Zeitschrift: Schweizerische numismatische Rundschau = Revue suisse de numismatique = Rivista svizzera di numismatica

Herausgeber: Schweizerische Numismatische Gesellschaft

Band: 78 (1999)

Buchbesprechung: Prix du blé et numéraire dans l'Égypte Lagide de 305 à 173 [Hélène Cadell and Geroges Le Rider]

Autor: Bagnall, Roger S.

Hélène Cadell and Georges Le Rider

Prix du blé et numéraire dans l'Égypte Lagide de 305 à 173.

Papyrologica Bruxellensia 30. Bruxelles:
Fondation Égyptologique Reine Élisabeth, 1997.

Pp. 100.

The striking rise in prices in drachmas found in the Ptolemaic papyri, from the reign of Ptolemy IV Philopator to the end of the dynasty, has long caught the attention of scholars. Like other such episodes in antiquity, it was particularly striking to generations that experienced periods of severe inflation in the twentieth century, especially in the period of the first World War and between the world wars. The last systematic treatment of Ptolemaic prices, however, is now nearly a half-century old.[1] Since then there have been significant publications of Ptolemaic papyri and a revival in Ptolemaic numismatics, as well as the important book of Klaus Maresch: *Bronze und Silber* [Pap.Colon. 25, 1996]). The time was ripe for a reappraisal, and that is what Cadell and Le Rider have offered us, happily combining the expertises of papyrology and numismatics in a work by two eminent scholars.

The plan of the book is simple. Part I, in two chapters, surveys Ptolemaic coinage under the first six Ptolemies. Part II, in four chapters, surveys prices of wheat from 305 to 173; its centerpiece is a table of prices with detailed commentary. Part III, in six chapters, describes the main tendencies of the prices, surveys and criticizes previous interpretations from Reekmans to the present, and offers a new interpretation of the data along with some more general reflections.

If the volume were judged simply on whether it «solved» the problem, I would have substantial reservations, which I shall describe below. But against a standard of whether it advances the question, it deserves only praise and gratitude. Part I provides a handy summary of studies of Ptolemaic coinage. Le Rider has been able to use an unpublished manuscript by C.C. Lorber,[2] from which he draws many interesting observations. The reader is in no position to test these views until the volume with its full documentation appears, but it is clear that it will make an important contribution to the discussion. Part II provides not only an up-to-date list of prices, but a careful discussion of each price used, from which the reader can see exactly what information really exists and what is inference. The reader is thus provided with the means to form an independent judgment on the key issues. Both of these parts, then, equip the reader to enter into debate with the authors when we reach Part III. Rather than simply another contribution to the discussion, we are offered the foundation on which discussion can go forward; the entire subject has thus been renewed.

[1] T. REEKMANS, The Ptolemaic Copper Inflation, Studia Hellenistica 7, 1951, p. 61-119.
[2] Large Ptolemaic Bronzes in Third Century Hoards (forthcoming in AJN 1999). See also below, n. 12.

Although Part I does not claim originality for its conclusions, and Le Rider is somewhat reserved on many points while awaiting the publication of Lorber's work, it does offer several conclusions of great importance for the later discussion. One is the fact, established by Richard Hazzard, that the Ptolemaic silver currency remained virtually unaltered from the creation of the Ptolemaic tetradrachm by Ptolemy I to the last years of Ptolemy VI.[3] Even then, the tetradrachm's fineness remained at 90 percent until 53/2, when it was reduced to about 33 percent. For the period before 148, there can be no question of any rise in price levels spurred by reduction in precious metal content of the silver coinage. And in fact it is clear that the higher prices appearing in the papyri are all given (even if it is not said explicitly) in a bronze standard (Cadell and Le Rider show that it is a bronze, and not copper, coinage that is at stake).

