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# THE ORIGINS

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# OF VALUE

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*The Financial Innovations  
That Created Modern Capital Markets*

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EDITED BY WILLIAM N. GOETZMANN  
AND K. GEERT ROUWENHORST

International Center for Finance  
at the Yale School of Management

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has often been criticized as unnatural in world history. Aristotle in the fourth century B.C. attacked interest as follows:

The most hated sort [of wealth], and with the greatest reason, is usury, which makes a gain out of money itself, and not from the natural object of it. For money was intended to be used in exchange, but not to increase at interest. And this term interest, which means the birth of money from money, is applied to the breeding of money because the offspring resembles the parent. That is why of all modes of getting wealth this is the most unnatural.<sup>14</sup>

Later literature abounds with portraits of those who charge interest as evil; but the textual records of Babylonia reveal the development of interest on loans and its fundamental concepts. The Sumerian word for interest was “máš,” a term also used to indicate a lamb. While this dual usage may have been a mere coincidence, a logical connection between the two meanings can be established. In the agricultural system of Iraq, in the distant past as well as in modern times, a tenant could graze animals on the fields he rented. As his herd expanded, partly because of the landlord’s investment in the land (especially when the latter provided water for irrigation), this increase was taxed and the tenant had to hand over a small number of lambs. Similarly, an advance of silver or barley could be considered as the productive use of that capital, for which the creditor charged a fee, to be paid when the advance was returned. Interest thus originally resembled a grazing fee,<sup>15</sup> which was due because of the growth of a herd, to be paid with lambs.

A remarkable aspect of interest rates throughout Mesopotamian history was their constancy when officially stated. From the early second millennium a number of royal decrees exist that always proclaim a 20 percent interest rate for silver loans, and a 33.33 percent rate for barley loans. The Laws of Eshnunna, from the early eighteenth century, state in a concise way:

Per 1 shekel <of silver> (180 barleycorns) will accrue an interest of 36 barleycorns (i.e., 20 percent); per 300 silas <of grain> will accrue an interest of 100 silas (i.e., 33.33 percent).<sup>16</sup>

The famous stela inscribed with the Code of Hammurabi, dated to the mid-eighteenth century, is damaged in the part that contains the paragraphs relating to interest. We can reconstruct the text, however, from a contemporary clay tablet, though it is not well preserved and the lines are somewhat muddled. The relevant paragraph can be translated as follows:

If a merchant gives grain or silver an interest-bearing loan: per kur (300 silas) of grain he shall take 100 silas as interest (i.e., 33.33 percent); if he gives silver as an interest-bearing loan: per shekel (180 barleycorns) of silver he shall take 36 barleycorns as interest (i.e., 20 percent).<sup>17</sup>

Actual contracts from the early second millennium express the same idea as well. Some barley loans state that “he shall add as interest 100 silas per kur.”<sup>18</sup> Silver loans use various formulae to indicate that 20 percent of interest is to be added,<sup>19</sup> such as “an interest of 12 shekels per mina is to be added.” More than a thousand years later, the same formulation can still be found in Babylonian contracts of silver loans. They often state, “Every month, one shekel of silver will be added to one mina (60 shekels),” arriving thus at a 20 percent rate after twelve months.<sup>20</sup>

These figures were not arbitrary, and, as is clear from their permanence, were not set by forces of supply and demand. In the case of silver they result from the systems of measuring weight and time. In Mesopotamia’s sexagesimal system of weight measures, the mina and the shekel were two basic units, the former sixty times larger than the latter. For both measures a single vertical wedge 𐎶 indicated the number one. The value of the wedge was thus only clear when succeeded by the term mina or shekel. Since interest was related to the growth of a small lamb from an adult sheep, it was easy to see a parallel of the larger mina giving birth to a smaller shekel. As the Babylonian year was usually made up of twelve months, the monthly addition of one smaller unit, the shekel, to the higher ranked unit, the mina, led to an annualized increase of 20 percent.<sup>21</sup> In the case of barley the interest rate was higher, namely, one-third of the borrowed amount. That rate may have been derived from the rental fee on the use of a field for farming,<sup>22</sup> which often was set at a third of the yield,<sup>23</sup> but this remains uncertain. Of course we need not seek for economic reasons to explain interest rates then.

