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Slavery and forced labor in early China and the Roman world

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Abstract: The use of coerced labor in the form of chattel slavery in the private sector has long been regarded as one of the defining characteristics of some of the best-known economies of the ancient Mediterranean. It may even have been critical in producing the surplus that sustained the ruling class. In early China, by contrast, forced labor (often by convicts) appears to have been concentrated in the public sector. This paper is a first attempt to study these systems comparatively in order to investigate whether these differences were genuine and significant, and whether they can be related to observed outcomes in terms of economic and socio-political development.

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Introduction

The comparative study of ancient western and eastern Eurasia is still in its infancy. Most existing work focuses on the intellectual history of Greece and China.¹ Over the last few years, this body of scholarship has been supplemented by comparative investigations of state formation and institutions in the Qin-Han and Roman periods.² Comparisons of economic features remain exceedingly rare.³ Owing to massive imbalances in the available amount and quality of data, this is unlikely to change anytime soon: on the Chinese side, problems include a predominance of moralizing texts (even more so than for the Roman world), the lack of documentary evidence for economic conditions, the relative immaturity of regional archaeology, and the historiographical legacy of Marxist developmental schemata. This unpromising situation is all the more unfortunate as analytical comparison can be very useful: it defamiliarizes the deceptively familiar, helps us causally connect discrete variables to observed outcomes, and allows us to establish broader patterns across individual historical cases.⁴

When it comes to the role of slavery and other forms of unfree labor, we stand at the very beginning of any kind of comparative engagement. I start from the observation that while slave-owning was widespread in history, large-scale slavery (in what are sometimes labeled ‘slave societies’, as opposed to mere ‘societies with slaves’) was limited to only a few societies, ancient Greece and Rome among them. Forced labor, by contrast, was a common feature of early states: notable examples include Ur III, Assyria, New Kingdom Egypt, and the Inca empire.⁵ In the following, I ask how different was ancient Rome from early China in terms of slavery and forced labor; what accounts for observable differences; and what they contribute to our understanding of overall economic development.

The status and sources of slaves

A comparative perspective may center on conceptualization – how slavery was perceived and defined – or on economic dimensions – what slaves did and how much their contribution mattered. In keeping with the theme of this conference my emphasis is on the latter but I begin by briefly touching on the former. According to classical Roman law everybody was either free or slave. Yet the non-slave population *de facto* included slave-like individuals such as those fighting in the arena or convicts labeled ‘slaves of the punishment’ (*servi poeni*). In early China, the fundamental distinction was between the ‘good’ and the ‘base.’ Free commoners were ‘good’ while slaves counted as ‘base,’ as did convicts (who did not technically become slaves) and other marginalized groups such as pawns and migrants.⁶ Employing Orlando Patterson’s terminology, these lowly persons were all considered ‘socially dead.’⁷ In both environments, ‘barbarian’ outsiders were seen as suitable for enslavement. Broadly speaking, therefore, Rome and early imperial China entertained similar notions of servile and non-servile identity.

As Patterson correctly observed, the enslavement of the relatives of condemned criminals was the only truly legitimate source of slavery in early China.⁸ Other mechanisms were common but formally illegal (such as kidnapping or the unauthorized sale of children by parents) or extralegal (such as the capture of foreigners).⁹ Even the enslavement of criminals themselves (reported only for the reign of the

¹ Tanner 2009 provides an excellent survey.

² Scheidel 2005-13, (ed.) 2009, (ed.) forthcoming. On representations, see Mutschler and Mittag (eds.) 2008.

³ The only exception so far concerns monetary history: Scheidel 2008b, 2009c, 2010.

⁴ For the uses and different types of historical comparison, see Scheidel 2009a, 2013, and the literature referenced there.

⁵ See now Monson and Scheidel (eds.) forthcoming.

⁶ E.g., Pulleyblank 1958: 204-5; Yates 2002: 299, 316.

⁷ Thus Yates 2002: 317. For the concept, see Patterson 1982: 38-51.

⁸ Patterson 1982: 127.