The bronze coins issued from about 260 on are described with some care on pp. 17 ff. Although there was some variation in what was actually issued from reign to reign, once again we find a coherent system that continues to the end of the period under discussion here, during which a series of coins was in use. This series is characterized by a fair degree of modularity, not always easy to recognize because coin-weights are less standardized for bronze than for silver. There has been much controversy over the decades about what values were assigned to these coins at the time the series was first issued, but the authors here cite Lorber's work as converging with the values proposed by Hazzard, seeing the coin of ca. 72 g as the bronze drachma and its subdivisions as representing 2, 3, and 4 chalkoi and 1, 2, and perhaps 4 obols[4] (there are still disagreements on many details).[5] Depending on the exact ideal weight the drachma is supposed to have had, the bronze drachma coin must have weighed about twenty times the weight of the Ptolemaic silver drachma (3.575 g). Although we cannot be certain what ratio prevailed in free transactions for the relative value

[3] On p. 13 it is noted that Ptolemy III minted an « exceptional series » of gold pieces of ca. 43 g and silver pieces at ca. 52 g. The gold is usually seen as representing the equivalent of Attic decadrachms, the silver as dodecadrachms on Attic standard. Various notions for reconciling them with the rest of the coinage have been advanced. R.A. HAZZARD, Ptolemaic Coins (Toronto 1995) has attributed the issues to Syria. But are they really Attic? It seems more plausible to recognize in 43 g a multiple of 1.5 on the weight of the gold coin (ca. 28 g) called the mnaieion (i.e., equal in value to 100 dr. of silver); it would then have a value of 150 Ptolemaic drachmas. The 52 g silver coins would probably be worth about 1/10 of this, thus 15 dr. The 15-drachms hypothesis was already put forward by D. VAGI, The Ptolemaic Pentekaidekadrachm, SAN 20/1, 1997, pp. 5-10.

[4] HAZZARD, p. 65. That would be the weight of the coin of ca. 48 g, which Cadell and Le Rider note (p. 20) were minted in great abundance under Ptolemy III. One may wonder if the fact that 4 obols was the salt-tax rate for men from 243/2 on was responsible for the large supply of this coin; for the rate see most recently W. CLARYSSE and D.J. THOMPSON, Chronique d'Égypte 70, 1995, p. 223-229, who point out that year 5, when the rate was lowered from a drachma to 4 obols, was also the date of the introduction of the title Euergetes and the cult of the Benefactor Gods.

[5] The statement on p. 18 that Hazzard followed the view that it was the ca. 96-gram bronze that was worth a drachma is misleading. What Hazzard actually said was that originally probably this was the case but that already under Ptolemy II a change took place in which the 72 g bronze was denominated as a drachma.

of these metals, we can be certain that it was much in excess of that level. As a result, the bronze coinage is recognized as having had a largely fiduciary quality at the time it was issued and for another forty years or more afterward. This is a critical point in reconstructing the monetary events of Philopator's reign.

The list of prices is prefaced by a careful methodological introduction and finished (pp. 57-58) by an equally prudent and sensible evaluation. In particular, it is noted that the list is as long as it is only because of the inclusion of penalty prices fixed in contracts, which the authors argue were regularly twice the average market price. This may have been true as a general rule, but if one looks at the table for the years down to 222, a period when there was no systemic change in price levels, it is obvious that the wheat penalty price is *always* 4 dr., while the actual price ranges from 1 dr. 1 ob. to 3 dr. The penalty price is thus twice a notional average market price but tells us nothing about what the actual price was at any time. It may be a reliable guide to this notional market price, at least in order of magnitude, but it is only an assumption that changes in penalty clauses will have kept pace with real-world price changes. In particular, it would be mistaken to think that it must have changed immediately to reflect what might have been seen at the time as short-term price movements. Penalty prices thus have much less precision of amount and of timing than real prices. When we see a one-time and lasting jump from 4 dr. to 10 dr. sometime before 216, however, it is evident that a significant change in real price levels must have taken place. Similar reserves may be expressed about the prices of barley and *olyra,* which are translated into corresponding wheat prices at normal ratios (these prices are scrupulously printed in italic type). These ratios also can have varied according to temporary conditions and might even have altered over the long run.

