered like real money units.²⁵ These loaves, owed by the State, could be used as funeral offerings, or to acquire funeral furniture.

Fundamentally, a monetary system does not necessitate a commodity-money. As J.R. Commons clearly demonstrated in *Institutional Economics*, as early as 1933: money issue is fundamentally debt issue, modes of evaluation and release of debt. Thus, the main issue concerning money focuses first on the problem of the monetary value of the debt, then the means of payment.²⁶ As for the store of value function, it is not a money matter,²⁷ something that Polanyi did not ever admit.²⁸ A study of the fluctuation of "price" illustrates the institutionalist analysis of monetary practices.

§2/ A STUDY OF FLUCTUATION OF "PRICE" DURING THE RAMESSID PERIOD

A/Discussion of the existence of a price increase in copper deben²⁹

Allowing for margins of error, it is possible to draw a general portrait of a sudden rise of grain prices at the end of the XXth dynasty. The price of one to two *deben* of copper for each *khar* of wheat was considered the norm during the XXth dynasty, and even during the XVIIIth. The price under Ramses III was also set at one *deben* per *khar*. Following that period, the prices started to fluctuate between one and two *deben* per *khar* until the middle of the XXth dynasty. They finally rose to eight, and even to twelve *deben* per *khar*. It is only at the end of that dynasty that the prices came down again to the normative price of two *deben* per *khar*. Such shifts also occurred in the case of barley prices. Two *deben* seemed to be the usual price per *khar* of barley, since barley was more expensive than wheat. In that context, it must be stressed that the prices of the other goods remained completely stable -- except, maybe, for the prices of oils, which moved slightly. We can, therefore, conclude that there was a rise of the relative prices of cereals, that is to say, a reversible and time-limited rise of the prices of wheat and barley, compared to the stability of the prices of all the other goods, and not that there was an inflation phenomenon, which would have meant the cumulative and global devaluation of the *deben* or of the *snw*. However, we would be more consistent in our

interpretation if more documents on the matter were available.

But a more intriguing phenomenon exists : the total disappearance of the "silver standard" coinciding with an inflow of silver metal at the end of the XIXth dynasty or at the beginning of the XXth. So, if a general movement of prices in copper standard can be questioned, it is not the same case for prices evaluated in a silver base.

B/The issue of the depreciation of the "silver currency"

From a market point of view, it is generally admitted that any phenomenon of price increase is due to a depletion of the aggregate supply, or, everything being equal, it results from a sudden increase in the quantity of the means of payment. This "market hypothesis" seems to account well for the management of a sudden state of scarcity.³⁰ Actually the period which started at the end of the reign of Ramses III was indeed a dark one for Egypt, a time fraught with repeated strikes, foreign invasions, thefts of the royal tombs and numerous famines.³¹

Could price increases have been the economic expression of political and social decay? Perhaps, but we have seen no historical evidence directly supporting claims about the existence of market adjustments in those early days.

Since at least the beginning of the New Kingdom, it must be recalled that the *sniw* was used as the value unit based on silver metal, weighing around 91 grams, and being estimated at 1/12 of the *deben* value. The problem is that this standard vanished completely under Ramses III, around 1150 B.C.³² Furthermore, this disappearance seems to coincide with a devaluation of silver in relation to copper;³³ the exchange ratio copper/silver decreased from 1/100 to 1/60, when the exchange parity copper/gold remained stable at 1/200.³⁴

If we admit the hypothesis that the Egyptian system was based on market interdependence, a hypothesis that we consider improbable, it is easy to understand Cerny's conventional opinion on the subject.³⁵ For him, a sudden inflow of silver, coming from the Hittite Kingdom, caused the depreciation of the *sniw*, a unit of account directly related to the silver metal value. A few secondary points must be mentioned:

_ Following a supposed delivery from Meneptah, the Hittites would have had to pay for their cereals with silver metal; however, there is no mention anywhere of such a kind of transaction.

_ The metal would have then been distributed in great quantities directly to the population instead of the usual rations of grains; but, this has never been proven.³⁶ Indeed it has been argued more recently that the scarcity of cereal for domestic consumption would explain sudden price rises. Yet the depreciation and the disappearance of *sniw* cannot be so explained.³⁷

_ Market economists often agree on the idea that an excess of exports can cause a sudden rise of domestic prices. Actually, Helck sustained the idea that foreign exchanges became, during the New Kingdom period, more and more contractual. In such a case, it would actually be the metal

counterparts that contributed to the inflation process, devaluating the *snw* at the same time.³⁸ But, once again "money-barter" practices render this hypothesis fragile.³⁹

Too many ambiguities still prevail in the "market hypothesis" to even talk about a market system in ancient Egypt. In fact, the market takes place on the margin of the economic system. Janssen sustains Polanyi's thesis that the market is on the periphery of the economic system of ancient Egypt. Taking into account the concrete process of price fluctuations at that period leads to other hypotheses.

We will now focus on the abrupt vanishing of the *snw*, instead of looking at its devaluation process. Two explanations can be given on the matter, one economic, the other cultural. Helck pointed out the peculiar use of the silver standard, which was based on a duodecimal system. However, if such a system is well-known to Mesopotamians, it was not in use in Egypt, where the decimal system was preferred. The adoption of a silver standard may have been a typical case of acculturation. Considering that, during the XXth dynasty, the Middle-East market collapsed and trade with Mesopotamia became scarce, is it so surprising to see a practice that is contradictory to the Egyptian customs vanish in the process? Another hypothesis concerning the cultural specificities of ancient Egypt could be put forward. Daumas has already theorized that the gold standard vanished because of the sacred nature attributed to this metal in sacred writings being produced at Thebes.⁴⁰ And, do we know whether silver metal was absent from theological tracts of this time?

