Silver Use in Babylonian Cities in the Iron Age and in the Middle Bronze Age

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The purpose of this paper is comparative. It aims to contrast qualitative and quantitative information on silver use in Babylonia in the eighth to sixth century with data from the Old Babylonian period, i.e., the Middle Bronze Age (roughly 19th through 17th centuries BC). To assure the commensurability of the material this study is based on, we focus largely on texts culled from archives of land-owning, relatively prosperous families (and individuals) living in cities: the socio-economic niche occupied by these urban elites was roughly the same in the Old Babylonian period and in the Neo-Babylonian era.[1] It will be argued that this comparative approach can bring to light the significant differences between silver use in the two periods under discussion – differences which to some degree are hidden behind the structural similarity of the textual data.

Monetization in the 'long sixth century'

As a bench-mark for comparison, the 'long sixth century' (from the fall of Assyria 626/612 BC to the Babylonian rebellions against Xerxes, 484 BC) will be used. It can be shown that this period was characterized by a high degree of monetization of exchange and by a near-ubiquity of silver (Jursa 2010[2]). Throughout this period, silver was weighed, not coined. Much attention was given to its physical characteristics and to its fineness. The wide range of silver qualifications that appear early in the sixth century attests to the increasing need to distinguish silver forms and qualities and to attempts made to standardise the fineness of silver that was in circulation and/or at finding ways of conveying an institutional guarantee of a certain fineness.

Quantified references to the fineness of silver appear for the first time around 600 BC and are common only from about 565 onwards. The most common type was silver of 87.5 % fineness, probably the standard fineness until at least the 480ies. Silver of 83.33 % fineness appears at the beginning of the sixth century; at least in Uruk its use was discontinued suddenly towards the end of the reign of Nebuchadnezzar, around 565, certainly as a result of official intervention. Other degrees of fineness occur rarely (91.66 % at the beginning of the sixth century, 80 % in the last decade of Nebuchadnezzar's reign, 95.83 % and 90 % occasionally in the Achaemenid period, after 539 BC). Institutional interference with the physical form in which money circulated is also found in the case of the *ginnu* characteristic. This is a distinctive mark on, or form of, silver (but it does not refer to any known type of coinage). It conveyed information about the silver's purity and/or the institution guaranteeing this purity. From 530 to the 480s, silver designated as "income of the treasury" (*erbu ša aranni*) is attested occasionally. This would seem to be silver which bore a quality guarantee of the royal treasury, but we do not know how the guarantee was conveyed.[3]

Contrary to the opinion that silver should be seen as 'high-range money' owing to its high purchasing power, and hence as unsuitable for everyday exchange involving low-value goods (e.g., Bongenaar 1999), the texts show that silver quantities as small as 1/40 of a shekel (one *hallūru*,[4] the equivalent of roughly three litres of barley around the middle of the century, much less towards the end of the sixth century) actually changed hands. Fractions of a shekel between 1/24 and 1/4 are mentioned frequently, the bias of the written sources towards high-value transactions

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1 For non-specialists it may be useful to emphasize that we are talking here of archives that cumulatively comprise tens of thousands of documents: the periods under discussion are among the best-documented in all of Mesopotamian history, and in antiquity in general. See Charpin 2014 for the Middle Bronze Age, Jursa 2005 for the sixth century.

2 There, detailed references can be found in chapter 5.

3 The term may refer to a local form of coinage or to leather bags bearing the seal of the treasury and containing silver of a standardised fineness.

4 0.208 g, which is still heavier than some of the early Lydian coins (Jursa 2010: 631[3340]; Duyrat 2015: 371f. for tiny coins from Phoenicia and Philistia, down to 0.15-0.04 g).

notwithstanding: silver did not function as high-range money only in our period. Concomitantly, it circulated much more widely in the economy than the proponents of the high-range money thesis would allow. Admittedly the attestations for the purchase of low-value goods for silver are rare in comparison with the abundance of information on the purchase of more valuable items, but this is simply owed to the nature of the textual documentation. There is just as little information on the acquisition of everyday commodities through barter, or through purchase against payment in kind. Such transactions may have been common, of course, but there is no evidence to suggest that barter or payment in kind were the predominant method of exchange for everyday items (see below for the different situation in the Old Babylonian period).

In the economy of the large temple institutions, silver was the near-exclusive means of payment for all transactions reaching beyond the confines of the temple households. Owing primarily to the importance of cash-crop agriculture (the principal source of the temple's money income) and of hired labour which was paid for in silver, the temples depended on monetised exchange with the outside economy. Furthermore, a significant percentage (between thirteen and twenty-two percent in the samples analysed in Jursa 2010) of temple-internal payments were in fact made in cash. Salaries (or 'rations') of temple dependants and payments for priestly service, both of which normally were payable in kind were frequently substituted by silver payments. The fact that the temples' exchange with the external economy was largely monetised implies that the role of silver money in this external economy was equally important. This is important because the social range represented by the individuals without institutional attachments who appear in the temple archives in this way is more inclusive than the sector of the urban population - largely property holders - we see in the private archives: for most sections of the population, it was a fairly common occurrence to conduct low-value transactions with silver.