When all is said and done, however, the gaps in the evidence are the real problem. We have no datable prices for actual wheat transactions between the middle of the third century and 209. The last penalty clause at 4 dr. cannot be dated more precisely than 227/6 to early 221; the first at 10 dr. dates to 216/5, perhaps late 216. This provides a window of at least five years and perhaps ten for this apparent price movement. The next movement is equally difficult to pin down. There is a wheat price of 6 dr. in 209, but not another until 195, when it is 170 to 180 dr. An *olyra* penalty of 20 dr. in 203/2 suggests an intermediate stage, and an *olyra* price in the range of 30-33 dr. in 199 suggests another one. An *olyra* price of 60 dr. in 197 may point to yet another price point. But these *olyra* prices are not very secure information to work from.

The difficulty comes in part from the fact that the authors have excluded all prices of goods other than grains (wheat, with barley and *olyra* included only in relationship to wheat), on grounds of insufficient commensurability (p. 23-24). In an ideal world this argument would be decisive, but given how few wheat prices we have in the period when the big movements occurred, I do not think it can be accepted. It would be better (despite the arguments of p. 24) to take all available evidence and assess it as carefully as possible. The intelligent use made in this book of *UPZ* I 149 in support of the analysis of the uncoupling of bronze from silver is an example of what can be done.

Despite the difficulties, the texts do suggest that the price rise of Philopator's reign was not a single event – an adoption of a bronze accounting standard at some par-

ticular date, as it has sometimes been described.[6] Rather, prices in silver oscillated but underwent no long-term trend, while prices stated in bronze rose in a rhythm that can only partially be described. Here are the known clusters and points in the course of wheat prices, stated in bronze drachmas (prices with * are inferred from penalty clauses):

Down to between 227/6 and early 221: 1 to 3 dr., average 2 dr.*
From 216/5 to 209: 5*-6 dr.
203/2: 25 dr.* (calculated from *olyra* penalty clause)
199: ca. 75-85 dr. (calculated from *olyra*)
197-184: 120-180 dr.
173: 250 dr.*

There are thus apparently six levels at stake, different from one another by enough to exclude the possibility that they are just fluctuations (except that the last might be grouped with the period 197-184). The mention of bronze drachmas appears first in the second phase, and specifically in *BGU*[7] XIV 2397 (214/3). As the penalty price in that text is close to those given in other Oxyrhynchite texts[8] of the period from 216/5 on, it is likely that those other prices also refer to bronze drachmas, although this inference cannot be demonstrated conclusively. The only document from the decade between 209 and 199 is *BGU* VI 1266, of which a partial copy exists in *BGU* XIV 2386. It is a major embarrassment for almost all theories, because it has a penalty clause calling for 20 dr. of *silver* per artaba of olyra (this is the source of the wheat equivalent price above). Cadell and Le Rider seem not to have noticed, however (pp. 41, 63), that the phrase preserved in *BGU* 1266 with a general penalty of 4000 dr. of silver for expulsion of the lessees is also given in *BGU* 2386 omitting ἀργυρίου (as Brashear pointed out, see note to line 2). The likelihood that its inclusion was just a scribal slip in *BGU* 1266 is thus strengthened.

How are we to explain this curious history? The authors summarize the history of scholarship. Reekmans saw a decline in the silver supply and two doublings in the nominal value of the bronze coinage. Alessandra Gara, in a brief comment, saw an artificial accounting system. Klaus Maresch has most recently argued that the silver and bronze standards were unified under Ptolemy II, but that under Ptolemy IV, a true bronze standard independent of the silver standard came into being. Maresch also supposes that χαλκοῦ δραχμή could from Philopator on mean either a silver drachma paid in its bronze equivalent or a drachma in the bronze currency, at 1/60 the value. Subsequently, but before 183/2, the ratio was changed to 300:1. Richard Hazzard has proposed that Ptolemy IV reduced the weight of the bronze drachma

[6] For this reason, it is clear that statements like «according to *P.Tebt.* III 884 fragm. 1 the copper standard had not yet been introduced in Phamenoth of Philopator's 12th year» can be misleading (W. Clarysse and E. Lanciers, AncSoc 20, 1989, p. 127), arguing (p. 118, citing from Reekmans) on the basis of *P.Tebt.* III 770 that the bronze standard was in use by Pachon of the same year 12. As it happens, the latter text has a figure of 1500 dr., which sounds high; but it is the object of litigation embodied in a petition to the king and need not be referring to bronze currency.

