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Abstract

This paper examines auctions in the *Kautiliya Arthashastra*, the oldest Indian treatise on law, economic activities, and statecraft. It suggests that auctions of land and goods described in the treatise differ from modern auctions insofar as they were designed around the ideal of just prices that were supposed to balance the interests of sellers and consumers. It also highlights the differences between auctions of land and goods in terms of the degree of competition allowed by the design of auction. It argues that Kautilyan auctions of goods are Pareto-efficient but do not maximize the seller's profit, whereas auctions of land are neither Pareto-efficient nor maximize the seller's profit. The latter auctions, though, ensure community participation to mitigate information asymmetries. The paper also uses the comparative analysis of the two types of auctions to offer a fresh exegesis of the text.

Keywords: Ancient India, Auction, Arthashastra, Competition, Exegesis, Just Price, Just Profit, Regulation, Trade

JEL Classification Codes: B11, D44, K2, L5

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Introduction

Auctions are used to sell things as diverse as flowers, tea, mining rights, paintings, and spectrum for telecommunication (Klemperer 1999). In India, auditors, courts and other enforcement agencies seem to have taken a fancy to auctions. Starting with the allocation of the 2G spectrum, at one point, it appeared that the Supreme Court of India was almost conferring a constitutional status to auctions as the primary mechanism for price discovery. The debate around the choice of an appropriate price discovery mechanism leaves the question of the government's objective unclear. Successive governments seem to lean on auctions of natural resources to raise maximum revenue and bridge their budget deficits. The discussions on auctions in pre-modern India offers a different perspective about desirable objectives. While price discovery and resource allocation were also the key concerns in pre-modern auctions, their understanding of competition differs radically from our conceptions of the same. We will argue that pre-modern statecraft viewed auctions as means to balance the interests of sellers and consumers rather than promote efficiency.

Shubik (1999: 213-218) traces the history of auctions back to ancient Babylonia, where prospective brides were auctioned, and follows it through the Roman history to the twentieth Century (see also Doyle and Baska 2002 and Baye et al 2012). According to Shubik (1999: 217), 'the earliest known reference [to auctions] in the Far East is to the sale of belongings of deceased monks in the seventh century A.D.' But these and other related auctions of property of deceased or bankrupt persons were not part of usual market exchanges. So, Shubik (1999: 214) suggests that "[a]uctions found little favor in the Orient, where bargaining¹ has been traditional, little importance being attached to the time taken to make a sale. Consequently, the rise of the auction appears to have followed the economic development in the West."

This paper draws attention to an elaborate discussion of auctions in a pre-modern non-western society. It adds to our understanding of pre-modern auctions by examining procedures and laws governing auctions discussed in the *Kautiliya Arthashastra* (completed latest by the 3rd Century CE), the oldest extant Indian treatise on law, economic activities, and statecraft. The paper relates to two streams of literature. It adds to the literature on competition in the pre-modern world. Liebermann (1985) discusses competition in consumption from the Jewish perspective. Raskovich (1996) examines the rise of monopolies in the market for religion in the ancient Middle East. de Roover (1951) throws light on market regulations in pre-modern Europe. Kumar (2012) examines market regulations from the perspective of ancient Indian treatises. It also contributes to the economic literature on pre-modern Indian traditions of knowledge (Sihag 2009; Kumar 2010, 2011, 2012).

The discussion in the paper is organized as follows. Section 2 introduces the *Kautiliya Arthashastra* and locates it within the larger body of ancient Indian traditions of knowledge. We will rely on Kangle (2006 [1969]) for the original text of the *Kautiliya Arthashastra* and

¹ It is not clear if Shubik uses bargaining to refer to *haggling* about price or to exchanges in which the parties are locked into a relationship mediated by the context and exit is not an option.

Kangle (2003 [1972]) for translations. Other translations include Shamasastri (1988 [1915]), Rangarajan (1992), and Olivelle (2013). Further, *sutras* – aphoristic sentences – from the *Kautiliya Arthasastra* will be referred to as, say, II.4.6 (Book II, Chapter 4, Sentence 6). Section 3 throws light on markets from the perspective of the *Kautiliya Arthasastra* and compares auctions of goods and land. This section highlights the differences between the two types of auctions in terms of the degree of competition allowed and then presents a fresh exegesis of the text. The last section offers concluding remarks.

Background

Ancient Indian thinkers proposed three complementary goals for human life—*dharma* (spiritual), *artha* (material), and *kama* (sensual). The school of thought that eventually dominated maintained that in the event of a conflict between the goals, *dharma* prevailed over *artha* that in turn prevailed over *kama* (Rocher 1985; Kangle 2003 [1972]; Doniger and Kakar 2003). According to exceptions to this rule, *artha* was the foremost goal for kings (*Kautiliya Arthasastra*, I.7.6–7, VIII.1.47–49, IX.7.60–63, 81) and courtesans (*Kamasutra* I.2.15). Expert traditions of knowledge (*sastras*) emerged around each of these goals. Economic activities were discussed as part of law and statecraft in the *Arthasastra* and *Dharmasastra* traditions.² Between the two, the former is chronologically prior and provides a more elaborate discussion on economic activities and statecraft and informs the treatises in the latter tradition. We will rely on the *Arthasastra* tradition to understand auctions in ancient India. We will use the *Kautiliya Arthasastra* (Kautilya’s *Arthasastra*; hereafter, the *Arthasastra*) as an exemplar of the *Arthasastra* tradition.³ There are two reasons for this. First, none of the pre-*Kautiliya Arthasastra* treatises has survived. Second, post-Kautiliya treatises like the *Kamandakiya Nitisara* have very little to say about legal and economic issues because they are focused on war and diplomacy. Even here, they deviate a lot from the *Kautiliya Arthasastra* under the influence of the *Dharmasastra* tradition.