The importance of silver-based transactions for the non-institutional sector of the economy emerges also from the private archives of city dwellers (Jursa 2010: 624ff.). Silver was a common means of hoarding wealth (for those who had any wealth to hoard). Silver appears frequently in dowry lists and estate divisions, but staples do not. Valuable items - land as well as movable goods such as animals or slaves - were practically always bought and sold for silver. But also (comparatively) low-value commodities changed hands for silver; 'cheap' monies (barley, wool, base metals) and barter were not the only means of acquiring items of everyday consumption. For goods whose money values range between one and four shekels of silver (which is forty to 160 percent of the median monthly wage, 2.5 shekels, in the mid-sixth century), silver was by far the predominant means of payment. For goods costing less than a shekel (twelve days' wages), it is clear that silver amounts as small as 1/40 of a shekel, 0.208 g (the equivalent of three litres of barley, less than a third of a daily wage) actually changed hands, but it is impossible to establish the share of silver transactions in the total of transactions involving everyday goods of low value.

Silver was the usual means of paying house rents; agricultural rents on the other hand were normally paid in kind in the sixth century, only in the fifth century do field rents reckoned in silver money appear more frequently. Priestly offices could be rented for silver or in kind payments. Lending and borrowing at interest as a genuine independent business activity usually involved money loans, not loans of staples. Only a few debts in kind bore interest. Silver was also the normal form in which wealth was invested in business partnerships; staples (dates or barley) occur only infrequently.

For the work of free hirelings who were demonstrably employed full-time, e.g., as harvesters or builders or for other strenuous duties, silver money was nearly always paid. Wages in kind, on the other hand, were only paid to slaves and for part-time employment or very low wages, but even in these cases silver wages were not unusual.

Hired mass labour, rather than compelled labour, was the backbone of the labour force temples provided for the ambitious building projects to which they were required by the crown to contribute. These undertakings brought large amounts of silver money into circulation among the less affluent strata of the free population, both urban and rural. The agency of the crown played a major role in this respect: in the final count it provided much of the wealth that enabled the ambitious building projects of the period. The vast amounts of surplus silver that the Neo-Babylonian monarchy could spend in this way originated from the benefits of empire: the spoils from Assyria, the tribute from Syria. The monetisation of the economy in the sixth century was undoubtedly to a large extent a result of these particular political background conditions.

Workers' payments 'for the job' (rather than for their time) were usually effected in silver, although wages in kind and mixed payments are also attested. Specialists - bakers, stone carvers, masters successfully teaching a craft to an apprentice, and medical practitioners - could also receive a 'gift' (*qīštu*), often in the form of silver money as reward for services rendered.

Silver money predominated also in the realm of taxation and payments for substitute labourers who undertook corvée service in lieu of the landowners on whom this service in principle was incumbent. A few types of taxes called for payment in kind, but silver was used for the large majority of payments made in connection with state-imposed obligations, even before the 'tax reforms' of Darius. However, the link between these obligations and the attested payments was not straightforward. Both under the Chaldean monarchy and under Persian rule, the state was not so much interested in taxes paid by individual Babylonian households as in forced labour and military service - the 'tax system' was geared towards the mobilization of manpower for the crown rather than towards the acquisition of funds. Nevertheless this system had an effect on the use of money and the monetisation of the economy. In order to discharge their obligations, heads of households that were subject to royal demands for labour service hired substitute labourers or soldiers (who had to be paid in cash) if they could afford to do so. Private taxpayers therefore had to have access to silver: landowners at least were to some extent forced into the market for staples. Agricultural producers without additional sources of income had to sell some of their crops for cash; otherwise they would have lacked the means required for dealing with the demands made by the state. Also indirect taxes (harbour taxes etc.) and occasionally genuine direct taxes extracted on the basis of land-for-service schemes were payable in silver.

The eighth and seventh centuries BC

Surveys of the (limited) data available for silver use in Babylonia in the eighth and seventh century put the findings for the long sixth century into relief.[5] Physical silver circulated in the country in not indifferent quantities; it was the principal means of payment in the context of important land transactions and in the realm of the merchant. Merchants appear also in their traditional role (as we will see) as money lenders, owing to their access to ready silver. In the sixth century, this peculiarity of the merchant has disappeared. There are few data for low-value transactions, but what evidence there is suggests that for everyday transactions, silver was at best one of several means of exchange, staples such as wool or dates or barley having a higher utility owing to their lesser purchasing power. In institutional households, the traditional redistributive system based on salaries in kind is fully intact (while, as we have seen, it was being partially replaced by a system based on the use of silver in the sixth century). Diachronically speaking, the eighth and seventh century then represent an intermediate stage in Babylonia's transition from the nearly silver-free economy of the Kassite and post-Kassite period (Kleber, Fs. van der Spek) to the strongly monetized economy of the sixth century (and later centuries).

What kind of monetization in the sixth century?