[7] BGU = Ägypt. Urkunden (Gr. Urkunden) aus den K.(ab Bd. 6 Staatl.) Museen zu Berlin, 1895ff.

[8] Contrary to the statement on p. 60, one of the texts from this period comes from the Arsinoite.

from 72 g to perhaps 24 g and thereby increased by a factor of three the nominal value of bronze drachmas in circulation and in the treasury. Hazzard believes that this step was accompanied by the retariffing of the number of bronze drachmas equal to the silver tetradrachm from 4 dr. (plus agio) to 16 dr. (plus agio). Subsequently, this king then equated the bronze drachma to 60 bronze drachmas on a new standard of account, adopted (Hazzard thinks) for accounting convenience, eliminating the need to calculate in obols and chalkoi.

To all of these, Cadell and Le Rider raise various objections, which seem to me in the main well-founded. They point out first that what we are facing is not a single act, or even two acts, with the effect of multiplying prices by a factor of 60, but several stages. They next show that the market value of bronze is likely to have been something like 1/110 or 1/120 that of silver, not 1/60. This seems right to me; in late antiquity the ratio could go as high as 1/150. They also find the scheme proposed by Maresch too complicated and too prone to impute excessive ambiguity to contemporary terminology. To Hazzard's proposal they object that the Greeks managed to compute with obols and chalkoi quite well both before and after this period. And they reject entirely the notion that the entire process was driven by a scarcity of silver under Philopator.

The authors seek next to replace these theories with one of their own. They propose that the rise in prices was real rather than only the product of a new accounting method, and that it was «le résultat de plusieurs inflations successives provoquées par des conjonctures relativement claires» (p. 74). They compute the mean compounded rate of «inflation» for each of these periods, admitting that this is difficult to do where the boundaries of the periods are vague. I would even say that such computations are meaningless unless we already know what kind of event we are dealing with. Above all, however, the authors do not really define inflation until they present Fisher's theorem (p. 77). They concede, moreover, that there was no inflation in silver, only some fluctuations in prices (which they attribute to the actions of Sosibios and Agathokles during the Fourth Syrian War).

Finally we reach the stage of explanation – for what we have been given so far is not really explanatory. We are presented on p. 77 with Irving Fisher's equation *(mv = pq)*, invoked in order to explain the history of prices in Ptolemaic Egypt. This theorem describes a relationship between monetary stock *(m)*, velocity of monetary circulation *(v)*, prices *(p)*, and the quantity of goods and services *(q)*. But all attempts to suppose that a change in *q* has anything to do with the rise in prices founder on the fact that prices stated in silver did not change, except perhaps temporarily. If the rise in prices stated in bronze had been in any way the product of a reduction in production of goods and services, this rise should have affected silver as well as bronze; and we have already seen that Cadell and Le Rider reject the notion that silver became scarce. Despite all of the historical circumstances evoked on pp. 78 ff., we are no better off with *m* and *v*, for we know nothing whatsoever about changes in either of these variables and are not likely to learn anything much in the future.[9]

[9] I cannot discuss the financing of the war of Raphia in detail here, but a few points may be useful. The bonus in gold paid to the soldiers is likely to have been hoarded rather than spent. If the pay was in silver, and if it was sufficient to provoke inflation, we should

To offer historical explanations of such supposed changes in the money supply is to engage in circular reasoning, for it is based on the fixed idea that a change in the money supply is largely (if not entirely) responsible for the increases in *p* generated by Fisher's theorem. But that is in turn exactly what is being argued.

All we can actually see is a decline in the value of the bronze drachma against the silver tetradrachm. As Cadell and Le Rider say, the bronze money was uncoupled from silver and treated as an independent medium of exchange. Just as gold and billon in late antiquity traded independently and could be quoted in terms of one another,[10] Ptolemaic gold, silver, and bronze coins were traded independently.[11] Whether this should be described as two standards or one is perhaps a matter of semantics. It is clear that what happened was not simply the result of a decline in the value of the bronze coinage to the market value of the bronze that it contained. Bronze was overvalued in the fiduciary bronze coinage of the period from 260 down to Philopator by a factor of about 6 to 1 (120 divided by 20). But the first rise in prices stated in bronze is not enough to compensate for that, while by 199 the rise far exceeds an amount that would bring the relationship in line with metallic value. And still the rise continued.

