

XIII *Arthadāna* and *dānagrahaṇa* in the private realm

Straightforward, unimpeded exchange seems to be the norm in modern economic textbooks. That things may go wrong was obvious to many Old Indian authors and is clearly obvious to anybody who is engaged in complicated business transactions such as having a house built.

A Egoism

In the Indian context, the usual words for reciprocal exchange are *arthadāna* and *dānagrahaṇa*. Remember the two modes of exchange explained in chapter XI: the Edgeworthian person-to-person mode of exchange and the impersonal Walrasian one. The words *dāna* and *grahaṇa* are not, in general, assigned to the participating parties in a straightforward manner. This problem of who “gives” and who “takes” may be expected to crop up and be “solved” differently in various languages. Consider the somewhat unfortunate German term *Arbeitnehmer* (literally a person “taking” work), who is a worker remunerated with a wage. Thus, the *Arbeitnehmer* takes both work (*Arbeit*) and money. In contrast, the employer is the *Arbeitgeber*, who gives both work and money.

In the GET model, Pareto efficiency occurs under certain mathematical conditions upon which we do not elaborate here. Questions of morality do not enter the standard model. This does not mean that the GET model is based on immoral agents, but rather that problems of morality are simply assumed away. In Old Indian law texts, the difference between greed (*lobha*) and striving for profit (*lābha*)⁶⁴⁸ is vital, a difference that GET cannot account for.

Buying/selling of small items would normally occur without any problems. Special attention would only be required for particular items (labour contracts, interest rates, giving a girl into marriage, buying/selling of immovable property), which are the subject-matter of the current and later chapters.

648 See Davis, Jr. (2017).

B Auctions⁶⁴⁹

(1) Auction theory

In microeconomics, several different auctions are analysed.⁶⁵⁰ For the purpose of this book, two are relevant, the ascending and the descending auction. In ascending auctions (also called English auctions), the auctioneer raises the price, starting with some minimum price. The last bidder persisting in his wish to buy gets the object for the current price.⁶⁵¹ In a descending auction (Dutch auction), the auctioneer lowers the price, starting with some maximum price. As soon as one bidder is prepared to pay the price announced, he obtains the object for that price.

Economists analyse auctions in terms of the bidders' "willingness to pay". This technical term stands for the amount of money that makes a bidder indifferent between obtaining the object for that amount and not obtaining the object at all. The main theoretical differences between these two auctions are as follows: Under the English auction, the best any bidder can do is to keep on voicing his interest for the object until his willingness to pay is reached, dropping out at that moment. As a consequence, the successful bidder obtains the object for the second-highest willingness to pay. The Dutch auction is more complicated. If a bidder announces his willingness to buy, he has to pay the current price. He may hope to obtain the object for a lower price if he waits some time. Of course, he then runs the risk of seeing another bidder take the object.

(2) Market tax and increasing auction

In subsection V.H(3), Kauṭilya's market tax is cited. Apparently, a trader who came to some market place would need to inform the customs authorities as to the quantity and the starting price of the commodities he hoped to sell. Olivelle (2013, p. 555) correctly argues that Kauṭilya has an auction in mind and goes on to interpret *mūlyavṛddhi* ("increase in price") as follows: "This must refer to the increase beyond the asking price that was initially announced. Such an increase caused by the bidding process appears to go to the state rather than to the trader." By the term "increase in price", we are justified in inferring an ascending auction.

In order to understand the market tax, I assume that one unit of a good is to be sold. Let us denote the initially-announced price by p_a and the final price by p . Consider this concrete example: The trader may quote a value of $p_a = 5 \text{ paṇas}$. Some bidders are interested in the good at this price and start to outbid one another. Assume a highest

649 This section borrows freely from Wiese (2014).

650 See McAfee & McMillan (1987).

651 Alternatively, the bidders increase the price above the minimum price. If no further bidder can be found to outbid the previous announcement, the last bidder obtains the object for his last bid.

bid, and hence a final price, of $p = 9$ (*paṇas*). Then, the tax inspectors will collect a market tax (*mūlyavṛddhi*) of $9 - 5 = 4$.

Our trader may hope to evade the tax by indicating a higher value. For example, $p_a = 7$ would lead to the smaller tax of $p - p_a = 9 - 7 = 2$. However, if the trader overestimates the bidders' eagerness to obtain the object, he may try $p_a = 12$ and learn that no bidder is prepared to pay that much. Assume that the trader could try different values during the same market day without additional cost. In our example, he would try to lower the announced prices and still would not find a bidder for any p_a above 9. But, finally, at $p_a = 9$, the most eager bidder would be prepared to pay 9. In that case, the trader's market tax is $p - p_a = 9 - 9 = 0$.

The clever Kauṭilya would not have proposed a tax that could be so easily avoided. It is therefore plausible that the trader who has not found a bidder—his declared value having been too high—cannot, without cost, simply try again with a lower value. In practical terms, the unsuccessful trader may have to pay duty once again, or may have to leave the market and incur transportation costs in order to try at another market place. The market tax then presents the trader with an optimisation problem: On one hand, he would like to choose a relatively high value p_a in order to evade the market tax. On the other hand, a high value carries the risk of not selling the good and incurring duty or transportation costs once again. This optimisation problem is solved in Wiese (2014). The trader will announce an initial price such that he often pays a positive market tax.

