ROMANS AND MUGHALS
ECONOMIC INTEGRATION IN A TRIBUTARY EMPIRE
By
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...the decline of Rome was the natural and inevitable effect of immoderate greatness...as soon as time or accident had removed the artificial supports, the stupendous fabric yielded to the pressure of its own weight. The story of its ruin is simple and obvious; and instead of inquiring why the Roman empire was destroyed, we should rather be surprised that it had subsisted so long.

Gibbon, *The Decline and Fall of the Roman Empire*, IV, 119

Imperial redistribution or private market?

Those are the immortal words of Gibbon uttered with his characteristic acrimony while contemplating *the decline and fall of the Roman empire*.¹ At first, they may come as a surprise. After all, this was the very same man that proclaimed the age of the Antonine emperors “the period in the history of the world, during which the condition of the human race was most happy and prosperous.”² But alas, those blessed times rested on fragile foundations. The government of the realm was concentrated in the sole powers of one man, the emperor. All depended on his skills and attitude towards his duties as ruler. To Gibbon, the golden 2nd century was an aberration. It was the result of almost unbelievably good luck. Only a fortuitous string of unusually capable, conscientious and moderate emperors had made it possible. In the long run, the situation was unstable. Inevitably a bad person or one of a character less steadfast in the face of the enormous temptations offered by absolute power would succeed to the throne and bring the happy days to an end. That person, by the cruel irony of history, was Commodus, in every

¹ See now P. Garnsey & C. Humfress, *The Evolution of the Late Antique World* (Cambridge 2001), chapter 10 for a treatment of Gibbon’s notion of “immoderate greatness” and despotism. I should like to take this opportunity to thank professors C. A. Bayly, Peter Garnsey, Keith Hopkins, Richard Saller and audiences in Cambridge, Nottingham and Chicago for stimulating discussions and many useful comments and suggestions to improve various versions of this paper. The final outcome, however deficient, has benefited immensely. Need I say that the responsibility for the argument or any remaining errors rests entirely with the author.

² E. Gibbon, *The Decline and Fall of the Roman Empire* I (London 1993, Everyman Library), 90. See further pp. 90-99 for his general reflections on the instability of empire and the corrupting influence of despotism.

way the exact opposite of his father, Marcus Aurelius the enlightened philosopher king. From the reign of the degenerate Commodus the history of the empire was one of arbitrary despotism, corruption, military anarchy, brutal oppression and the withering away of its powers. This view was and is by no means unique to Gibbon. He is only one representative of a strong tradition in European sociological thinking that sees the large universal empires of history mainly as destructive tributary political systems, exploiting the subject populations ruthlessly. Pejorative labels such as capstone government, lethargic state, predators and “sponges that sopped up resources” are often used to sum up the nature of these pre-modern empires in this line of thought.³ And yet, in spite of its alleged pernicious influence on society, the Roman empire managed to linger on for centuries. Indeed, as has lately been suggested, one of the greatest shocks to Gibbon in writing his history was probably to realise the almost, from this point of view, perverse ability of the imperial system to renew itself and regain its strength;⁴ he needed 6 long volumes finally to lay the Roman imperial leviathan to rest.

Ultimately, the universal empire presented itself as a paradox to Gibbon. It was a bit like the bumblebee. For many years science was unable to explain how it could fly. According to established theories it ought to have been impossible. Still, it did fly. Seen from the perspective of the early modern world the universal empires of agrarianate⁵ society were a puzzle which could not easily be unravelled - a contradiction in terms, almost. In the *Wealth of Nations* Adam Smith likewise struggled unsuccessfully to make ends meet in his description of imperial China. On the one hand, he saw one of the richest societies in the world with a highly productive irrigation agriculture, a substantive division of labour and an extensive inland trade. On the other hand, he observed the imperial tributary elite depress the economic performance of the country through political privileges, taxation, arbitrary administration and outright predatory encroachment on the wealth of the producing and mercantile layers of

³ E. L. Jones, *Growth Recurring* (Oxford 1988), chapters 7 and 8, contains a fair selection (citation from p. 117). Other recent examples are J. Hall, *Powers and Liberties* (London 1985), chapters 2 and 4, and D. Landes, *The Wealth or Poverty of Nations* (New York 1998).

⁴ J. Robertson, ‘Gibbon’s Roman Empire as a universal monarchy: the decline and fall and the imperial idea in early modern Europe’, in R. McKitterick & R. Quinault, eds., *Gibbon and Empire* (Cambridge 1997), 247-270.

⁵ The term agrarianate society was coined by the great comparative historian, M. Hodgson, in *The Venture of Islam I*, 107-109 to denote complex civilisations still dominated by agricultural production.

society.⁶ How could those phenomena go together? The answer, so far, has mainly been in the negative. They couldn't. Agrarian empire and market are normally treated as opposites within the tradition of historical sociology.