To put matters another way, by 173 it looks as if wheat sold for 125 times as much in bronze drachmas as in silver drachmas. If the bronze drachma was still at that date a coin weighing twenty times as much as the silver drachma, then one could buy an *artaba* of wheat for 2 silver drachmas (weighing 7.15 g), then sell it for 250 bronze drachmas (weighing 18000 g). One could then sell the 18000 g of bronze for something like 150 grams of silver, or 42 drachmas, realizing a profit of 2000 percent. This is an absurdity.

It is therefore evident that after about 197 the bronze drachma cannot have represented the same weight that it did earlier. In other words, the nominal values of coins of a given weight must have changed.[12] As I noted in the previous paragraph, we find a ratio for the two drachmas of 1:125 by the late 170s. In 171 *P.Tor.Amenothes* 1.6) we find that 2 *kite* (= 4 dr.) weight of silver are worth 25 *deben*, i.e., 500 dr. of bronze. In that case, wheat prices between 120 and 250 bronze drachmas in this period would represent 1 to a little over 2 silver drachmas per *artaba,* much what we find in most of the third century. If the ratio of the value of the metals was, as Cadell and Le Rider suggest (p. 62), also something like 125:1, then the high-

see that inflation in prices in silver. If it was in bronze (as the authors think, p. 82), it would provoke depreciation of bronze against silver if returning soldiers wanted to save some of their pay in silver – and this is what we see. But general inflation of commodity prices? Is an infusion of bronze currency into the hands of perhaps 50000 or fewer men likely to have caused fundamental change in price levels in a country of several millions? Reekmans, n. 1, (see p. 65) already saw the difficulty in this assumption.

[10] See most recently E. Lo Cascio, Prezzi in oro e prezzi in unità di conto tra il III e il IV sec. D.C., Économie antique: prix et formation des prix dans les Économies antiques (Entretiens d'archéologie et d'histoire, Saint-Bertrand-de-Comminges 1998), p. 161-182, with bibliography.

[11] That such a thing could happen shows that the sort of fixing of the price in wheat denominated in silver that Cadell and Le Rider favor cannot have been possible.

[12] That this happened eventually in any case is supposed by Cadell and Le Rider (p. 19) in discussing the bronzes of Cleopatra VII with the marks Π and M.

est possible weight for the bronze drachma is the weight of the silver drachma, or about 3.575 g. At any higher weight for the bronze drachma, the scenario described in the previous paragraph could have happened. If in fact the drachmas weighed approximately the same amount, a bronze coin of 72 g, for example, instead of being one bronze drachma would now be 20 bronze drachmas (a *deben,* in Egyptian parlance). The humble 3 g coin, once 2 chalkoi, would now perhaps be a drachma.

But these figures are maximum figures, and it is entirely possible that in reality the coined bronze was still significantly overvalued relative to raw bronze. As a general principle, the denomination of the bronze coins should have been greater than or equal to the value of the metal, for otherwise they will have tended to disappear from circulation and be melted down. By this reasoning, the face value of a 72 g bronze coin must have been at least 2 dr. in 203/2; a 24 g coin must have been worth a minimum of 4 obols.[13]

Cadell and Le Rider have, as I indicated earlier, given us much to be grateful for: not only the best collection of focused evidence (although I would like all the rest as well!), but a considerable clearing away of past theory with a few trenchant remarks. They would not themselves claim that it represents more than a progress report, I think, and as such it is a success. My ruminations suggest something of the stimulus that I found in it, and I hope those who know more about this material than I do will find it equally stimulating and be led to real advances.

Roger S. Bagnall
Columbia University
New York

[13] I am indebted to Richard Hazzard for critical comments on a first draft of this review and several discussions of the subject.