⁹ On enslavement under the Western Han, see Wilbur 1943: 72-97, esp. 73, 79 for the families of criminals. A statute of 186 BCE provided for the enslavement of family members of those convicted to 3 or more years of penal servitude (Barbieri-Low 2007: 246). Execution likewise triggered enslavement of kin (Wilbur 1943: 79). See Wang

much-maligned usurper Wang Mang) appears to have been unusual and potentially illicit: by contrast, the enslavement of their kin was an established deterrent rooted in the powerful concept of collective liability within the household or even beyond.¹⁰ In the early stages of the Roman state, certain categories of wrongdoers were liable to enslavement (such as defaulting debtors as early as in the reputedly fifth-century BCE Laws of the Twelve Tables and draft dodgers) but by the late Republican period this was no longer the case. Later on, very narrowly conceived ad hoc laws providing for the enslavement of free individuals faking slave status to defraud buyers or of certain free mothers who bore children by male slaves appeared but never became common. Just as in China, convicts condemned to hard labor in mines and quarries (*ad metallum*) did not technically acquire servile status. In both societies, for what it was worth, illegal enslavement did not formally alter free status. Enslavement of foreign enemies was a de facto procedure justified by custom: by *ius gentium* in the Roman case, which is a fancy way of saying that it was simply a fact of life, and similarly in China. In both cases, this type of enslavement could be construed as a functional alternative to and equivalent to being killed in war, resulting in ‘social death.’

Legal niceties aside, the sources of slaves may have greatly differed in practical terms. Unlike in Rome, where mass enslavement of war captives was repeatedly reported for centuries, we lack comparable references from the Warring States period, when wars were fought on an increasingly extravagant scale: if not killed outright (a common occurrence), captured soldiers were turned into convicts providing forced labor for the state or were absorbed into the victorious state’s forces, and conquered civilians were expected to produce tax income and labor services for their new masters.¹¹ For much of the Han period warfare was relatively limited in scope. In as much as enemies were seized, their status often remains unclear and used to attract considerable debate in modern scholarship.¹² There is no evidence to the effect that enslaved war captives played a significant role in the Han economy.¹³ For the fourth to the early seventh centuries CE, when large-scale interstate warfare was rife, the sources frequently mention the capture of substantial numbers of people. However, their final status is usually unknown; mass enslavement is explicitly mentioned on only two occasions in 554 CE.¹⁴ The observation that most recipients of gifts of slaves by the state were victorious generals is at best suggestive of the enslavement of war captives.¹⁵ In any case, in marked contrast to the situation in Rome, we lack references to wartime enslavement that would have supplied slaves to private buyers.

The scale of natural reproduction is empirically unknown in both societies.¹⁶ Slave families and hereditary slave status are known from early China.¹⁷ There, the offspring of two slave parents were unfree; unions of a free man with a slave woman probably produced slave children, but the legal provisions are not as clear as in Roman law. The custom of enslaving the kin of condemned criminals, who were presumably predominantly male, may well have skewed the servile sex ratio in favor of women, thereby facilitating natural reproduction – in China as in Rome, (male) owners had sexual rights to their slaves. The demographic contribution of abduction, exposure, and parental sale of children is necessarily unquantifiable.

1953: 308-10 for the continuation of this practice in the Period of Disunion. For the status of war captives, see below; for other sources, see Wilbur 1943: 85-8 (sale of free during famines), 92-96 (import of foreign slaves); Wang 1953: 307-8, 312-4.

¹⁰ Pulleyblank 1958 argues for a penal origin of early Chinese slavery, followed by Patterson 1982: 127.

¹¹ Yates 2002: 302. Note, however, that valor in battle was to be rewarded by the allocation of land, houses and slaves (Lewis 1990: 62), a practice that at least suggests the enslavement of some war captives.

¹² Wilbur 1943: 98-117 devotes an entire chapter to this problem. Focusing on the wars against the Xiongnu, he concludes that captives were at least at times enslaved.

¹³ Wilbur 1943: 115 argues that Xiongnu captives were unsuitable for many occupations and unlikely to have been of great economic importance. The 30,000 state slaves who reportedly tended 300,000 horses on 36 state ranches at some point under the Han may have been captives from the steppe (*ibid.*).

¹⁴ Wang 1953: 302-7.

¹⁵ Wang 1953: 314-8, esp. 317.

¹⁶ For Roman slave reproduction, see briefly Scheidel 2011: 306-8.

¹⁷ Wilbur 1943: 126-9; Yates 2002: 288, 308-10.

We are limited to the impressionistic assessment that while natural reproduction was probably always a major source of slaves, the conversion of free individuals into slaves relied in the first instance on two different mechanisms: capture in war in the Roman world and the seizure of the relatives of condemned criminals in early China. The Chinese system thus favored internal slave supply over external sources even more strongly than its mature Roman counterpart. More importantly, from an economic perspective this difference made it easier for individual Romans to acquire slaves for their personal use. By contrast, the enslaved kin of criminals came under the control of the state and although rulers are known to have gifted slaves to (usually aristocratic) beneficiaries, the imperial government would have been the foremost consumer of the labor provided by such slaves. The Chinese system was therefore weighted towards state control (either directly through the use of state-owned slaves or indirectly via the allocation of state-owned slaves to the power elite) whereas the Roman system primarily relied on market transactions to make slave labor available to private owners. This is emblematic of a more general difference between state control in China and commercial development in Rome that will be further discussed below.