The *Arthasastra* is a treatise on statecraft, law, and economic activities primarily meant for practitioners.⁴ The treatise consists of 150 chapters unevenly distributed across 15 books. Book I deals with issues directly managed by kings like the appointment of ministers, envoys, etc. Books II through IV deal with internal administration, legal system and economic affairs. The discussion on foreign policy and war and the impact of natural

² There is perhaps no pre-modern Indian text that discusses economic activities outside the perimeter of law and statecraft.

³ Soon after it was first translated into English by Shamasastri (1988 [1915]), the *Arthasastra* won instant recognition as “perhaps the most precious work in the whole of Sanskrit literature” (Thomas 1922: 467) because it possibly “throws more light on the cultural environment and actual life in ancient India than any other work of Indian literature” (Maurice Winternitz quoted in Trautmann 1971: 3; see also McClish 2019, Olivelle 2013: 39). The *Arthasastra*’s discovery transformed the ancient Indian from an otherworldly being into a calculative this-worldly being (Gowen 1929: 174, 178; Weber 1946: 123–124; Trautmann 1971: 2). Kautilya is often equated with Machiavelli. But Kumar (2010: 292–293) argues that popular imagination in India nurtures a more complex image of Kautilya.

⁴ The text differentiates between “scholars and practitioners” (I.5.8).

calamities on policymaking occupies Books VI–XIII.⁵ Books V, XIV and XV cover miscellaneous issues.

Arthashastra is widely, but inappropriately, equated to ‘Economics’ in most modern Indian languages. The ancients used *vartha* to refer to both key economic activities like agriculture, cattle-rearing and trade, and the related domain of knowledge (Kangle 2006 [1965]: 166–167). *Vartta* is “the closest Sanskrit term we have for the word ‘economics’” that refers to “the pursuit of livelihood (*vritti*)” (Trautmann 2012: 3; Kangle 2003 [1972]: 9). The *Arthashastra* defines wealth (*artha*) “as the human production of livelihood, then, as the earth inhabited by human beings engaged in such production and finally, as the acquisition and protection of the inhabited, productive earth – by a king” (Trautmann 2012).⁶ The purpose of the *Arthashastra* is defined as the acquisition, presentation and augmentation of *artha* and its use by the king (I.4.3–4, also I.5.1–2, I.15.52, XV.1.1-2). Olivelle (2013: 63) translates *Arthashastra* as *Treatise on Success*, but this generalizes the scope of the treatise too much. Likewise, translating it as *Science of Politics* is inappropriate because it also deals with law, economic activities, and administration rather than just political manoeuvring within and beyond the kingdom. *Treatise on Political Economy* is a more appropriate translation (cf. Trautmann 2012: 8; Doniger and Kakar 2003: XIII, 205) even though the use of ‘political economy’ sounds anachronistic in a pre-modern context.

The consensus about the authorship of the *Arthashastra* suggests three things. First, while the unity of authorship was never convincingly demonstrated, recent scholarship has assembled sufficient intra-textual evidence against the claim that the treatise was written in one period, let alone by an individual (McClish 2019, Olivelle 2013, Scharfe 1993, Trautmann 1971). The scholarly consensus suggests that the text can be divided into two broad parts: the *Kautilya Recension*, the original prose text, and the *Sastric Redaction*, the verse and prose interpolations influenced by the *dharma* tradition (McClish 2019, Olivelle 2013: 9-10). Our discussion is restricted to Book II (for auctions of goods) and Book III (for auctions of land) that seem to belong to the same early stratum of the treatise, namely, the *Kautilya Recension*.

Second, Olivelle (2013: 31) suggests that it was commonplace in ancient India to ascribe authorship to revered figures of the past to confer prestige and authority. We can add that retrospective ascription to a revered figure, say, a god or sage, also ensured survival and dissemination of one’s work in an age of scarce means of transmitting knowledge. Olivelle argues that given the obscurity of the name Kāuṭilya in ancient literature, one could have easily found a better candidate. So, it is prudent to accept the traditional ascription of the authorship of the treatise to Kautilya, at least in the case of the oldest stratum.

Third, the extant text was composed over several centuries and completed by the 3rd Century CE. The extended timeline of composition has two implications. One, phrases like *Kautilyan economy* and *Kautilyan market* refer to hypothetical entities described in the treatise

⁵ For a review of the rich literature on the *Kautilya Arthashastra* see Olivelle (2013) and McClish (2019).

⁶ *Artha* is polyvalent: goal, meaning, money, purpose, pursuit, reason, wealth, legal case, profit, self-interest, power, a goal of life, and the name of a god (Kangle 2006 [1969], 2003 [1972]; Doniger and Smith 1991: 303-4; Doniger and Kakar 2003: XIII, 1, 219; Trautmann 2012: 2-3).

often devoid of any direct historical correlates because it is difficult to date *sastras* and relate them to a specific territory. *Sastras* deliberately eschewed references to the place and time of writing. Two, we will discuss markets as described in the treatise without committing to any position regarding the relationship between the treatise and its “contemporary” economy.