Against the background of the eighth and seventh century, the ubiquity of silver in all sectors of the sixth century economy stands out: the role of silver in the economy had expanded from the late seventh century onwards. This development can be placed into a historical context (Jursa 2014): it must be connected with the political circumstances of the late seventh and the sixth century when Babylonia was at the centre of an empire which attracted, by compulsion or through trade, large amounts of wealth from the entire Near East. The purchasing power of silver fell so far (in comparison with earlier periods of Babylonian history[6]) to allow low-value transactions, and there is enough evidence to prove that it was actually used for such purposes (and of course it was always clear that silver was the near-exclusive means of payment for middle- to high-value transactions). The spending policy of the Babylonian kings contributed substantially to this

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5 See more detailed discussions in Jursa 2010: 500ff. and Fs. van der Spek.

6 The direct comparison of price data from the eighth/seventh and the sixth century is difficult since reliable price series from the earlier period are nearly absent. However, the one 'price series' of the seventh century that (to some extent) merits this name, viz., the prices for productive date gardens, does show significantly lower prices in comparison to the corresponding sixth-century data (Fs. van der Spek). See below for the (low) price level in the Middle Bronze age.

development by bringing large amounts of money into circulation. The quantitative importance of hired, rather than compelled, labour allowed a wide-ranging circulation of silver. Both the increasing specialisation of agriculture in the institutional sphere (and generally the imbalance of the institutional household economy) and the intensive horticultural regime typical of urban landowners were dependent on, and increased the importance of, money-based exchange: cash crops had to be sold and surpluses marketed, recipients of money salaries had to be able to buy their daily needs. In addition, the increasing tax and service obligations imposed on urban landholders, labour specialisation in the city and probably an increase of consumption above the level of subsistence needs all contributed to the increased involvement of the urban upper classes in money-based exchange. Few residents of Babylonian cities could have remained entirely untouched by the money economy. Much money flowed into the countryside from the city as payment for crops and for the labour of rural hirelings working in the city, or on the large-scale public building projects in the countryside. The rural population, even subsistence farmers living in villages, certainly had many uses for money. There was a need to pay direct taxes and various indirect taxes and fees, such as harbour dues and the like, substitutes fulfilling corvée duties or military service obligations incumbent on rural landowners received money wages, and the products of city-based craftsmanship also had to be paid with money. Importantly, however, agricultural rents were not normally paid in cash in the sixth century (field rents payable in money became common only in the fifth century): this is the most important reason to assume that while money had percolated into the countryside, its overall impact on the rural economic environment was less profound than in the case of the urban economy.

Thus far the *status quaestionis*. Can we take the argument for 'monetization' in the sixth century any further, in terms useful both for general comparative economic history and for comparing, in an Assyriological context, the sixth century with the Middle Bronze age? Lucassen, in a paper for this conference, states that 'deep monetization' requires "a substantial (per capita equal to between five and ten times the prevailing hourly wage) stock of currencies in circulation, consisting of denominations equalling the value of one hour or less of waged work." Does this apply to the sixth century? In the absence of coined money, hoards, dye studies etc., Babylonian material remains and textual data do not allow giving a straightforward answer to this question. However, it is possible to build a model based on comparative evidence that allows integrating extant information and leads to an hypothetical answer. We will use, as a test case, the economy of the well-known city of Borsippa. This site has left numerous archives of priestly families. Studying their property portfolios and business activities, I have argued elsewhere that in their majority, these families could dispose of an income of about four to six times subsistence requirements (Jursa 2010: 304). In terms of the model proposed for income distribution in the Roman empire by Scheidel and Friesen, this would put these families on income 'levels' 2 and 3 (3.3-6.7 times subsistence) (Scheidel and Friesen 2009: 84). According to the 'optimistic' scenario proposed by Scheidel and Friesen, which we will adopt,[7] these income bands correspond to 4.5% of the population. For Borsippa, this is plausible. Assuming 400 households of priestly families and families of similar wealth lived in Borsippa (Jursa 2010: 441 with note 2465),[8] we would arrive at a total of 8,890 nuclear households or an urban population of 35,560: roughly 150 per hectare for this 240-hectare site (Kaniuth 2007: 15), a credible figure for a large and hence not necessarily very densely occupied city.[9]

There are no data that would allow establishing directly the size of any other income group. Scheidel and Friesen based their model on Pareto's discovery that "the distribution of income tends to fall into a predictable pattern governed by power laws" (Scheidel and Friesen 2009: 79). In our simulation for Borsippa, we will continue to use the distribution of income levels proposed by

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7 It should be remembered that sixth century Babylonia experienced a period of unprecedented economic expansion and prosperity (Jursa 2010: 811f.).

8 This assumption is based on the data itself and on the comparison of Borsippa with the – demographically speaking – better known city of Uruk, whose priestly elite was studied by Kessler.