The scale of slavery

The slaves' share in the overall population, were it known, would be a key indicator of the economic importance of unfree labor. The Han and Roman empires ruled a similar number of subjects. In 2 CE, a little under 60 million people were registered by the Han authorities, a total that excludes marginal groups such as migrants, convicts and slaves and may have been lowered by less-than-perfect coverage. The actual Han population was probably similar to that of the Roman empire in the first two centuries CE, which may have reached 70 million or more.¹⁸ I have argued elsewhere that very roughly a tenth of the inhabitants of the Roman empire may have been slaves.¹⁹ Corresponding guesses of anywhere from 1 to 50 percent (!) have been advanced for Han China, with Martin Wilbur's low figure of around 1 percent having proven the most popular since it was first proposed no fewer than 70 years ago.²⁰ The foundations of this number are however much shakier than its remarkable resilience suggests. Wilbur arrives at this conjecture by combining a reference to 100,000 state slaves in the 40s BCE with the guesstimate of a half million or so slaves in private hands. This latter figure is based on an abortive decree of 7 BCE that sought to limit slaveownership to 200 slaves for a vassal king, 100 for certain members of the top nobility, and 30 for everybody else.²¹ Assuming that the maxima for the first two groups did not greatly exceed actual holdings, he posits some 30,000-50,000 slaves in this category, to which he adds roughly ten times as many again to account for all other slaveowners. The starting assumption appears sound given that a former vassal king was said to own 183 slaves in 67 BCE and a top elite person reportedly received 170 slaves as state gifts over the course of two decades, and is likewise consistent with the fact that even more rhetorically charged statements usually ascribe 100s rather than 1,000s of slaves to the estates of very wealthy individuals. When the emperor Han Wudi confiscated elite slaves, this intervention supposedly yielded 1,000s of slaves and up to 10,000, instead of much larger numbers. All of this points to levels of elite slaveowning that are compatible with Wilbur's estimate. But his conjecture works less well for the lower tiers of Han society: his tally schematically allows for some 25,000 owners of 500,000 slaves, at an average of 20 slaves. This approach raises two problems. One is the neglect of potential slaveownership in the sub-elite population: 25,000 owners would account for not more than 0.2 percent of all registered households, creating an improbably small elite stratum.²² If, say, a

¹⁸ Bielenstein 1987: 13-14; Scheidel 2007: 48.

¹⁹ Scheidel 2011: 288-92 (15-25% in Italy, 5-10% in Egypt, 7-13% in the empire).

²⁰ Wilbur 1943: 174-7.

²¹ *Hanshu* 24A.8a, in Wilbur 1943: 435-7. Compare comparable restrictions of 300 slaves for nobles and 60 for commoners in Qi in 564 CE (Wang 1953: 311).

²² As Wilbur 1943: 165 notes, Han texts convey the impression that all kinds of people owned slaves, but cautions that they had to be fairly prominent to be mentioned at all: "Ownership per se was of no special interest to the Han

mere 4 percent of all 12 million households in the empire on average owned 2 slaves each this would translate to an additional million slaves overall, almost tripling Wilbur's original guess. The other problem stems from the fact that more recently discovered tombs of lower-level Han officials from Fenghuangshan (Hubei) contain wooden figurines representing slaves meant to serve their owners in the afterlife and inventories listing their duties (on which more below). These finds reveal that an average official could claim to have owned 40 or 50 slaves, a startlingly large number. While we cannot tell how realistic or typical this was, it would seem difficult to reconcile these records with Wilbur's conjectures. I conclude that an extremely low figure of the order of 1 percent is not well supported. A total share of several percent, and thus a Han-era slave population in the low seven figures, seems more plausible.²³

Slave labor

An alternative route to a defensible estimate of slave numbers starts from an assessment of slaves' role in different sectors of the economy. This bottom-up approach, which extrapolates from documented or conjectured demand for slave labor, arguably works reasonably well for Roman Italy but faces more serious obstacles in the case of the Han empire.²⁴ Given the predominance of the agrarian economy, the presence of slaves in farming is the single most important determinant of the overall size of the slave population. Numbers may be hard to come by even for the core areas of the Roman slave economy but at least the sources, localized or impressionistic as they may be, give us little reason to consider agrarian slave labor a rare or exotic phenomenon.²⁵