Auctions

One of the most important features of a Kautilyan economy was the participation of the king/state in almost all branches of the economy, either alone or in partnership with others. So, Kautilyan states were simultaneously market agents, market regulators, and, at times, even market makers.⁷ A few other essential features of Kautilyan markets include the stipulation of transparency in deals, commitment to just prices and confiscation of profit made by deviation from just prices, scarcity of capital, and a very high degree of risk and uncertainty (Trautmann 2012). Given its role as a producer of a wide range of goods, the state presumably had first-hand information regarding costs, and even otherwise, it could rely on undercover agents to collect relevant information.

The Kautilyan state seems to have been concerned with market manipulations for three reasons (see Kumar 2012: 65). One, it was ultimately responsible to “maintain” among others “persons in distress when these are helpless” (II.1.26) and grant tax exemptions to those in distress (II.24.17, also II.1.36). Two, a population impoverished by unscrupulous agents could be easily instigated by rebel princes/vassals or even foreign powers (VII.4.7, VII.5.16-18). Three, manipulation of markets could be used to foment trouble and raise resources to challenge the state. In short, markets were too important to be left to the discretion of traders. Further, inter-state traders could serve as spies to foreign kings (I.12.22), and even otherwise, trade was a factor to be accounted for in foreign policy (VII.4.7). Using simple games, Kumar (2010: Example 2) discusses various situations in which heeding popular opinion and showing concern for the welfare of subjects is in the self-interest of the *Arthashastra*'s king. Furthermore, princes were trained since childhood that as a king, they ought to uphold *dharmā*, i.e., justice in the broad sense rather than merely following law codes. Trautmann (2012), for instance, argues that in ancient India, the idea of kingship did not entail unbridled exploitation of subjects (see also Kangle 2006 [1965]).

The *Arthashastra* contains information on two kinds of auctions that roughly correspond to open ascending-bid auctions (also known as English auctions), each for “markets”⁸ for land and goods. Kautilyan auctions did not apply to natural resources like minerals over which the king enjoyed a monopoly. There is no reference in the treatise to descending-bid auctions (also known as Dutch auctions). Further, sealed-bid auctions are repugnant to *Arthashastra*'s legal framework that valued transparency in market transactions (III.1.2-4) and

⁷ See Kangle (2006 [1965]), Trautmann (2012) and Olivelle (2013) for consequences of the embeddedness of the state in markets.

⁸ The scare quotes are necessary since these markets do not necessarily conform to our contemporary understanding. See, for instance, Rosenbaum's (2000) criteria for identifying markets.

allowed very few exceptions (III.1.6-12). This section first discusses auctions of goods and land separately and then compares the two.

Auctions of Goods

Auctions of goods under the watch of the Superintendent of Customs (*Sulkeadhyaksa*) are described in Book II (On the Activities of Superintendents, *Adhyaksapracarah*).

Traders shall declare⁹ the quantity and price of the goods that have arrived at the foot of the flag¹⁰, ‘Who is willing to purchase these goods, so much in quantity, at this price?’ When it has been thrice proclaimed, he should give it to those who have sought it. In case of competition among purchasers, the increase in price together with the duty shall go to the treasury. (II.21.7-9) . . . Or, if through fear of a rival purchaser a (trader) increases the price beyond the (due) price¹¹ of a commodity, the king shall receive the increase in price, or make the amount of duty double [“when the *mulyavrddhi* (increase in price) amounted to less than the *sulka* (duty)” – Kangle 2003 [1972]: 142-143]. The same (penalty) eightfold (shall be imposed) on the Superintendent concealing (the trader’s offences). (II.21.13-14)

Olivelle (2013: 555, also 39) identifies the transaction described in the above *sutras* (particularly, II.21.8) as an auction: “Clearly we are dealing with an auction here rather than a normal sale. Such auctions may have been carried out for imported goods, as well as goods sold wholesale to retail traders.” But since the treatise abounds in references to the sale of goods, the circumstances under which auctions of goods were conducted would bear elaboration. The markets for goods were divided between retail and bulk trade sectors. Trautmann (2012: 126) observes the following regarding the relationship between the two.

[I]t was often the practice to separate long-distance trade from local trade, each being conducted by different bodies of traders . . . Long-distance traders brought goods in bulk to the [city] gate, where they were bought by local traders to sell at retail inside the city. Long-distance traders were not allowed to sell at retail. The city gate is the location where wholesalers and retailers meet and transact business. It is also the place where the king imposes taxes in the form of customs duties.

⁹ In ancient Indian law, shouting/calling out played an important role in a variety of contexts in addition to auctions. For instance, shouting to attract potential rescuers played an important role in ancient Indian law regarding distress contracts (*Kautiliya Arthasastra* III.13.35, see also Asahaya’s commentary on *Naradasmṛiti*, Jolly 1889: 130, Lariviere 2003: 342). Also, shouting to alert others relaxed liabilities of a driver/rider of a cart/animal that has gone out of control (*Kautiliya Arthasastra* IV.13.14, also *Manava Dharmasastra* VIII.291-292 (Olivelle 2006) and *Yajñavalkya Dharmasastra* II.301 (Olivelle 2019: 211). *Manava Dharmasastra* (VIII.233) suggests that a herdsman is not guilty if an animal is stolen “despite his shouts”. *Kautiliya Arthasastra* (IV.13.14) suggests that one cutting a tree is not guilty of hurting others if he shouts, “get out of the way.” See also Brihaspati (XVI.20) (Jolly 1889: 346) and *Naradasmṛiti* (VI.14, 18) (Lariviere 2003: 355-356).