9 See the observations in van de Mieroop 1999: 95-97 and the bibliography cited there.

Scheidel and Friesen for the Roman empire,[10] and thus arrive at the following figures:

'Level'	Number of households[11]	Characteristics
5	71 (0.8 %)	8.4-10 times subsistence
4	107 (1.2 %)	6.7-8.4 times subsistence
2 and 3	400 (4.5 %)	3.3-6.7 times subsistence
1	578 (6.5 %)	1.7-3.3 times subsistence
0.75-0.99	1689 (19 %)	1.25-1.69 times subsistence
0.50-0.74	4889 (55 %)	At or close to subsistence
< 0.49	889 (10 %)	Below subsistence
Total	8623 (97 %)	

Table 1: hypothetical income distribution in Borsippa

The remaining 3 % of the population, according to the model used, belong to an 'elite' group whose income,[12] in Scheidel and Friesen's model, amounts to 17-26 % of the total all incomes: 17% in the optimistic scenario, in which middling incomes (defined as incomes between 2.4 and 10 times subsistence) of up to 12 % of the population amount to 27 % of the total gross income. Gross income beyond gross subsistence is as follows (taken from Scheidel and Friesen's table 11, the optimistic scenario only):

Élite	38 %
Middling incomes (ca. levels 1-5)	47 %
Others	16 %

Table 2: a model for the distribution of 'disposable income'

Through dowry lists, we can gain an insight into the quantity of disposable cash that circulated in priestly families (see Jursa 2010: 807ff.). The median dowry in our priestly families was around 40 shekels (332 grams) of silver.[13] On the – improvable – assumption that such a dowry amounted to half the disposable cash available in a household,[14] this means that families in income bands 2 and 3 could dispose, as a minimum, of 80 shekels of physical silver.[15] On the further assumption that the quantity of cash silver follows the general income distribution, this allows us to calculate as following the hypothetical total of silver held in Borsippa:

'Level'	Number of households	Cash silver (shekels)
5	71 (0.8 %)	10,430
4	107 (1.2 %)	12,800
2 and 3	400 (4.5 %)	32,000
1	578 (6.5 %)	23,110
Total	1156 (13 %)	78,340

Table 3: disposable cash in 'middling' income ranges in Borsippa

[10] But note that we have merged their levels two and three – which correspond to our priests, whose income, in terms of multiples of the subsistence requirements of a household, forms the 'Archimedean point' (such as it is) of the present exercise. Scheidel and Friesen's model falls into the middle range in terms of division of property and inequality attested for several historical societies and thus imposes itself as a useful point of departure also from this point of view.

[11] Figures have been rounded.

[12] The sociological identity of this group is immaterial in this scenario; it can be postulated on the strength of the Pareto model alone. In Assyriological terms, here is the niche in the model for the temple households.

[13] The mean is significantly higher. Roth 1989/90; numerous unpublished texts from Borsippa.

[14] It may well have been less, much less likely more.

[15] It is in fact likely to have been a smaller share in most cases, which increases the quantitiy of silver available in the priestly households.

In a final step, we can extrapolate the hoarded/disposable[16] silver for élite and low income levels[17] on the basis of the figures given above in Table 2: the small élite should have 81 % (38/47) of the middling groups' silver, the lower income ranges, 34 % (16/47): 78,340+64,455+26,636= 169,431 shekels = ca. 1412 kgs of silver. Per capita, assuming a population of 35,560, this amounts to 4.76 shekels, well above a month's wage (2-3 shekels in the mid-sixth century). It should be emphasized that silver was a means of storing wealth, obviously, but dowry silver, just as silver in private hands in general, was just as likely, or even more likely, to be brought into circulation at some point. On the basis of this hypothetical reasoning, therefore, the first condition for 'deep monetization' would be met. And it would be met rather easily, with a wide margin of error and potential inaccuracy.

The second condition for 'deep monetization' states that money should be in circulation "consisting of denominations equalling the value of one hour or less of waged work." It can be shown that in the sixth century, silver of as little as one fortieth of a shekel (0.207 grams) actually changed hands.[18] If we assume that the work-day was divided into six 'hours', one hour of the average wage (of 2.5 shekels per month under Nabonidus) corresponds to 0.115 grams (2.5 'barleycorns' of silver, in Babylonian terminology): the fortieth of a shekel is not that far off. Again, the point of the foregoing speculations is not to prove that the Babylonian economy in the sixth century was characterized by what has been defined as 'deep monetization' – the available data do not bear the weight of such an argument. What they do allow is an arguably plausible modellization of silver use and income structure that would fit a 'deeply monetized' economy. If we wanted to construe the data to speak for 'shallow monetization', our priestly families, about whose property structure we are well informed, would have to be a tiny elite. This runs conter to what we know about their social position and their income structure in general, and furthermore these families are too numerous for placing them in a position on the top of the income scale: we would arrive at implausibly high overall population figures for the known surface area of the city of Borsippa.