Conditions in early China are more obscure because only two texts from the Han period explicitly mention slave labor on farms, in each case undertaken by just a single slave, and a third text, from the Northern Dynasties period, likewise refers to agrarian slavery on a very small scale.²⁶ At the same time, a number of texts imply an association of slaves and agricultural activity by mentioning land and slaves side by side, often in the context of emperors' gifts to elite members.²⁷ Such texts are hard to understand: they might suggest that fields and slave labor were functionally connected or simply paired those two as "standard indices of wealth."²⁸ Slaves may have accompanied gifts of farm land because they were meant to cultivate it, or perhaps because the land (cultivated by tenants) could be used to support them. This is a more general problem that also occurs in the context of biographies of rich merchants and manufacturers who were said to have owned lots of slaves alongside other resources (see below). More specifically, state decrees against extensive ownership of land and slaves may well "imply a functional connection."²⁹ To Roman historians, this kind of concern will seem familiar and invite a rather specific reading: suffice it to compare

"Therefore, [the influential people] multiply their male and female slaves, increase their [herds of] cattle and sheep, enlarge their fields and houses, broaden their fixed property, and accumulate goods. Busily engaged in these pursuits without end, they thereby oppress and trample on the common people. The common people are daily pared down and

historians except to illustrate the wealth of an individual, his imperial favor, or some other notable matter in which slaves had to be mentioned to make the facts intelligible."

²³ It is hard to know what to make of the observation that Han texts do not contain specific terms for slave dealers (Wilbur 1943: 122) – does this imply lower levels of commercial specialization or a lower volume of slave trading than in the Roman world?

²⁴ For Roman Italy, see Scheidel 2005: 289.

²⁵ For Roman slave labor in general, see most recently Bradley 1994: 57-80; Bodel 2011; Harper 2011: 1-200.

²⁶ Wilbur 1943: 195-6; Wang 1953: 335-6.

²⁷ Wilbur 1943: 196-203; Wang 1953: 334-5.

²⁸ Thus Wilbur 1943: 197; but cf. Wang 1953: 335 ("Slaves presented by the court in conjunction with land gifts were obviously intended for farming purposes"). This seems overly confident.

²⁹ Wilbur 1943: 197.

monthly squeezed, gradually becoming greatly impoverished.” (*Hanshu* 56.8b, in Wilbur 1943: 310)

with

“For the rich, getting possession of the greater part of the undistributed lands, and being emboldened by the lapse of time to believe that they would never be dispossessed, absorbing any adjacent strips and their poor neighbors’ allotments, partly by purchase under persuasion and partly by force, came to cultivate vast tracts instead of single estates, using slaves as laborers and herdsmen, lest free laborers should be drawn from agriculture into the army. At the same time the ownership of slaves brought them great gain from the multitude of their progeny, who increased because they were exempt from military service. Thus certain powerful men became extremely rich and the race of slaves multiplied throughout the country, while the Italian people dwindled in numbers and strength, being oppressed by penury, taxes, and military service. If they had any respite from these evils they passed their time in idleness, because the land was held by the rich, who employed slaves instead of freemen as cultivators.” (Appian, *Civil Wars* 1.7)

But how exactly was Han elite slaveowning thought to harm the common people? Unlike in Appian’s scenario, the Chinese text quoted does not actually specify that slaves displaced free workers; nor do any others. It remains unclear whether slaves were seen as means to acquire greater wealth – equivalent to ‘herds’ and ‘fields’ – or rather as a manifestation of wealth – equivalent to ‘houses’ and ‘goods.’ The first scenario meshes well with recurrent concerns about the expansion of the power of landlords and their estates that undermined the state’s tax base by impoverishing and clientelizing the peasantry.³⁰ It is also consistent with the sporadic appearance of higher slave numbers under the Eastern Han, when landlords increasingly dominated the scene, than under the Western Han.³¹ In the latter scenario, by contrast, slaves might have been a burden for commoners because of the cost of their upkeep, which required growing exactions from tenants and other primary producers who toiled on behalf of the rich.³² This alternative interpretation is not as far-fetched as it might seem: Han sources do complain about the idleness or unprofitability of state-owned slaves.³³ Han slavery was mostly associated with service functions, and we find references to the use of domestic slaves as status symbols, decked out in expensive garb and numerous far beyond any practical purpose.³⁴

Even so, on balance it would seem difficult to view slaves only as a drain on the agrarian assets of the wealthy: if slaves had merely absorbed their owners’ resources, why would Han Wudi have confiscated them from antagonistic elite households and why would the decree of 7 BCE have restricted ownership specifically of land and slaves? Further support for a greater productive role of slaves in early Chinese farming is furnished by the aforementioned officials’ tombs, according to whose inventories between 25 and 43 percent of the recorded slaves were engaged in farming, women as field workers and

³⁰ A standard theme of imperial Chinese history: e.g., Lewis 2007: 21-2, 69-70 (Han); Balazs 1964: 101-25; Deng 1999 (in general).