In the debate on the Roman economy between *primitivists* and *modernists* this has boiled down to a question of redistribution vs. market activities. Those inclined to emphasise the particular nature, the otherness as it were, of the Roman economy have pointed to redistribution in kind organised by the state rather than market trade as the most important explanation for movement of resources over longer distances.⁷ Those that stress the role of the market in the Roman world prefer to paint the economy in less "foreign" colours. They normally insist on the similarities with later European developments and try to assimilate the function of the Roman imperial system as much as possible to the practices associated with the rising, bourgeois nation states.⁸ Symptomatic, in this respect, is the way the debate on Keith Hopkins' taxes and trade model has evolved. Basically, in response to Finley's *Ancient Economy*, Hopkins suggested that the taxation of the Roman state promoted commercialisation and urban manufactures because the provincials in the long run had to earn back, through exports, the coinage they needed to pay a large part of their taxes. Otherwise, the imperial tax demand would soon have depleted large tracts of the empire of their money supplies and rendered them unable to meet their tax obligations. Thus the empire would have experienced a moderate growth – a fact he finds corroborated by the expansion in the volume of the interregional transfer of goods documented by archaeologists studying amphorae, shipwrecks and

⁶ A. Smith, *An Inquiry into the Nature and Causes of The Wealth of Nations* (Oxford 1976, the Glasgow edition), 111-112 contains the essence of his analysis.

⁷ Some examples stressing the importance of redistribution are P. Middleton, 'The Roman Army and Long-Distance Trade', in P. Garnsey & C. Whittaker, eds., *Trade and Famine in Classical Antiquity*, (Cambridge 1983), 75-83; D. Peacock & D. Williams, *Amphorae and the Roman Economy* (London 1986); C. Wickham, 'Marx, Sherlock Holmes and late Roman commerce', *Journal of Roman Studies* 78 (1988), 183-193; C. Whittaker, *Frontiers of the Roman Empire. A Social and Economic Study* (Baltimore/ London 1994) and J. Remesal Rodríguez, *Heeresversorgung und die wirtschaftlichen Beziehungen zwischen der Baetica und Germanien* (Stuttgart 1997).

⁸ H.W. Pleket, 'Wirtschaft', in F. Vittinghoff, ed., *Europäische Wirtschafts- und Sozialgeschichte in der Römischen Kaiserzeit* (Stuttgart 1990), 25-160 is the best and most fully developed example of this position. For some other examples, see J. D'Arms, *Commerce and Social Standing in Ancient Rome* (Cambridge/Mass 1981); W.V. Harris 'Between archaic and modern: problems in Roman economic history', in *The Inscribed Economy. Journal of Roman Archaeology, Supplementary Series* 6 (Ann Arbor 1993), 11-29 and P. Horden & N. Purcell, *The Corrupting Sea* (London 2000), though the latter concentrate mainly on reducing the contrast to Medieval Europe.

various types of fine ware.⁹ Finley remained sceptical. He preferred to see exploitation of the provinces and a static economy. Others have added that state taxation and redistribution in kind combined with internal transfer of resources between the widely scattered estates belonging to the households of the elite would go a long way to explaining the material remains and significantly reduce the role of the market.¹⁰ The principal merit of these criticisms is that they call attention to the many institutional and logistic “imperfections” characterising most pre-modern economies. At ground level the expectations of Hopkins’ macro-model may turn out to be too neat. In practice, even taxes assessed in money may occasionally have been delivered in kind.¹¹

None the less, transactions in kind can hardly account for all or most movement of material goods around the empire. As Hopkins has pointed out, the state would not have been able to consume most of its taxes in kind. It would have had to sell some of them on the markets around the empire and thereby promote commercialisation - a practice that is well enough attested not to be doubted even if it cannot be documented with much precision.¹² The market seems in other words to play a significant role in the economy. The state could not do without it. In this connection we should note the growing number of studies that emphasise the small extent of the state apparatus, the very limited importance of state redistributive activities, and the corresponding need to up-grade the importance of the market and the private economy. These have adopted the taxes-and-trade mechanism as one factor among others that worked to promote the formation of large markets and their integration on an empire wide scale. Here we also find the notion that the *Pax Romana*, the common currency, standardised measures, and more orderly administration all worked to increase economic efficiency and growth. It has lately, even, been suggested that the economic integration of the empire probably could be seen as equal to that of the European market-system including the colonies around 1750.¹³

⁹ K. Hopkins has now conveniently restated his position in ‘Rome, Taxes, Rents and Trade’, *Kodai* 6/7 (1995/1996), 41-75.