The Middle Bronze age: the state of the question

Going back in time, we now move to silver use in the Middle Bronze age, i.e., in the Old Babylonian period (roughly 19th through 17th centuries BC). The intervening Middle Babylonian period, a period of great silver scarcity, has recently been treated by Kleber in the Fs. van der Spek and will not be touched upon. The Old Babylonian data for silver use was treated by scholars such as Powell, Sweet, Renger, van de Mieroop, Skaist, and several others. Some scholars (Sweet, Renger), influenced by Polanyian 'substantivism,' have argued for a silver-poor economy in which the precious metal serves principally as a money of account and a measure of value, while others have seem much evidence for the circulation of physical silver. Stol (2004: 860ff.; 900ff.) presented a magisterial survey of the evidence which brought him to side, tendentially, with the modernists. Silver circulates in the form of 'ring silver', one ring often weighing (around) 5 shekels. In palace archives, references to precious items made of silver abound; there is a distinction between the value of an object's raw material and its actual, higher value (*nību*, literally 'quote') that results from the added value of the material's artisanal elaboration. Silver in small, weighed and standardized quantities (between 15 ŠE, 0.7 grams, and 1 shekel, 8,3 grams) was kept, and allowed to circulate, in small leather bags (*kinkum*); the fiduciary value of the sealing and the bulla which states the weight is often referred to, and is contrasted with the lesser value of 'open' (*piṭru*) silver. Quantified references to different degrees of the silver's purity, however, are absent.

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16 It should be remembered that silver was by far the most common means of hoarding wealth.

17 I.e., the nineteen percent of the population whose income is above mere subsistence but below that of level 1.

18 Objections that weighing such small quantities of silver would introduce an inacceptable margin of error are immaterial given the fact that the texts actually do show such quantities in circulation. In any case, an inaccuracy that could not be ascertained for technical reasons would not have impeded the use of these tiny chips of silver (much like micro-coins studied by Duyrat 2015); statistically, when more such pieces were brought together, the inaccuracies would have tended to cancel each other out.

For Stol, silver was an ubiquitous means of exchange in the Old Babylonian period;[19] and, indeed, a survey of randomly chosen test corpora confirms, or seems to confirm, this picture. For instance, the hundreds of real estate sale contracts from Northern Babylonia published by Dekiere (1994-1997) state the purchase price as a rule in terms of a quantity of silver.[20] One might also turn to the Old Babylonian archives of priests – families homologous to the Borsippean priests who have been the subject of our test case discussed above – they attest a wide range of silver use.[21] We find silver used for the purchase of real estate (e.g., UET 5, 140); there are silver debt notes (e.g., YOS 12, 67); house rentals are paid in silver (BIN 2, 83); temple offices are bought for silver (e.g., YOS 12, 297), as are slaves (e.g., YOS 8, 86). Silver appears also as a money of account, such as in a long itemized list of expenses for a marriage ceremony stating the silver value of numerous items such as oil, garment, sesame, barley, garments, etc.[22] Text types, in general, and the categorical nature of much of the evidence are essentially the same as those of the later periods discussed above, so the question might be asked: if silver was indeed so widely used, where then is the structural difference – if any – to the sixth century, and to the eighth and seventh centuries? The contrast is evident once not only qualitative, but also quantitative information is taken into account.

Silver as a scarce commodity in the Old Babylonian period

An obvious point of departure is comparing the purchasing power of silver in the two periods under discussion. Unfortunately, price data from the Old Babylonian period, while certainly not rare, do not lend themselves easily to the type of quantitative analysis possible for the corresponding information from Iron Age Babylonia from the sixth century onwards.[23] Still, frequently quoted standard prices do allow a rough comparison (we cite sixth century median prices from Jursa 2010: 793 unless stated otherwise; silver prices are in shekels (8.3 g) unless stated otherwise).

Commodity	Old Babylonian	Sixth century	Reference
Barley (g/litre)	Often less than 0.021[24]	0.069	Jursa 2010: 630[3337]
Wool (g/kg)	2.76	4.15	Stol 2010: 971
Male slaves	24	58	Jursa 2010: 630[3337]
Cattle	Rarely > 8	Normally > 13	Stol 1995: 176ff.; van Driel 1995: 231f.[25]
Wages (š/month)	1 (or 300 litres of barley[26])	2.5	Stol 2004: 861f.

[19] Stol 2004: 909: "Die Vorstellung Rengers (i.e., that silver was not used as a means of exchange) mag für kleine Gemeinschaften zutreffen ... Sobald man aber Verbindlichkeiten oder Aufträge schriftlich in Schuldurkunden, Briefen usf. festlegt, dient Silber als Tauschmittel."

[20] Supporters of the silver-less economy would take these texts to refer to silver as a money of account only, but by and of themselves, the texts give no clear indication that this should be the case. We will return to this point in the discussion below.

[21] Our test corpus comes from Ur: Charpin 1986.

[22] UET 5, 607 (Charpin 1986: 65). The overall value of the goods is 2.67 minas of silver – most of which consists of expenses in kind; cash expenses, which are also included, amount to less than a third of a mina.

[23] Let alone the elaborate analyses of the price data from the Babylonian Astronomical diaries of the Late Achaemenid and Hellenistic periods that were undertaken by B. van der Spek and his research group.

[24] Which corresponds to 0.75 shekel per OB *kurru* (300 litres). The texts often cite a standard conversion rate of 1 shekel per *kurru*. This standard conversion rate is also invoked in the sixth century, when, however, the *kurru* is much smaller: 180 litres. This alone is sufficient evidence for a relative devaluation of silver in the later period. Cf. Stol 2004: 860.