³¹ See Ch’ü 1980: 147, for 800, more than 1,000, 1,000s, and 10,000 slaves held by individual owners; and cf. Wilbur 1943: 169-74, esp. 170, for the Western Han period, noted above. Needless to say, given the stylized character of all such numerical claims, this observation does not bear much weight. Cf. also below, at n.46.

³² Considered by Wilbur 1943: 239-40.

³³ Wilbur 1943: 114 with 228; Barbieri-Low 2007: 220.

³⁴ Wilbur 1943: 195; Wang 1953: 340-1.

men as herders, stable hands and field foremen.³⁵ Although the literary evidence is indeed highly ambiguous, it therefore seems legitimate to consider a more expansive scenario of agrarian slavery where 100,000s of slaves might have worked the fields and tended livestock. Just as in the Roman case, the key issue here is not whether Chinese slaves ever produced more than a small portion of all agrarian output – which they surely did not – but to what extent the ruling class relied on slave labor to produce the surplus that sustained their elevated status.

This raises the question of slave employment in other sectors of the economy. It catches the eye that dozens of biographies of rich merchants and manufacturers do not normally mention slaves as wealth producers.³⁶ Only a single entrepreneur is said to have employed his slaves “in seeking profits from fishing, salt, and trade.” This is presented as if it were noteworthy, and the same is true of what may point to an arrangement of self-hire for his slaves.³⁷ The only other example concerns Zhang Anshi, whose “700 household ‘youths’ [probably: slaves] were all skilled in manufacturing; he produced goods and saved up even the minutest things; wherefore he was able to produce commodities.”³⁸ Even mining and salt-processing, operations which lent themselves to the use of unfree labor, are not explicitly linked to slavery. Western Han sources never associate salt and iron production with slave labor, and the Eastern Han period merely yields ambiguous references to an iron manufacturer who owned 800 slaves and gave 100 of them to his daughter, and to a merchant near the end of the period who was credited with 10,000 slaves and donated 2,000 slaves and ‘guests’ (a separate status) to his brother-in-law.³⁹ Nothing solid can be built on such casual asides. Conversely, both free migrant labor as well as state-controlled convict labor are expressly mentioned in the context of Han salt and iron production (see below).

The Chinese evidence is just as poor regarding the employment of slaves in positions that entailed autonomy and therefore required reward incentives.⁴⁰ From a Roman perspective, it is striking that the existence of a Han equivalent of *peculium* is unclear beyond sporadic references to the self-ransoming of slaves or their retention of gifts, and that there is not much evidence for the use of manumission as a motivational strategy, let alone for the use of freedmen as agents of their former owners.⁴¹

In view of all this, it would seem like a stretch to conjecture that slave labor in manufacturing and skilled jobs was in fact widespread in early China but merely obscured by a narrow textual tradition that ignored it: although absence of evidence does not equal evidence of absence, the latter cannot readily be read as pervasive neglect by the sources either. On any even moderately conservative reading of the evidence, slave labor – and, by extension, intermediation by freedmen – appears to have been considerably more entrenched in the urban economy of large parts of the Roman world than in that of early China.

Incentive structures

If slave labor was indeed more common in the Roman world than in early imperial China, what were the reasons? With respect to agriculture, modern scholarship on early China tends to emphasize the generous supply of landless free labor from which landowners could cheaply draw tenants and hired or

³⁵ Barbieri-Low 2007: 253.

³⁶ Wilbur 1943: 216-20, esp. 217. See also Wang 1958: 339 for the Period of Disunion.

³⁷ *Hanshu* 91.9a: “It was said, ‘Rather to be with Tiao than to have noble rank.’ This means that he was able to make strong male slaves self-sufficient [?] while using their energies to the utmost.” See Ch’ü 1980: 322-4 with 324 n.5.

³⁸ *Hanshu* 59.5a (c.74-62 BCE), in Wilbur 1943: 365, and also 218-9.

³⁹ Wilbur 1943: 218 (Western Han); Ch’ü 1980: 147-8 (Eastern Han), who considers it “unlikely” that two iron manufacturers in Sichuan who owned hundreds of slaves did not employ them in their businesses. Cf. also Barbieri-Low 2007: 251-2 for the Zhou family, which owned 800 or 1,000 slaves and controlled mines, in the absence of an explicit connection between these asset classes.

⁴⁰ For a single known case of a slave as business manager under the Western Han, see Wilbur 1943: 184; and cf. Wang 1953: 339 for an owner of mines who had slaves manage them.