¹⁰ Apparently, “the emblem of the king” (Kangle 2003 [1972]: 141) established near the customs house “in the vicinity of the big gates” (II.21.1).

¹¹ See Footnote 18 regarding the translation of “(due) price.”

So, auctions of goods were conducted at the junction of bulk/long distance and retail/local trade networks. This separation allowed the state to control prices by regulating supply. Another point of interest with regard to auctions of goods relates to Shubik's (1999: 213-214) claim that auctions require "an adequate concentration of population to provide sufficient numbers of buyers and sellers, on the one hand, and a coinage so that the values of bids are immediately recognizable on the other." Both these conditions are satisfied in the case of Kautilyan auctions of goods. The *Arthashastra* assumed extensive circulation of coins so much that it allowed monetization of talionic punishments (IV.10 is devoted to this). Regarding the locus of auctions, the treatise mentions that such auctions happened near cities, which must have had a greater population density than the countryside.

Auctions of Immoveable Property

Auction of immovable property like dwellings, agricultural land and water tanks is described in the following *sutras* of Book III (*Dharmasthiyam*, On Justices) under the topic *Sale of Immoveable Property*:

Kinsmen, neighbours and creditors, in this order, shall have the right to purchase landed property (on sale). After that, others who are outsiders (may bid for purchase). (Owners) shall proclaim a dwelling (as for sale) in front of the house, in the presence of members of forty neighbouring families, and a field, a park, an embankment, a tank or a reservoir (as for sale) at the boundaries, in the presence of village elders who are neighbours, according to the extent of the boundary, saying 'at this price who is willing to purchase?' What has been thrice proclaimed and not objected to ["by any one claiming the right of pre-emption, etc." – Kangle 2003 [1972]: 219], the purchaser shall be entitled to purchase. Or, in case of competition, the increase in price together with the tax shall go to the treasury. The (successful) bidder at the sale shall pay the tax. In case of a bid by one who is not an owner, the fine shall be twenty-four *panas*. If the (bidder) does not come (to take possession), the owner whose property was auctioned may sell (again) after seven days. (III.9.1-8, see also Kangle 2006 [1969]: 109)

Olivelle (2013: 197) translates "according . . . purchase?" in the above as "In conformity with its boundary lines, who will buy at this price?" This translation seems to be correct, particularly because proclamations in the case of auctions of goods (II.21.7-9, see Section 3.1 above) include both quantity and price (Olivelle 2013: 601-602). Olivelle's translation has implications for our understanding of the role of proclamation in auctions. In auctions of land, proclamation is not merely an announcement of price but also of undisputed legal ownership that, of course, was open to disputation by the witnesses (see also Footnote 13).

Three other features of these auctions need to be noted here: the order in which potential bidders can join the process, the role of neighbours as witnesses and the determination and payment of the price. Regarding the first, Trautmann (2012: 123) notes that the priority "given to a kinsman, neighbor and creditor over the stranger . . . recognizes the strong connection of farmland with the family among farmers in ancient India, since the kinsman

as the buyer is privileged over all other buyers.” Other general restrictions on land transactions stated later in III.9 would have also applied to the set of bidders: (a) taxpayers can sell or mortgage only to taxpayers, (b) Brahmins (members of the priestly caste) can sell gift-land only to Brahmins, and (c) taxpayers cannot buy land in tax-free villages (III.10.9-12). Trautmann (2012: 123) notes that rank ordering of bidders and these additional restrictions on who can bid removes land transactions “from the free-market model”.

Regarding the role of neighbours in land transactions, it is noteworthy that “disputes concerning immovable property (are to be decided) on the testimony of neighbours [*read* heads of households]” (III.8.1, also III.9.15, 24). The sale of land through auction in the presence of locals, and invalidation of auctions in the absence of forty witnesses, seems to be a mechanism of discovering and enforcing just prices in land markets.

[T]he *Arthashastra* insists that the transaction be transparent, being conducted in the presence of knowledgeable witnesses,¹² that is neighbours – as many as forty of them – and that the price be announced, not once but three times, ‘without objection’. What objection? Most assuredly, an objection from a witness would be about the commonly accepted value, and therefore the proper price, of land. (Trautmann 2012: 123-124)

The presence of knowledgeable witnesses such as village elders in addition to kinsmen and neighbours, who would be directly affected by any potential wrongdoing in the sale, would have assured the buyer of not only the fairness of the price, but also of the accuracy of the size and boundaries of the land and brought to light disputes, if any, over the ownership. Further, note that Shama Sastry (1988 [1915]: 193) translates “Kinsmen... families” as:

Kinsmen, neighbours, *rich persons*, shall in succession go for the purchase of land and other holdings. Neighbour of *goods* [sic] *family*, forty in number and *different from the purchasers above mentioned*, shall congregate in front of the building for sale and announce it as such. (emphasis added)