One can argue that the market tax is not very clever from a Hayekian perspective. According to section XI.C, prices have the function of informing people about the scarcity of goods. Scarce goods tend to become expensive. The high prices tell producers to extend production and consumers to reduce consumption. Now, this mechanism does not work well in the presence of a market tax. While the price is increased for consumers, the producers or sellers do not benefit (sufficiently?) and have no incentive to increase production. Of course, there is some uncertainty about how the starting price for the auctions was determined. See the argument for governmental price-fixing in subsection V.H(3).

C ... but exchange may go wrong

Buying and selling seem to be straightforward activities. A buyer receives an item from a seller for a certain price, or exchanges apples for bananas. In many theoretical models, exchange (see sections XI.B and C) occurs under idealised, often utopian conditions:

- Contracts are complete, i.e., they specify all contingencies. This is not possible in real life.
- From the point of view of social exchange theory, Edgeworthian or Walrasian exchange are but a very small part of social exchange. Social exchange often takes

place over long time intervals, and the question of who owes what to whom is not always clear to the participants. Social exchange relations exist in markets, between neighbours, colleagues, etc. and also include Senecan fellowship and the united alliance found in Kāmandaki's Nīṭisāra.

- Economic exchange models normally depict a utopian state of affairs in many respects: no theft, no quality problems, no cancellation (rescission) of buying/selling contracts, etc.

The Indian jurists had a particular, but effective manner of dealing theoretically with norm conflicts, as can be seen in <25> on p. 34. They were also aware of what might go wrong in exchanges (section VII.C). The utopian approach of GET disregards all of these practical problems. Of course, economic theory has progressed, and economists are now able to model situations of asymmetric information (consider the quality problems just mentioned), reciprocity, reputation, and the like with the help of game theory.

D Differing interest rates

In quotation <145>, specific interest rates are prescribed. They are puzzling on three counts. Firstly, fixed interest rates are astonishing from the perspective of GET. After all, there cannot be any guarantee that these specific interest rates bring demand and supply of loans into equilibrium. If not, some agents (debtors) may not be able to obtain a loan or others (creditors) may not be able to supply a loan at the prescribed rate. It is doubtful whether disequilibrium interest rates would be observed for a long time.

Secondly, the interest rates proposed in *dharma* texts seem high. If a borrower takes out a loan of L for a monthly interest rate of r_m , he has to pay back $L + r_m \cdot L = (1 + r_m)L$ at the end of the month. If he then keeps on borrowing for a full year, he pays back $(1 + r_m)^{12}L$. Thus, a monthly interest rate of r_m amounts to a yearly interest rate $r_y = (1 + r_m)^{12} - 1$. The monthly interest rates of 1.25, 2, 3, 4, 5, 10, and 20 percent (see <145>) correspond to yearly ones of about 16, 27, 43, 60, 80, 214, and 792 percent, respectively. Apparently, loans were typically meant to overcome only short-term liquidity problems. Manu seems to rule out interest payments (from compounding, where interest on interest is paid) of more than 100 percent.⁶⁵²

A third puzzle concerns the fact that interest rates differ between the four social classes. In particular, Brahmins have to pay lower interest rates than members of the other social classes. Of course, one might simply interpret this provision as evidence of "how well the Brahmins took care of their own interests."⁶⁵³ Note, however, that these differences concern only unsecured loans. Therefore, the difference may stem from the expectation on the loan-givers' part that Brahmins may be more likely to

⁶⁵² See MDh 8.151 and Olivelle (2005, p. 313).

⁶⁵³ Garbe (1897, p. 65)

repay a loan than the other social classes. Indeed, the very high monthly interest rates payable by people (of any class!) who travel through forests (10%) or by sea (20%) seem to indicate an interest differentiation according to the riskiness of the loan.

One may try to estimate the riskiness of forest and sea travel. If a secured loan is not risky at all (i.e., repayment is certain), the repayment from a secured one-month loan is $L + 0.0125 \cdot L$ according to Manu. The expected repayment from a loan given to a forest traveller is $\pi(L + 0.1 \cdot L)$, where π denotes the probability of repayment. If the first term were larger than the second one, loan-givers would prefer to hand out secured loans rather than giving a loan to forest travellers. This would make obtaining loans for forest travel difficult and one might expect that interest rates for forest travel would go up. Let us proceed by the equilibrium condition that both loans are equally attractive to loan-givers, i.e., the two terms would need to be equal. One then obtains $\pi = \frac{1.0125}{1.1} \approx 0.92$ for forest travel. Similarly, the probability for repayment from sea travel might be estimated at $\frac{1.0125}{1.2} \approx 0.84$. Or, inversely, forest and sea travellers may expect to lose their property (for example by robbery or ship disaster) with a probability of 0.08 or 0.16, respectively.

Returning to the four social classes, we denote the probability that Brahmins, *kṣatriyas*, *vaiśyas* and *śūdras* repay an unsecured loan by π_B , π_K , π_V , and π_S , respectively. Assume that loans given to members of the four classes are equally attractive.⁶⁵⁴ Roughly, the repayment probabilities are then related by

$$[5] \quad \pi_B \approx 1.01 \cdot \pi_K \approx 1.02 \cdot \pi_V \approx 1.03 \cdot \pi_S$$

One may conjecture that Brahmins are especially eager to repay a loan. After all, as receivers of *dāna*, they need to be considered extremely virtuous in many respects (see <102>). However, although the monthly interest rates differ by a lot, the underlying probabilities do not. After all, all economic agents need to be careful so as to protect their reputation.

654 Similarly to repayment in the cases of forest or sea travel, let the equilibrium condition be $\pi_B \cdot L \cdot 1.02 = \pi_K \cdot L \cdot 1.03 = \pi_V \cdot L \cdot 1.04 = \pi_S \cdot L \cdot 1.05$.