⁴¹ Wilbur 1943: 219-20 (*peculium*), 135-8 (private manumission). Contrast the rich Roman evidence: Mouritsen 2011: 206-47. *Servi vicarii* in China are only known since the Yuan (Mongol) period: Yates 2002: 298.

indentured workers.⁴² This, however, was probably also true of much of the Roman world. Real slave prices – expressed in grain equivalent – were very broadly similar in both societies.⁴³ Patchy fields were common both in the Mediterranean and in China. In Italy under the Roman Republic, conscription and growing urbanization ‘thinned’ labor markets by increasing worker mobility and creating stronger incentives for the purchase of slaves by an elite that benefited from the spoils of empire in the form of growing personal wealth and access to large numbers of war captives and other slave imports.⁴⁴ Yet the Warring States period likewise witnessed massive dislocations and mounting pressure on labor resources driven by heavy military and civilian conscription. And indeed, the Qin regime in particular was later condemned – among many other things – for selling slaves like animals in markets, an indication that the slave economy may in fact have grown in that period.⁴⁵ Occasional references to the scale of elite slaveownership under the Qin exceed those for the Western Han, but little weight should be put on such snippets.⁴⁶

Rome’s greater reliance on slave labor can be traced to two factors, the relative paucity of slaves on the Chinese market and the less privileged position of Chinese wealth elites. In the Warring States period, war captives were turned into forced laborers or drafted into the military instead of being sold off to private bidders as they were in Rome (even though some may have been distributed to members of the military). Whereas Roman elites effectively owned the state and sought to maximize their benefits from it, in the centuries leading up to the completion of the Qin conquests the most successful Chinese states worked hard to contain elite privilege, and Western Han rulers (and then especially Wang Mang) strove to maintain this practice at least up to a point. Both of these processes served to restrict private slave use. Additional contributing factors may be sought in the absence of an equivalent to Mediterranean cash crop production such as viticulture or *pastio villatica*, which were conducive to slave labor, and more generally in lower levels of commercialization in the terrestrial and regionalized environment of early China than in the better interconnected Mediterranean core of the Roman world.⁴⁷ The more developed slave economy of the Roman world is best seen as the result of a concatenation of several favorable circumstances such as greater elite autonomy, greater mobility, and greater capital formation in the private sector. I return to this at the end of my paper.

Forced labor

The notion that the relative importance of slave labor was associated with different levels of overall economic development is consistent with observed variation in the prevalence of forced labor other than chattel slavery. Conscript and convict labor were generally much more common in early China than in the Roman world. Forced labor certainly existed under Roman rule and given the patchwork character of their empire was more entrenched in some regions than in others: the *corvée* tradition in Egypt is a good example. Moreover, certain liturgies, especially those related to transport, appear to have been common throughout. Even so, at least in its core regions, the Roman state did not rely on regularized non-military conscript labor at all. Penal labor (*opus publicum*) was primarily a feature of municipal life. Convicts could be compelled to work for fixed terms (durations of one, two to three, and up to ten years are known), performing local services such as road building, clearing of drains, bath-house attendance, or

⁴² E.g., Wilbur 1943: 204-10, 248; Hsu 1980: 63-5; and cf. also Ch’ü 1980: 149.

⁴³ Chinese slave prices are scarce: see Yates 2002: 306 (15,000-30,000 cash mostly under the Western Han); Barbieri-Low 2007: 249 (40,000 cash under the Eastern Han). This translates to maybe 3 to 6 tons of wheat, comparable to Roman-era slave prices of 4 tons +/-50% (Scheidel 2008a: 124).

⁴⁴ For the model, see Scheidel 2008a.

⁴⁵ Yates 2002: 288. Both Pulleyblank 1958 and Yates 2002 argue for a sharper demarcation of slave status in this period.

⁴⁶ See Ch’ü 1980: 328 for 10,000 slaves owned by a Qin chancellor and 1,000s given to the lover of an empress dowager. The rhetorical character of this is clear: for the same problem, see already above, at n.31.

⁴⁷ See for the contrast Adshead 2004: 20-9. For a formal demonstration of the economic importance of Mediterranean connectivity, see now Scheidel forthcoming b.

operating treadmills.⁴⁸ Such instances of forced labor were grounded in local custom: there is no comparable evidence for the city of Rome itself. Unknown under the Republic, penal servitude under the direct control and for the benefit of the Roman state was narrowly circumscribed under the monarchy: convictions *ad metallum* sent free and slave offenders to mines, quarries and salt-works, generally (or perhaps always) those that were imperial property.⁴⁹ In the fourth century CE, female offenders could also be made to work in imperial clothing factories. Just as in early China, convicts lost all their rights, could be put in fetters or tattooed, had their heads shorn, and were effectively treated as slaves (as indicated by the term *servus poenae*, ‘slave of the punishment’) without being formally reduced to slave status.⁵⁰ While the scale of this practice cannot be measured, there is nothing to indicate that it was of more than rather limited economic significance or indeed that the economic use of convicts was the state’s primary motivation for condemning them.⁵¹