[25] The prices vary according to the age and the state of health of the animals. Nevertheless, even a superficial glance at the evidence collected by Stol and van Driel shows that the Neo-Babylonian price level is much higher.

[26] According to Stol 2004: 862, quantification was more often done in silver than in barley, actual payment, however, was generally effected in barley. In the Old Babylonian letter corpus (see below), wages are nearly always quantified *and* paid in barley.

House plots (š/36 m^2)	Often around 60	Ca. 90 (5^{th} cent.)	Stol 2004: 860; Jursa 2003: 59[27]
Arable land (š/ha)	9.26 (Sippar)	13.33-44.44	Stol 2004: 860; Wunsch 2000: I 41

Table 4: comparison of Old Babylonian and Neo-Babylonian price levels

Overall there can be no doubt that in the sixth century, price levels were significantly higher than in the Old Babylonian period, the uncertainty of some of the generalizations in the table above notwithstanding. The generally very stable wool prices can serve as a benchmark for the minimum rate of silver devaluation that can be posited: in the sixth century, wool was nominally 50% more expensive than in the 17^{th}; the reduction of the standard size of the capacity measure *kurru* (which, in terms of barley, was traditionally equalled with one shekel of silver) from 300 to 180 litres suggests a decrease of the purchasing power of silver by 40 % (note 24).

Relatively speaking, then, silver was undoubtedly more scarce in the Old Babylonian period than it was in the sixth century. Yet there is no lack of references to silver in contexts in which there can be no doubt that physical silver is intended. This is in particular true for letters, in particular private letters, a text type abundantly attested in the Old Babylonian period – the following remarks are based on a corpus of roughly eight hundred of these texts which have been selected at random from among the full corpus of several thousands.[28] These texts are useful in the present context because their format and phraseology is not as highly standardized as is the case, for instance, for real estate sale documents. In the latter texts a reference to "silver" may or may not have been intended to refer to physical silver (note 20), owing to the fact that the terseness of the sale contracts' formulary may conceivably have caused practical details of the transaction, such as the actual nature of the purchase price, rather than just its value (customarily expressed in silver) to remain unexpressed. In letters no such restrictions apply and it is possible – at least in a majority of cases – to distinguish clearly references to silver as money of account and standard of value from references to physical silver.[29] The former are by no means rare,[30] but the latter are even more frequent: some twenty to twenty-five percent of the private letters refer to physical silver. This is not much less than what evinces from a structurally comparable corpus of Late Babylonian letters (Hackl *et al*. 2014 = AOAT 414/1) where physical silver is mentioned in about a third of the letters. The contexts in which Old Babylonian letters talk of silver are similar to what we find in the sixth century: money is often to be sent, usually under seal – it can be rejected when the seals are not intact;[31] it purchases a wide range of commodities from basic staples to human beings;[32] dues and taxes can be paid in silver;[33] it is used for business ventures,[34] and it is given as loans, against interest or without interest, often by merchants.[35] This is essentially the same range of uses, qualitatively speaking, one encounters in the analogous letters of the sixth century – if one disregards the focus on the merchant as the archetypal lender of silver: this quasi-monopoly was no longer extant in the sixth century. Yet a comparative perusal of these letters evinces a range of

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27 The variety of house prices is quite wide, however, and no comprehensive study is available. See van de Mieroop 1999a: 269ff.

28 The corpus is made up of the volumes 10, 11, 12 and 14 of the series *AbB* (*Altbabylonische Briefe*), Leiden 1985ff. We will compare the references to silver in this corpus against those found in a the smaller, but otherwise analogous corpus of Late Babylonian letters published in Hackl *et al*. 2014 (242 letters).

29 To clarify by means of an example: a sale contract for a slave might state that the slave was bought for 20 shekels of silver. This may or may not refer to physical silver. A letter might state that a slave was to be bought for 20 shekels of silver – and then ask for the said silver to be sent. In this case, the text assuredly speaks of physical silver.

30 *AbB* 12, 164 is one example of many: eight litres of oil are to be traded for salt; it is then said that since the oil has a value of two shekels of silver, salt worth two shekels of silver is to be brought.

31 E.g., *AbB* 14, 48.

32 E.g., *AbB* 11, 176: a price of 20 shekels is offered for a slave; the offer is rejected and then increased to 30 shekels.

33 E.g., *AbB* 14, 178.

34 E.g., *AbB* 11, 185.

35 E.g., *AbB* 10, 163; 11, 159.

significant quantitative and qualitative differences.