Here Shama Sastry disagrees with Olivelle (2013) and Kangle (2003 [1972]) (as well as Trautmann 2012: 123-124). The two key differences are the stipulation that the witnesses should belong to “good” families, and the sets of witnesses and bidders ought to be mutually exclusive. While the Kautilyan legal system treats persons from “good” families differently from others (III.1.5, III.11.26, III.12.29), this is not mentioned in the sutras on auction of land. It also seems that the set of witnesses and bidders may have been coterminous contrary to Shama Sastry’s interpretation. There are two reasons for this. First, the size of villages ideally varied between 100 and 500 families (II.1.2). So, in small villages, the requirement of 40 witnesses (heads of households) covers almost half the village! In cities, the smallest sub-division had up to 40 households (II.36.2). Second, in pre-modern Indian villages, closely related people united by kinship ties (obviously, belonging to the

¹² Trautmann introduces another condition, namely, witnesses should be *knowledgeable*. This is not mentioned in the treatise, even though it may be implied.

same caste) settled together so that neighbours and kinsmen must have been largely coterminous.

The significance of the requirement of forty neighbours as witnesses,¹³ the proclamation of price thrice¹⁴, and re-auction after seven¹⁵ days is not explicitly stated anywhere in the treatise. The lawgiver seems to have meant “many witnesses” or “sufficiently many witnesses” rather than a specific number of witnesses.¹⁶ These numbers would have been chosen for their sacerdotal or customary significance related to their mathematical properties and/or astronomical importance.

Comparison

Three features are common to both kinds of Kautilyan auctions: an aversion to deals made in secrecy, a commitment to just prices, and an aversion to uncontrolled competition. Auctions of goods penalise traders who increase their bids beyond a point in response to bids of other competitors. In principle bidders were free to raise their bids as long as they

¹³ The number *forty* is also important in other contexts in the *Arthashastra*, e.g., “for one doing harm to members from *forty* neighbouring families, the fine shall be 48 *panas*” (III.20.15, emphasis added). Cities were divided into “unit[s] of ten households, 20 households, or 40 households” (II.36.2, emphasis added). State officials could cheat people in *forty* different ways (II.8.20-21). The number *forty* also finds mention in the context of measurement. A *nalika*, which was a measure of time, consisted of 40 *kalas* (II.20.34). The denominations of manufactured weights included 40 *suvarnas* (II.19.8). Also, the “work month for the elephant corps [of the army]” (Rangaraja 1992: 729) or “months for calculating wages of attendants of horses and elephants” (Kangle 2003 [1972]: 141) was equal to 40 days and nights (II.21.53). Even otherwise the number *forty* must have been important insofar as *four*, *five*, and *eight* were units of counting in a variety of contexts (for a compilation of a few usages see Rangarajan 1992: Appendix 1; Olivelle 2013: Appendix 2). In medieval India, a particular genre of poetry was known as *chalisā*, i.e., a collection of forty verses on a specific (mostly devotional) theme (e.g., *Hanuman Chalisā*, *Durgā Chalisā*, etc). The number *forty* was also important across the world in ancient and medieval times. In the Biblical story of Noah it rained for forty days and nights (Genesis 7:4). Joseph mourned his father’s death for forty days (Genesis 50:1), Moses spent forty days on Mount Sinai (Exod 24:18), and Jesus fasted for forty days and nights (Matt 4:2; Mark 1:13; Luke 4:2). More generally, the number forty is closely associated with life cycle ceremonies across cultures. The widespread importance of the number could possibly be linked to its mathematical properties or astronomical facts of interest to ancient civilizations related to, say, the movement of the planet Venus, which was monitored in ancient India to determine the sowing season (II.24.7-8).

¹⁴ The requirement of price announcement thrice is reminiscent of modern English auctions. The number *three* is also used elsewhere in the *Arthashastra* where decision under uncertainty is involved, e.g., “when there is agreement in the reports of three (spies), credence (should be given)” (I.12.15), “In case of non-admission [of the claim], however, witnesses shall decide, those who are trustworthy, honest or approved, three at least in number” (III.11.26), and the period of retraction of sale for agricultural produce is “three days” (III.15.5) whereas for “quadrupeds” is “three fortnights... [f]or, it is by that time that purity or otherwise *can be known*” (III.15.17-18, emphasis added).

¹⁵ The number *seven* is also important in other contexts in the *Arthashastra*, e.g., sale of “means of livelihood” could be retracted within “seven days” (III.15.6).

¹⁶ As in the *sutra* that says that state officials can cheat people in *forty* different ways (II.8.20-21). For a discussion on the use of numbers in ancient Sanskrit literature see Doniger and Kakar (2003: xxi-xxv).

paid the requisite fines. But the fact that bidding beyond a point attracted penalty would have dissuaded traders. Moreover, the fines were hefty and would have escalated the costs immensely. The auctions of land additionally ensured that land transactions did not hurt the kin, the neighbours and, more generally, the village. These features agree with Shubik's (1999: 217) observation that pre-modern auctions in the East prioritized justice over profit.