This was a far cry from the crucial role of both conscript and penal labor in early China.⁵² In the Qin and Han empires, most of the adult civilian population was required to perform corvée labor for the state, usually one month per year.⁵³ Depending on period and rank, service obligations started at age 15 to 17 or 20 to 24 and ceased at anywhere from age 56 to 66. Not all those liable were actually called up at any given time in order to keep mobilization from interfering with essential agricultural tasks. Most work was performed locally, on dams and dikes and roads and in the transportation of tax in kind. However, conscripts were sometimes be dispatched to participate in projects at the imperial center: the most famous example involves some 145,000 conscripts who built part of the walls of Chang’an in the 190s BCE.⁵⁴ Artisans likewise faced conscription, their special skills exempting the remainder of their households from service.⁵⁵

Vast numbers of crimes carried a sentence of penal servitude, which ranged in length from one month to six years, with terms of one to five years being the most common.⁵⁶ In the Qin period, war captives could also be assimilated to the status of convict laborers.⁵⁷ Convicts “built palaces, dug tombs, shored up dikes, built roads and bridges, cut fodder for horses, harvested timber, transported tax grain, mined copper and iron ore, cast iron tools, minted coins, boiled brine into salt, and dyed fabric.”⁵⁸ Put at the disposal of the state for longer periods of time and without regard for their personal circumstances or welfare, they were often transferred over long distances and operated in large groups. Numbers range from an estimated 10,000 to 50,000 convicts employed in the Western Han iron industry to over 100,000 convicts, slaves and officials used for mining and smelting in the same period and 700,000 convicts and slaves who built the palace of the First Emperor.⁵⁹ The enormous scale of convict labor for the central government and the brutal treatment that workers were subjected to are best documented by archaeological evidence for the construction of various Han imperial tombs. Huge adjacent cemeteries contain many thousands of neatly interred bodies, mostly men aged 20 to 40, often with iron collars and

⁴⁸ Millar 1984: 132-7 is the best survey.

⁴⁹ Millar 1984: 137-43.

⁵⁰ Millar 1984: 138; Burdon 1988: 73-81. See also above.

⁵¹ Thus Millar 1984: 146; Burdon 1988: 82.

⁵² Lewis 2007: 250 maintains that “[f]orced labor was the foundation of the Qin and Han states.” Yates 2002: 315 thinks that use of forced labor “may have been one of the decisive factors” in Qin’s success. Forced labor was already important in the Shang period: Yates 2002: 301, drawing on David Keightley’s work.

⁵³ See Barbieri-Low 2007: 214-5 for a summary that takes account of the most recent discoveries.

⁵⁴ See Barbieri-Low 2007: 220-3 for a detailed discussion: conscripts were drawn in from a 250km radius for one month in February/March when there was little farm labor to be done.

⁵⁵ Barbieri-Low 2007: 224.

⁵⁶ Wilbur 1943: 41; Barbieri-Low 2007: 228-9. By the Eastern Han period, some 600 crimes were punishable by death but even more led to penal servitude. Certain crimes could be redeemed by paying a fine instead of performing labor service: Yates 2002: 307-8.

⁵⁷ Yates 2002: 313.

⁵⁸ Barbieri-Low 2007: 232. See also Yates 2002: 304.

⁵⁹ Barbieri-Low 2007: 220, 234, 237.

leg fetters and sometimes crude epitaphs that specify their names, origins, and penalties. In keeping with textual evidence, these finds suggest that many convicts perished before their terms were completed.⁶⁰

Han authorities employed a two-tier model that matched different types of forced labor to different types of tasks: while conscripts were normally used locally and for short periods in tasks that at least partly benefited the local population, convicts were exploited in the hardest jobs. This arrangement minimized the impact of *corvée* obligations on private productive activity such as farming (and thus on primary producers' ability to render tribute) and resentment among ordinary commoners.⁶¹ When military conscription was abolished early under the Eastern Han dynasty, the use of convicts greatly expanded in the military sphere as well, as many were drafted for garrison duty at the frontiers. One source mentions no fewer than 2,000 prisons in this period that fed the forced labor system.⁶²

Convict labor provided early Chinese states with the kind of highly fungible and mobile labor force that in the Roman world was made up of slaves. The least desirable tasks could readily be devolved upon them: in contrast to the Roman world, no slave revolts are reported in early China; instead, it was Han convicts who at times rose in considerable force.⁶³ However, unlike in the Roman world, where this type of labor was often used in the private sector, in early China it was the central government that depended on it for the performance of vital state-related operations and infrastructure projects. The Roman practice of convictions *ad metallum* was only a pale shadow of the much more extensive gulag-like Chinese system of penal servitude. The Roman state relied more on the labor market for the completion of public works. Even when in late antiquity the Roman empire began to operate *fabricae* to manufacture arms for the military, the workers were generally free persons ranked as soldiers whereas the more numerous Qin and Han establishments that produced not only weaponry but also tools and luxury items employed convicts alongside free workers.⁶⁴