In the ca. 800 Old Babylonian letters examined, we have about 90 quantified attestations of silver which refer certainly or probably to physical silver. The quantities range from five minas (300 shekels, *AbB* 14, 16) to 1 ŠE (1/180th of a shekel, 0.005 g, *AbB* 12, 53). One third of the references is to quantities of one shekel (8.3 g) or less, while only twelve percent of the references refer to quantities of half a mina (250 g) or more; the median is four shekels. Practically all attestations of silver quantities of more than a few shekels fall into a very narrow range of contexts: the purchase of slaves or real estate (sometimes these references are very terse and 'silver' may also be intended as a money of account), trade, often involving groups of merchants and an involvement of state institutions, and taxation. In comparison, the range of silver quantities in the Late Babylonian private letters (ca. 40, culled from 242 texts) is wider: 0.5 shekels (AOAT 414/1, No. 189, to 40 minas, No. 207). Only about ten percent of the references are to quantities of one shekel or less, while nearly forty percent refer to one mina (sixty shekels) or more; the median is fifteen shekels. While trade and taxation are important topics involving larger quantities of silver, they do not loom as prominent in the record as they do in the Old Babylonian period. The comparison of the two letter corpora shows quite clearly that Late Babylonian letter writers – usually from the group of propertied city dwellers who have left us their archives – handled larger sums of silver money than their Old Babylonian ancestors.

The letters allow underpinning this impression of a different role of silver in the Old Babylonian period by a range of qualitative observations. The Late Babylonian letters reflect quite clearly the strongly monetized economy of their time, and silver is the unique point of reference when writers feel the need to quantify economic value.[36] This goes so far that a statement about favourable interest rates is introduced by what seems to be a proverbial expression: "a man who owns silver counts it every day" (Hackl *et al*. 2014: No. 114). In the Old Babylonian letters, on the other hand, there is a much clearer awareness that silver is not the only money medium in use. In some contexts, scrap metal and copper may be referred to as means of payment,[37] but the real competitor of silver is barley. Wages, for instance, are much more often quantified (and paid) in barley than in silver – the opposite applies for the sixth century.[38] The equal weight silver and barley were given in the economic mentality of the Middle Bronze age can be seen in (perhaps more or less rhetorical?) pleas for help in situations of scarcity and famine: "I borrowed one shekel of silver from a merchant to buy barley and thus I could eat" we can read in *AbB* 14, 114, and similarly, in *AbB* 12, 189, "I am hungry, (that is why) I write to you. My hand is *empty*. Keep me alive, give me one shekel of silver that I may eat because I do not want to steal (for it)." On the other hand: "It is for your sake that I am starving. Send me each 1 *kurru* of barley and I will pray for you" (*AbB* 14, 26); "... came before me in tears, very depressed, and said: 'You want to abandon us and go to Babylon without leaving us food to survive even one single day!' When you see my letter (remember that) I had told you to provide [x] barley..." (*AbB* 14, 177); "give him either two or three *sūtu* of barley so that he can eat..." (*AbB* 11, 61).

In actual practice, the two money media were clearly mutually exchangeable but they were not encountered with equal frequency. Especially in the context of trade, silver was a preferred medium of payment owing to its easy portability, but its availability could by no means be taken for granted. Barley was the less convenient, but generally available alternative. Passages like the following are characteristic of the economic system and find at best rare equivalences in the sixth century where the use of barley as a money medium is rarely attested.[39] "We have arrived in Yablia, but there was neither silver nor barley (to be had) for (our) oil. The herald made a proclamation, but no one gave us barley nor did we receive any silver. ... I hope a letter of yours, my lord, will come quickly; we would like to get away from here as quickly as possible, as one can't even get 120 litres of barley for a litre of oil."[40] "As for the dates, if there is silver, sell them

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36 Jursa in Hackl *et al*. 2014: 80f.

37 *AbB* 14, 109; see also *AbB* 11, 95, 153, 181.

38 E.g., *AbB* 14, 23, 54, 110, 146, 204; silver: *AbB* 54.

39 It is still fairly frequent in the eighth century: Jursa 2010: 504.

40 *AbB* 12, 95: *ana yablia nisniqma ana šamnim ul kaspum ul še'um u nāgirum issīma še'am ul iddinūniāši kaspam ul nimḫur. ... ṭuppi bēli kâta lillikamma arḫiš i nittalkam u ana ištēn qa šamnim* 2 *pān še'um ul ibašši.*

for silver; if not, i.e., if payments are made in barley, do not sell. Sell your emmer for silver."[41] "Silver has become available for textiles. Ask the god whether it is safe and depart. If there is indeed silver over there, sell (your textiles) for 5 shekels."[42] In a school letter we read the following: "open my sealed storeroom. Set apart as provisions for the household, ointment, and clothing for the household: twenty *kurru* of barley, thirty *kurru* of dates, five *kurru* of sesame, one talent of wool. Then lock (the storeroom) and attach your sealed tags, please. The household must not go hungry" (*AbB* 11, 170): silver has no role in this stereotypical situation.[43] In another letter, there is a similar, but very revealing statement: "open the sealed storeroom and set apart ten *kurru* of barley for seed and fodder and ten *kurru* of barley for silver for the *palaces* (*ana* é.g[al]-*a-ni*)" (*AbB* 11, 187): apparently demands made by the state were phrased in silver, but they were met in barley.