Both the auctions of land and goods resemble modern open ascending-bid auctions with a reservation price. While the treatise does not explicitly mention reservation price in the context of auctions, it can be inferred from the commitment to just prices that were decided so as not to hurt any of the stakeholders, including sellers and the stipulation that in the event of a glut in the market the state ought to step in to stabilize prices (II.16.2–3, 7, IV.2.33–34) and that traders unable to profit from selling valuable goods deserved a sympathetic treatment in the form of tax exemptions (II.16.11–12) (see also Kumar 2012: 63–67). But there is a crucial difference between Kautilyan and modern auctions. In Kautilyan auctions, bids could also not exceed the upper bound of just price because the excess profit, if any, made by a seller accrued to the state. We can show that bidders will go above the just price only if the highest bidder's valuation of the good is sufficiently more than that of the second highest bidder's valuation as well as the just price. The idea of just price is most clearly captured in the following passage from Book IV (Eradication of Thorns, *Kantaksodhanam*):

[Superintendent of Commodities, *Panyadhyaksha*] should fix for them, moreover, a profit above the *authorized purchase price* of 5 percent in the case of local commodities, and 10 percent in the case of foreign commodities. For those who increase the price beyond that or, in buying or selling, realize a profit beyond that, the fine is 200 Paṇas for every five Paṇas of additional profit per 100 Paṇas. That also explains the proportional increase in the fine corresponding to the increase in the price. (IV.2.27–30, Olivelle 2013: 228, emphasis added)

This passage essentially “links profit with the cost of bringing things to the market, by making it proportionate to the distance, virtually a charge for transportation” (Trautmann 2012: 129).¹⁷ Olivelle (2013: 555) argues that because of the state's claim on excess profit, “it may be in the interest of a trader to set an artificially high price, from which it could only come down as a result of bidding”. Olivelle's suggestion is problematic because the treatise prescribes penalties at the rate of “two hundred panas for (an additional profit of) five panas in one hundred panas” (IV.2.28–30). In other words, manipulation of prices by individuals (or, for that matter, by groups) was risky. Note here that in case bidding raises prices beyond the limits set by the superintendent, the good would go to the buyer with the highest willingness to pay, which is efficient and necessary for an optimal allocation, even though the seller will not benefit as the state captures the excess profit.

¹⁷ While the restriction on the rate of profit may be interpreted as the state's hostility to traders, the state also protected the interests of traders. See Trautmann (2012) for a discussion on the variety of ways in which the Kautilyan state intervened in favour of traders.

Just prices¹⁸ were iteratively fixed after taking into account production (supply), investment, transportation cost, duties, interest, rent, risk, and demand (II.16.1–7, IV.2.36) and the interests of various stakeholders – sellers, buyers, and state (*qua* recipient of taxes and trader of goods). But determining the just price was only half the job. The state had to announce and enforce these prices.¹⁹ It tried to achieve this by promoting beneficial imports, imposing import and export controls, and criminalizing trade at non-designated locations.²⁰ The *Arthashastra* assumes that severe fines would check deviation from just prices. By criminalizing trade at non-designated locations, Kautilya tries to ensure transparency in transactions through publicity, which also helps to ensure that the parties to a transaction do not evade taxes due to the state. Contracts that were not made in an appropriate public space were deemed invalid and attracted a fine in the range of 48 - 96 *Panas*²¹ (III.1.2-5), which is comparable to the annual salary of the lowest attendants employed by the king (V.3). Note that the criminalization of trade at non-designated locations would have fuelled competition by bringing many buyers and many sellers at the same location, but bidders who exceeded the just price attracted penalties. So, one could argue that the treatise supports competition insofar as it helps sellers realise just price but is opposed to uncontrolled competition that would push prices beyond that as it would hurt consumers. This is evident from II.16.2–3, 7 (“He should collect in one place a commodity that is plentiful and then raise its price”) and IV.2.33–34 (“If there is an oversupply of commodities, the Superintendent of Commodities should have all the commodities sold in one location”). While he raised the price, the superintendent was clearly advised to sell “commodities ... as a favor to his subjects; and he should forgo even a large profit if it will cause hardship to his subjects” (II.16.5-6).

Yet another similarity between the auctions of land and goods relates to the structure of proclamation, which covered three things: the identity of good/piece of land offered, quantity/extent being offered, and the price at which the good/land is offered. In both cases, the price was linked to the quantity on offer. This indirectly suggests that the unit price was perhaps related to the total amount purchased, at least in case of goods.

¹⁸ There is no phrase in the *Arthashastra* that translates exactly as *just price* (Kumar 2012). A wide range of closely associated expressions are used in the literature: “normal price” or “authorized purchase price” (Olivelle 2013: 148, 228), “proper, right, or natural” price (J.J. Meyer quoted in Olivelle 2013: 547), “(due) price” (Kangle 2003 [1972]: 142-143), and “proper value” (Shamasastri 1988 [1915]: 122). At times even the same author uses different expressions to capture the intent of the treatise. For instance, Trautmann (2012) uses various expressions to describe the idea of fairness in transactions involving goods or land: fair (99, 129, 130, 140), true (99, 124, 125, 127), just (112, 124), proper (116, 124, 127), reasonable (129), stable (129), steady (130), customary (112, 124, 127), and commonly accepted (124).

¹⁹ Other texts like Manu (VIII.402) suggest that “every five days or every fortnight the king should publicly fix the prices of commodities” (Olivelle 2006: 188), while Brihaspati (XIII.7) suggests that transactions happened “before an assembly of merchants, the king's officers being aware of it (also)” (Jolly 1889: 335).