State power and economic development

The only exception to these divergent practices concerns imperial administration. Both the Han and Roman authorities heavily drew on state slaves to assist in governmental functions. The *familia Caesaris* was vital in managing the affairs of the emperor well beyond the imperial household. One source ascribes 100,000 slaves to the Han state of the mid-first century BCE, a number that is suspiciously round, impossible to verify, and may well be (much?) too high.⁶⁵ Wilbur conjectures that lifetime service was well suited to skilled labor and that state slaves may therefore have been concentrated in services and knowledge-rich functions, a notion that chimes with criticisms of their supposed idleness and profit-seeking. Unlike convicts, many of them may have been servants, clerks and accountants rather than manual laborers.⁶⁶ At the same time, the Warring States and Han empire employed large numbers of free salaried men to staff government offices, whereas in the Roman empire these functions were largely

⁶⁰ Barbieri-Low 2007: 236-42. The cemeteries imply average fatality rates of several men per day.

⁶¹ Barbieri-Low 2007: 245.

⁶² Lewis 2007: 248-50.

⁶³ Wilbur 1943: 224-5, 242; Barbieri-Low 2007: 227, 241-5. Wilbur 1943: 242 notes the absence of references to callous treatment of Han slaves, in obvious contrast to the Roman tradition.

⁶⁴ Jones 1964: 834-5 (35 *fabricae*); Barbieri-Low 2007: 253-4 (over 100 Chinese factories). Only late Roman weaving mills employed (female) convicts and state slaves (Jones 1964: 836).

⁶⁵ *Hanshu* 72.7a in Wilbur 1943: 397, with 114, 176 (viewed as an exaggeration). Cf. the suspiciously similar complaint about the presence of over 100,000 convicts, conscripts and officials involved in mining and smelting in the same memorial (*Hanshu* 72.13a-b, with Barbieri-Low 2007: 220). When Han Wudi seized 1,000s of slaves of the rich, the state bureaux absorbed them only with difficulty (Wilbur 1943: 114), which points to a total much more modest than 100,000 overall. The reference to 30,000 state-owned ranching slaves is likewise unverifiable (Wilbur 1943: 115).

⁶⁶ Wilbur 1943: 227-8, 231. There is no evidence of their use in farming even when both land and slaves were confiscated (233-4). In one instance, state slaves manufactured model farm tools for demonstration purposes (234).

devolved upon locally autonomous elites and the municipal officials recruited from amongst them. It was only in late antiquity that the Roman state began to adopt a Han-style model of low-paid free clerks.⁶⁷

The greatest overlap between the two societies thus occurred in the sphere of central administration, where slaves were employed in considerable numbers and the free salaried workforce expanded in the later Roman empire.⁶⁸ Although conscript and convict labor were by no means unknown in the Roman world, they were much more widespread in early China. Forced labor is arguably more typical of less developed economies in which the state cannot rely on markets to get difficult jobs done. Chattel slavery can be seen as a way to obtain new resources with the help of 'outside' labor without challenging entrenched societal arrangements.⁶⁹ In early China, both the creation of 'outsiders' from within the in-group (in the form of convicts) and the mobilization conscript labor (facilitated perhaps by an ideology of familial duty or the peasantry's rationalization of economic necessity⁷⁰) may have posed less of a challenge than in the citizen-centered and locally autonomous communities of the Greco-Roman Mediterranean.

This sketch of divergent state strategies aligns well with the notion of unequal economic development as indicated by different levels of slave use in the private sector, discussed above. Both fit into a scenario of stronger economic development in ancient Rome than in early imperial China.⁷¹ This, in turn, is consistent with Ian Morris's estimate that key indices of social development in China did not reach Roman levels until the Song period, almost 1,000 years later, when commercial growth took off on an unprecedented scale.⁷² The study of the 'location' and relative significance of slavery and forced labor in early China and the Roman world thus contributes to a larger effort to track and make sense of economic development in the long run.

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⁶⁷ See Eich forthcoming and Zhao forthcoming for the contrast between the two systems.

⁶⁸ Scheidel forthcoming a.

⁶⁹ Miller 2012: 36-72.

⁷⁰ Wilbur's 1943: 247 conjectures.

⁷¹ Cf. my earlier argument in favor of greater monetary development in the Roman empire compared to Han China: Scheidel 2009c: 199-206.

⁷² Morris 2013: 240-3.

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