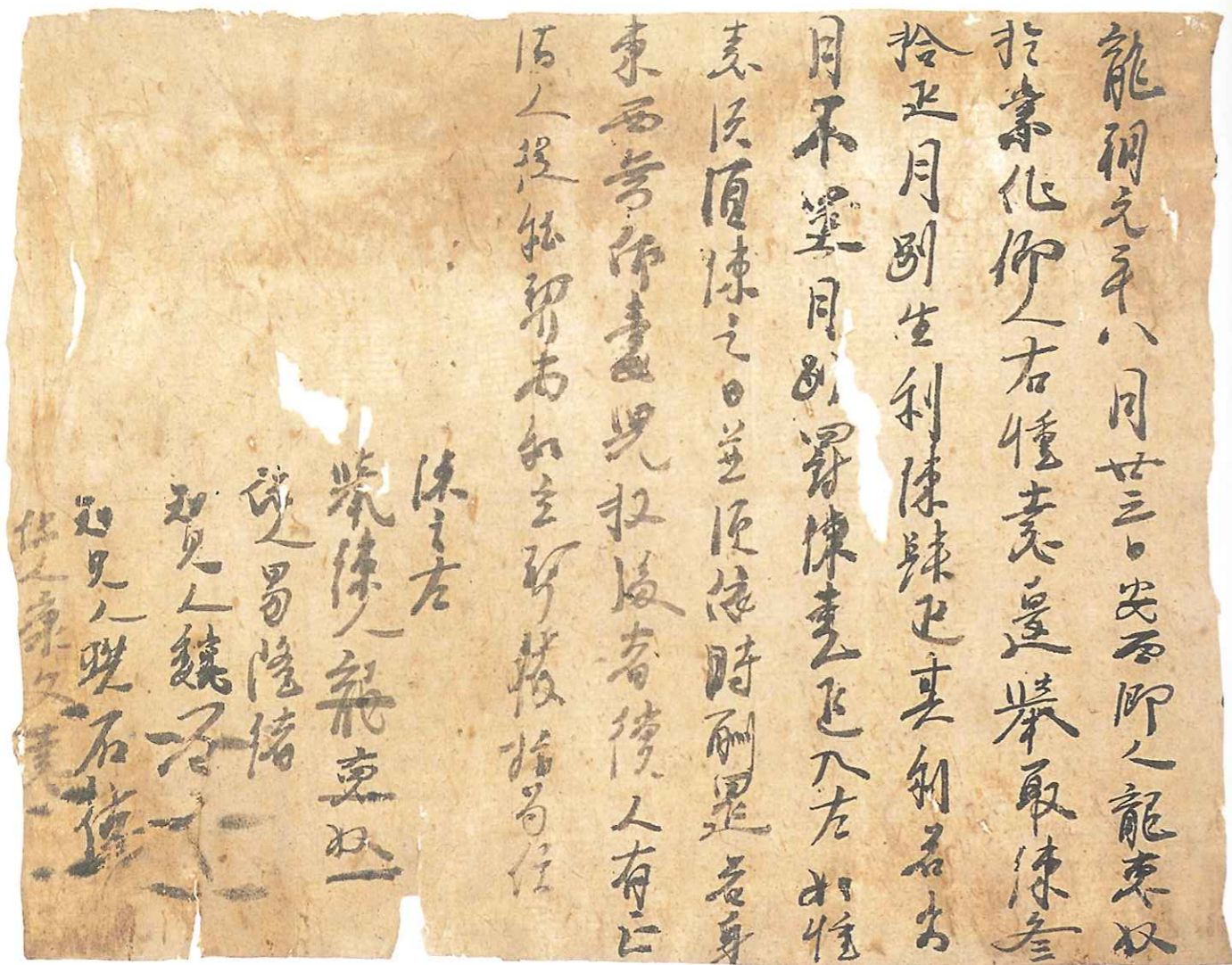
It is unclear why silver and barley loans would have been issued at different rates of interest. Some scholars have suggested that this was due to fluctuations in the market price of barley. Most barley loans were taken out shortly before the harvest, when prices were high, and repaid after the harvest, when prices were lower. An investor, who could have given a loan of silver rather than of barley, would want compensation for the loss of value of the barley. Instead of merely asking for a 20 percent increase in the amount to be repaid, he added another 10.33 percent. That extra amount of barley would make up for the fact that one liter was worth less at the time of repayment than when it was originally issued as a loan.<sup>24</sup> This “modernist” interpretation—using contemporary concepts in the explanation of the ancient economy—is based on the belief that market forces influenced credit. Matters are not that simple, however. If commodity prices indeed affected interest rates, would we not see greater variation, as barley prices were not constant from year to year? Moreover, in practice the rates of interest did not always adhere to the principles stated by the kings. For example, in southern Babylonia from the mid-nineteenth century on, barley loans had a customary interest of only 20 percent, while those in the north stayed at 33.33 percent.<sup>25</sup> It seems more likely, then, that the rates of barley and silver varied as a result of custom rather than of economic factors, such as the price of certain commodities. Similarly, we still adhere to certain customary fees: a litigation lawyer receives one-third of the award, a real estate agent 6 percent of the sale price, and so on.