²⁰ II.16.4, II.16.11-13, 19, II.21.7-13, II.21.22-23, 31, II.22.8-14, III.9.5

²¹ *Pana* refers to the basic unit of currency – a silver coin, whereas the smallest unit was 1/2 *Kakani* = 1/128 *Pana* (II.12.24, Kangle 2006 [1965]: 181; Olivelle 2013: 458-459). The lowest annual salary of employees of the Kautilyan state was 60 *panas* and the highest standard legal fine was 1,000 *panas*. Among goods generally sold in market those priced 2 *panas* were classified as high value goods.

Differences between the two kinds of auctions are also noteworthy. First, in auctions of land, there is one seller and many buyers. The buyers enjoy unequal priority in the order they can bid. However, unlike auctions of land where bidders were ranked on extra-economic grounds, auctions of goods are characterized by free entry insofar as it was open to many buyers and many sellers irrespective of their identity.

Second, bidding through proxies was not allowed in case of auctions of land and was a punishable offence with a fine of 24 *Panas*. There was no such restriction in the case of goods, though. This implies traders could potentially buy goods from multiple auctions through their proxies.

Third, unlike markets for land, where the community publicly helped identify the price at which the transaction took place, price discovery in the markets for goods was left to the Superintendent of Trade/Customs.

Fourth, unlike auctions of goods, auctions of immovable property violate Shubik's location condition (large population centres with large numbers of buyers and sellers, i.e., thick markets) insofar as they are most likely rural affairs in Kautilya's scheme. But following Olivelle (2013: 601) and II.36.2, one could argue that III.9.1-8 might have governed immovable property transactions in cities as well.

Fifth, unlike auctions of goods where just profit is sanctioned, the treatise is silent regarding profit in land transactions and leaves the matter to the discretion of the local community. In the case of land, it merely suggests that overbidding due to competition attracted fines.

Sixth, auctions of land had an in-built retraction clause if the buyer failed to take possession of the property within a stipulated period. This, in turn, suggests that deferred payment must have been permissible in auctions of land. While retraction is not explicitly discussed in the case of auctions of goods, the general rules on "Cancellation of Sale or Purchase" (III.15) may have been applicable in this context as well.

We can now summarize the key points of the above comparative discussion with the help of the following claim.

Claim 1: Kautilyan auctions of goods are Pareto-efficient but do not maximize sellers' profit, whereas Kautilyan auctions of land are neither Pareto-efficient nor do they maximize the profit of sellers.

The first claim holds good as profits were circumscribed by just prices. Auctions facilitated competition that helped sellers realise a just price that balanced the interests of both sellers and consumers and penalised bidding beyond just price. The auctions for goods allowed free entry and allocated the good to the highest bidder. However, in the case of land

auctions, entry was restricted, and bidders were ranked based on extra-economic grounds that potentially excluded buyers who could have paid more.²²

We can conclude this comparative discussion by noting that while Olivelle (2013: 601-602) is right that the two types of auctions are structurally similar in terms of the essential procedure, they differ regarding the degree of competition allowed by the design of the auction.

An exegetical detour

We have tried to use the treatise to understand the idea of the auction as conceived in ancient India. We can now turn to the treatise and contribute to its exegesis using the preceding comparative discussion. Three points are noteworthy regarding the organisation of the discussion on auctions in the treatise.

First, the auctions of land and goods are placed in two different books and under the supervision of two different types of government officers, namely, judicial officers and superintendent of customs. This suggests that despite broad similarities, the two kinds of auctions are viewed differently in the treatise. We have already seen that even after taking into account Olivelle's correction to Kangle's translation, the auctions of goods and auctions of land differ insofar as the latter is characterized by severe entry barriers and unequal priority to eligible bidders, among other things.

Second, the treatise, indeed, has two different notions of competition. The treatise uses different words for competition in the two contexts: *spardhā* (III.9.5, land) and *saṅgharṣa* (II.21.9, goods). *Spardhā* explicitly refers to competition, and it also gives a sense of direction (in which contestants are moving), whereas *saṅgharṣa* refers to general struggle (where competition is implied) without providing a sense of direction. While further assessment of the difference noted here awaits closer scrutiny of medieval commentaries on the *Arthashastra*, we can investigate other occurrences of these words within the treatise. Before that, note that both these words are hard to find in other ancient treatises that discuss regulation of economic activities (e.g., the *Dharmasastras* of Manu, Yajñavalkya, and Viṣṇu). Surprisingly, the word *spardhā* occurs only in one more place in the entire text, namely, IV.7.17, where it is used in the sense of (professional) rivalry. The word *saṅgharṣa* and its derivatives occur in five other places in the text: II.6.22 ('price increases due to competition for purchase . . . constitute[s] income [of the state]', Olivelle 2013: 110), VIII.2.5 (struggle within the ruling class in a state under co-rulers or illegitimate rulers), VIII.4.19 (disputes among subjects), IX.2.16 (shared rivalries of corporate troops), and XII.4.8 (price competition between spies disguised as vendors/tavern keepers selling poisoned food in enemy camp).

²² The claim about Pareto-efficiency may fail to hold in the case of goods if there are at least two bidders whose valuation of the goods being auctioned strictly exceeds the upper limit of the corresponding just price and bidder with the highest valuation fails to get the good.