Passages like those cited above, which attest to the relative scarcity of silver and reveal (in the case of the last letter cited, *AbB* 11, 187) the importance of the use of silver as a simple money of account bring us back to the discussion of sale contracts (and similar texts) alluded to above, i.e., the question whether or not the prices given in *kaspu*, silver, in these highly standardized documents necessarily need to be considered references to physical silver (above at note 19). As we have seen, also the letters generally speak of silver when talking about the sale of land or slaves, and at least in some cases (e.g., *AbB* 14, 133) it is clear that physical silver is meant. In other cases however, the opposite can be shown: In *AbB* 14, 156, reference is made to a slave girl sold for "ten shekels of silver" – this is what the sale contract must have stated. From the rest of the letter it then follows that four of the ten shekels were actually paid in the form of sesame oil, while the rest remained outstanding. The balance was eventually to be paid by a mixed payment of silver and barley. In the light of all that has been said about silver in the Old Babylonian letter corpus, it is virtually certain that similar mixed transactions[44] hide behind many of the purchases of land or slaves against 'silver' which can be found in the Old Babylonian documentary record – but how frequent was this phenomenon overall?

A hypothetical answer to this question – perhaps the most urgent question with respect to silver usage in the Old Babylonian period – can be given by drawing on two types of documents which necessarily reflect property patterns very closely: inheritance divisions and dowries. Sweet noticed the rarity of silver in inheritance divisions, a 'troubling' observation according to Stol, who argues in general in favour of an important role of silver and duly notes that some inheritance divisions indeed do mention silver.[45] The data are as follows: in the corpus of 154 inheritance documents analyzed in Weszeli 1991, only ten documents (from Sippar, Nippur, Kutalla, Larsa and Ur) mention silver shares: silver is absent in the vast majority of inheritance divisions. The text YOS 8, 98 from Ur is exceptional; the rich estate divided here comprises not only houses and gardens and numerous slaves, but cumulatively also nearly 30 minas of silver. Otherwise, no single inheritance share attested in the corpus (19) is higher than 25 shekels. The mean and median are around 8 shekels (disreagarding the outlier YOS 8, 98). In marriage documents[46] cash silver given to the groom as a dowry is practically unkonwn;[47] and only occasionally silver rings weighing a few shekels and other types of jewelry are listed.[48] The *terḫatu* payment made by the groom to the bride's family, on the other hand, is quantified in silver. It ranges from one to 40 shekels, but most often lies between five to ten shekels. These are sums that lie far below the corresponding

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41 *AbB* 10, 145: *aššum suluppī šumma kaspum ana kaspim idin šumma lā kīʾam šeʾum madid lā tanaddin kunāšīka ana kaspim iddin.*

42 *AbB* 12, 38: *ana ṣubātī kaspum ittabši šumma* šalim *ilam šālma alik šumma ašariš kaspum ibašši ana* 5 *šiqlī iddin*.

43 The same phrasing can also be found in *AbB* 11, 178.

44 Which, it may be useful to repeat, are practically unknown in the sixth century.

45 Stol 2004: 909, where also Sweet's contribution is cited. See also Kalla 1998: 42.

46 The corpus can be found in Westbrook 1991 (ca. 100 texts).

47 Exception: "PNF has brought in 19 shekels of silver for PN her husband," BE 6/2, 40 = Westbrook 1991: 114.

48 E.g., "half a shekel of silver about her neck, a silver ring of 2 shekels, a silver ring of 1 shekel," CT 8, 2a = Westbrook 1991: 118.

payments in the sixth century.[49] In the present context, the main point to be made is that the rarity of silver in these texts cannot be disregarded: the dowry and inheritance documents necessarily reflect the composition of patrimonies quite closely. We would be inclined to conclude, with Sweet, in line with the impression given by our survey of the letter corpus, and pace Stol, that cash silver was infrequently part of estates in significant quantities and that this absence reflects a genuine silver scarcity within the economy (but by no means a near-complete absence of physical silver). This reading of the evidence cannot be reconciled with the position that takes at face value the data of the sale contracts for high-value purchases, which ubiquitously speak of (significant amounts of) silver: the conclusion, then, must be that in these texts silver very frequently was simply a money of account only, and that for the actual payment other types of money (barley, dates, wool), or a combination thereof (possibly including also physical silver) was used.

Conclusion

Two related points are argued in this paper. In the sixth century BC, the Babylonian economy was largely silver-based and monetization reached an unprecedented level – a level which on the basis of comparative data may well have met the requirements for being labelled as "deep monetization." The findings for the sixth century are thrown into sharp relief by a survey of corresponding data from the Middle Bronze age. The Old Babylonian economy depended on a variety of monies, barley being the most important. Silver was crucial especially for long distance trade and and was by no means absent from everyday circulation, but overall it was scarce and many of its appearances in private archives have to be considered examples of its use as a money of account only. The argument made here turns against the assumption of a 'millennial' continuity in the Babylonian economy. Similarities in the typology of the abundant documentation may hide, and in the case examined here,in fact do hide deep structural differences in the economy the documentation reflects.

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[49] See Jursa 2010: 810f. for pertinent comparisons.

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