The importance of the officially stated rates can be seen in practice; when interest is stated it often adheres to the customary 20 percent for silver or 33.33 percent for barley. The latter did, however, go down to 20 percent in southern Babylonia after the mid-nineteenth century.<sup>26</sup> That certain norms were accepted by all is shown as well by boilerplate phrases, such as “the standard interest will be added,” or “the interest of the god Shamash will be added.”<sup>27</sup> It is clear, however, that the customary rates were not always charged, and variation is visible, even within a single archive. For example, the preserved records of the twenty-first century moneylender SI.A-a<sup>28</sup> include fifty-two loans of silver, barley, and, more rarely, wool and sheep. These rates are found for silver and barley<sup>29</sup>:

Silver	Barley
20 percent: ten times	33.33 percent: twenty-three times
0 percent: four times	25 percent: once
	10 percent: twice
	6.25 percent: once
	0 percent: once



The code of Hammurabi. Inscribed black basalt. Mid-eighteenth century B.C. The stone stele recording Hammurabi’s code is in the Louvre museum. The figures at the top represent the ruler and a deity. The text contains a number of references regulating loans and interest rates.



Contract for loan of silk. Ink on paper. 661 A.D. This contract records the loan from a moneylender of thirty bolts of silk to a borrower who agrees to pay four bolts, or 13.33 percent interest, each month until the time of repayment. This rate was higher both than prevailing rate in Turfan, usually 10 percent each month, and the government-stipulated rate of 6 percent per month. The text of the contract appears on the right, the names of the signatories on the lower left. Nothing appears below the first name, that of the moneylender, but the borrower, the guarantor, and the witnesses all draw their fingerjoints below their names to indicate their acceptance of the terms.

### Typical Contract Terms

Only the affidavits and the judge's decision have survived, not the original contract. But we can reconstruct what typical contracts might have looked like on the basis of other contracts excavated from the Astana graveyard. Of the 250 contracts excavated from Turfan, more than 40 are loan agreements.<sup>17</sup> Most loans were for small sums, such as a few pecks of grain, several bolts of silk, or between 2 and 40 silver coins. One agreement dated 661 covers a loan of 30 bolts of silk from a money lender named Zuo Chongxi to a man named Long Huinu. After giving the date, this contract reads

Long Huinu, resident of Anxi canton, receives thirty bolts of bleached silk from Zuo Chongxi, resident of Chonghua canton. The monthly interest will be four bolts of bleached silk. If the interest is not paid monthly, a fine of one bolt of bleached silk will be paid to Zuo each month. If Zuo needs the silk on a given day, then it must be returned to him promptly. If the borrower absconds, then it is up to his wife and children and those whose names follow below to redeem his debt.

Officials have government law, and common people follow private contracts. The two sides agree to make this contract, and they draw their finger joints as a sign of good faith.

- Zuo, the owner of the silk, Zuo [no finger joint marks]
- Long, the person who receives the silk [finger joint marks]
- Guarantor Long Xu [finger joint marks]
- Witness Wei Zuo [finger joint marks]
- Witness Fan Shide [finger joint marks]
- Guarantor Kang Wenxi [finger joint marks]<sup>18</sup>

All parties to the agreement drew their finger joints, except for the lender Zuo. They drew lines next to each joint of their index finger, an act equivalent to signing with an X in the West.

Many Turfan contracts follow the same format and include the same phrases. The identity of the guarantors is unknown, but two of the witnesses, both Sogdian merchants resident in Changan, later testified on Rokhshan's behalf, so the agreement had at least four participants: the borrower, the lender, and two witnesses.

The monthly interest of 13.33 percent, or four bolts on a loan of thirty bolts, stands out as unusually high. In the Silk Road case, we can assume that Yam-yān would have charged Merchant Li a lower rate of interest since Li was borrowing a larger amount of silk, but otherwise the missing contract would have followed this format.

A monthly interest rate on private loans of 6 percent (raised to 7 percent in 742) was stipulated by the Tang statutes, as reconstructed by Niida Noboru.<sup>19</sup> This was less than the prevailing rate in the surviving Turfan contracts, which usually call for 10 percent each month and sometimes more, as we saw in the contract above.<sup>20</sup> The state did not require registration of contracts for loans, but it did require contracts for the sale of livestock and slaves to be registered with market officials. The government's penal code, the *Tang Code*, also contains a few provisions about contracts. One limits the total interest charged to the value of the principal.<sup>21</sup> The terms of the Turfan contracts, except for interest rates, are fully consonant with prevailing Tang legal regulations.

Had the Silk Road case been governed by Iranian law, Merchant Li should have given