Saṅgharṣa is used both in case of two actors as well as multiple actors and is used both to refer to clearly identified market competition as well as general rivalries including those directed at third parties. In contrast, both occurrences of *spardhā* relate to instances of competition in contexts involving fewer actors. This inference seems reasonable insofar as land auctions are likely to include fewer buyers than auctions of goods. But the hypothesis that two different words have been used because of the difference in the structure of markets might be incorrect if the two *sutras* belong to different layers of the treatise or are drawn from different sources. In that case, one may explain away the use of different words simply by arguing that vocabularies change over time. It bears noting that according to the existing scholarship, these *sutras* belong to chapters (II.21 and III.9) in the *Kautilya Recension*. But McClish (2009: 181-182) suggests that II.21 and III.9 might belong to two different strata within the *Kautilya Recension*.

Third, there is another exegetical problem, namely, the ordering of *sutras* in the adhyaya/chapter II.21. All translators treat II.21.13-14 (“Or, if... the duty”) as part of the text. But II.21.13-14 seems to be commentarial gloss on II.21.9 (“In case of... treasury”) that has found its way into the text. II.21.13-14 apes II.21.10-12 to elaborate the terse statement in II.21.9.

If we remove II.21.13-14 and reshuffle the remaining *sutras* as suggested below, then the text reads better: II.21.1-2 (duties of the Customs and Tolls department), II.21.3-6 (stamp related violations at the time of the entry of goods into the territory), II.21.10-12 (violations related to duties to be paid), II.21.7-9 (auction of the goods legally allowed into the territory and penalties for deviation from the prescribed format for auction), and II.21.15 (summary of the discussion). The remainder of the chapter (II.21.16-31) discusses provisions related to duty-free goods followed by treatment of exports.

Concluding remarks

Economic theorists have so far paid little attention to pre-modern economies outside the West. In light of the widely held belief that the rise of auctions followed the economic development in the West, this paper introduced auctions discussed in the *Kautiliya Arthasastra*, the best-known ancient Sanskrit treatise on statecraft, economic activities, and law. This paper complements Kumar (2012), which discussed cartels from the perspective of the *Kautiliya Arthasastra*.

The paper compares two types of auctions described in the treatise that correspond to open ascending-bid auctions with a reservation price and an upper bound to potential bids. The discussion highlights the difference between the two types of Kautilyan auctions in terms of the degree of competition allowed by the auction design. It also argues that Kautilyan auctions differ from modern auctions insofar as they were designed around the ideal of just prices. The treatise links just price with just profit. So, just price is seen as a dynamic price linked to production and transportation costs. Moreover, even as it was concerned about the destabilizing impact of speculation and fluctuations on social stability, the state was also concerned about the viability of businesses that is assured by limiting profits and not prices. Finally, it argues that Kautilyan auctions of goods are Pareto-

efficient but do not maximize the seller's profit. In contrast, Kautilyan auctions of land are neither Pareto-efficient nor do they maximize the seller's profit. Further, price discovery and resource allocation were among the key concerns of Kautilyan auctions, but the underlying understanding of competition is different from ours. This difference can possibly be accounted for by the radically different economic and technological contexts and the state of understanding of market dynamics. The Kautilyan world was marked by an acute scarcity of capital, a very high degree of risk and uncertainty, stagnant technology and very low rates of population growth because of which social stability was a key policy objective in resource allocation.

Finally, the analysis in the paper is put to exegetical use to speculate about the different compositional origins of the chapters dealing with auctions. Kumar (2011) suggested the use of game-theoretic analysis to identify interpolations in the *Arthashastra* and the *Kamasutra* (Treatise on erotic love) and to identify ideas borrowed and improved upon by the *Kamasutra* from the *Arthashastra*. There is a need to nurture economic exegesis to better understand pre-modern treatises.

Future work should closely examine the nature of competition and price discovery mechanisms in different types of auctions in the *Kautiliya Arthashastra*. More generally, the role of the Superintendent of Trade/Customs in auctions of goods and in establishing prices in markets of goods requires further investigation. A comparison of the Superintendent with the Walrasian auctioneer could yield interesting insights into the functioning of Kautilyan markets. The Walrasian auctioneer clears the market as it observes no constraints on price. The Kautilyan auctioneer could possibly run into circularities. For instance, limiting competition could make it difficult to attain just prices.

Another point that needs further research is whether the ancients followed the format of auctions described in the treatise. Since *sastric* or technical literature in Sanskrit is silent on implementation of laws, this issue requires exploration of medieval commentaries and ancient Indian mythological/fictional literature²³ and historical sources, *a la* Sternbach's (1952, 1953) exploration of non-judicial Sanskrit sources from the perspective of contract laws and Derrett's exploration of inscriptions (Lingat 1973: 273-274). At this point, we can only suggest that laws promulgated by a state or formulated by scholars need not necessarily rely on state machinery for enforcement. The resilience of the caste system provides an example of decentralized enforcement of extremely stringent penalties for violations prescribed in the *Dharmasastras*, which most of the individual, non-institutional enforcers had not read. See Akerlof (1976) for an analysis of the enforcement of the caste system without the intervention of the state. Rocher (1993) too discusses the decentralized community-level enforcement of law codes in pre-modern India without access to written texts or intervention of formal courts and the state.

²³ Cinematic renditions of the popular story of King Harishchandra such as the tele-serial *Upanishad Ganga* (The Human Goal: Dharma - Story of Raja Harishchandra - Episode 9) include two instances of auctions. However, auctions do not figure in ancient sources of this story such as *Vyasa Mahabharata*, *Markandeya Purana* and *Devibhagavata* and medieval sources such as Raghavanka's *Harishchandra Kavya*, a 12th Century Kannada text.

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