Finally, the price-increase phenomenon that occurred in the Ramessid period would not be the result of an inflation process, but a change in the relative prices that remains, to this very day, hypothetical. The main cause of this phenomenon would be a scarcity of grains. However, the conventional evidence given for that explanation is not all satisfying. In any case, a strict correlation between the cause of that shortage and the price fluctuations must still be made. The available sources on that matter are, evidently, not sufficient. But, it is true that the emergence of a shortage or of a surplus of metal is not sufficient reason for a price increase, that is, within the institutional perspective studied here.

CONCLUSION. MONEY A SOCIAL INSTITUTION

It seems that the concept of "inflation" is inappropriate and that the traditional theories on the subject are inefficient to expose historical fact concretely. In that context, we put forward two theses:

_ Labour division is not the result of an exchange, but a State institution, a proof that the economic sphere is instituted by the political sphere. In the ancient Egyptian system, behaviour of individuals was not influenced by phenomena such as cereal prices, since wages took the form of food rations. It is, however, possible that a price rise would result in a reduction of the rations in the

case of a surplus market. But this phenomenon is marginal. It is easy to understand the reasons why the price fluctuations remained unobtrusive.

_ Polanyi was right in saying that "Prices are originally set by tradition or authority, and their alteration, when it occurs, is again brought about by institutional, not by market methods. Contrary to all current assumptions, the origin of fluctuating prices, not of fixed prices, is the problem for the historian of antiquity."⁴¹

The Egyptian monetary system is profoundly embedded in the political system of the time (that maintains the function of public redistribution), as well as in the cultural domain (customs and *mores*), and in the religious aspects (through the question of theological taboos on metals). This confirms Polanyi's thesis on substantive anthropology. Now, even if it seems admitted that man was always defined through his market habits, it becomes important to underline that historical studies attest to the contingency of the market spirit as human nature. Substantive anthropology has given us very useful tools, but even Polanyi judged his own thesis on equivalencies and prices as being "largely speculative," insofar as concrete facts are lacking.⁴² This work is far from being over and needs the active collaboration of specialists.

NOTES

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1. Servet 1984.
2. Courbis, Froment, and Servet 1990.
3. Gentet 1990.
4. Mégally 1977A; 1977B.
5. Polanyi 1977, 64.
6. Pearson 1977, xxxiv.
7. Pearson 1977, xxxiv.
8. Keynes 1971, 11.
9. Servet 1984.
10. Gentet and Maucourant 1991A.
11. Theodorides 1979.
12. *Wörterbuch* 5, 448.
13. Janssen 1975, 101.
14. Gardiner 1948, 200.

15. Reineke 1963.
16. Janssen 1975, 101.
17. James 1988, 266.
18. Janssen 1975, 109.
19. Janssen 1975, 108.
20. James 1988, 264. Daumas (1977) also tried to demonstrate that the *shât* of the Old Kingdom was a commodity-money. This is questionable: see Gentet and Maucourant 1991A.
21. Cerny 1954.
22. Janssen 1975.
23. James 1988, 267-68.
24. Servet 1984.
25. Menu 1982.
26. Maucourant 1992.
27. Hicks 1989.
28. Servet 1990.
29. This study is more detailed in another publication (Gentet and Maucourant 1991B). The term "price" was used for equivalency devices which were not market practices. Actually, the market economy did not create prices; rather the price system drifted in from another logic.
30. Another hypothesis has been voiced: the unit of account was toyed with (*Lexikon*, s.v. Preise), the government "cooked the books" by manipulating the value of grain bags in order to give, to a greater number of workers, smaller amounts of cereals. The State used inflation as a means of bringing down the purchasing power of individuals. That would have been possible because it is otherwise known that in individual (Janssen 1975) *and* public (Janssen 1966) transactions, the copper *deben* was used as unit of account. However, to balance the cost of a price rise with a decrease of the quantities of cereals distributed monthly does not seem plausible. For instance, let us consider the case of a worker getting around 5_ *khar* of cereals, each *khar* worth two *deben*; it follows that the amount he gets is worth eleven *deben*. Now, even if the administration reduces the amount given to 2 3/4 *khar* and fixes the value of the *khar* at four *deben*, the worker actually receives a ration that is worth eleven *deben*. Yet he knows at once that his ration has been reduced! So what would have been the utility of such a manipulation? The hypothesis in the *Lexikon* seems difficult to support.
31. Sauneron 1950.
32. Helck (1975, 270-71) transcribes this standard into *shenati*.
33. Helck 1975, 270; *Lexikon*, 1082.
34. Janssen confirms Helck's assessments as to these changes in parity but he qualifies it. First of all, it is difficult to decide whether the silver standard disappeared gradually or abruptly: Janssen

refers to the scarcity of available or published sources. His hypothesis is nonetheless that the disappearance of the silver standard did not immediately follow the devaluation of the silver metal. For the sake of coherence in the following remarks, we suppose that the hypothetical inflow of the silver metal from the Hittites may have begun under Meneptah.

35. Cerny 1934.

36. Janssen 1975, 266.

37. Gutgesell 1992, 161-181.

38. Maucourant 1990.

39. Janssen 1975.

40. Daumas 1977.

41. Polanyi 1977, lii.

42. Polanyi 1977, 72.

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