¹⁰ M.I. Finley, *The Ancient Economy* (London 1985, 2nd ed.), 182-183. C. Whittaker, *Land, City and Trade in the Roman Empire* (Ashgate 1993), chapters 12 and 13, and Idem 1994 op. cit. (n. 7), D. Foraboschi, ‘Economie Plurali ed Interdipendenze’, *L'Italie D'Auguste à Diocletien*. Collection de l'École Française de Rome 198 (Rome 1994), 215-218.

¹¹ P. Brunt, ‘The Revenues of Rome’, *Journal of Roman Studies* 71 (1981), 161-172 and R.P. Duncan-Jones, *Structure and Scale in the Roman Economy* (Cambridge 1990), 30-48 and 187-198.

¹² K. Hopkins 1996, op. cit. (n. 9), 55-56. See also Duncan-Jones 1990 op. cit. (n. 11), 193-194.

¹³ Harris 1993, op. cit. (n. 8), 18-20. In addition to the other works cited in note 8 one could mention,

All good textbook liberalism. Yet, I am not convinced about the parallel to the early modern European world system. The Europeans, after all, fought endless wars during the 17th and 18th centuries, often motivated by trade, without preventing the formation of a highly integrated trading system. This calls for some clarification. During the middle ages the sugar consumed by Europe was produced in the Mediterranean area. But that was almost brought to a complete end when sugar-cultivation was moved, first to the plantations of the Atlantic islands and then to Brazil and the West Indies. Later the same happened to coffee, which was moved from Yemen to Java and the plantations of the new world, to say nothing of tea which was brought from China to India and Ceylon.¹⁴ These relocations of production of export crops happened as part of a commercially directed process where the economic geography of Europe and large tracts of the world was re-organised to fit the needs of a system based on a steadily deepening regional specialisation.¹⁵ The underlying principle received its classic expression in David Ricardo, the father of modern international trade theory, when he observed that foreign commerce and the resulting international division of labour ensured that each country would concentrate on¹⁶:

“producing those commodities for which by its situation, its climate, and its other natural and artificial advantages, it is adapted, and...exchanging them for the commodities of other countries...Under a system of perfectly free commerce, each country naturally devotes its capital and labour to such employments as are most beneficial to each. This pursuit of individual advantage is admirably connected with the universal

E. Lo Cascio, ‘The Roman Principate: The Impact of the Organization of the Empire on Production’, in Idem & D. Rathbone, eds., *Production and Public Powers* (Cambridge 2000), 77-85; J. Paterson, ‘Trade and Traders in the Roman World: scale, structure and organisation’, in H. Parkins & C. Smith, eds., *Trade, Traders and the Ancient City* (London 1998); and the Italian attempt to revive the ideas of Rostovtzeff headed by A. Carandini, for example in his *Schiavi in Italia* (Roma 1988).

¹⁴ N. Steensgaard, ‘The growth and composition of the long-distance trade of England and the Dutch Republic before 1750’, in J. Tracy, eds., *The Rise of Merchant Empires* (Cambridge 1990), 152 and N. Steensgaard, ‘Opdagelsesernes plads i verdenshistorien’, *Historisk Tidsskrift* 90 (1990), 221-246, especially 226-228.

¹⁵ Landes 1998, op. cit. (n. 3); J. Israel, *Dutch Primacy in World Trade 1585-1740* (Oxford 1989); C. A. Bayly, *Imperial Meridian* (Harlow/New York 1989); F. Braudel, *Civilisation and Capitalism*, especially vols. 2-3 (London/New York 1982-1984); E. Wolf, *Europe and the People without History* (Berkeley 1982) and I. Wallerstein, *The Modern World-System* (New York 1974) for some different approaches to this process.

¹⁶ D. Ricardo, *Principles of Political Economy and Taxation* (Harmondsworth 1971), 151-152.

good of the whole. By stimulating industry, rewarding ingenuity, and by using most efficaciously the peculiar powers bestowed by nature, it distributes labour most effectively and most economically: while, by increasing the general mass of productions, it diffuses general benefit, and binds together by one common tie of interest and intercourse, the universal society of nations throughout the civilized world. It is this principle which determines that wine shall be grown in France and Portugal, that corn shall be grown in America and Poland, and that hardware and other goods shall be manufactured in England.”

It is curious that such a model of interregional specialisation and market integration organised by economic competition continues to command the support of many ancient historians, in spite of repeated demonstrations of its inadequacy. For the empire seems to behave contrary to the expectations of the model. Interestingly it was the founder of the *concorrenza* paradigm, Rostovtzeff, who was the first to realise that it was difficult to make the patterns revealed by the *archaeological* data fit the notion of an economy organised as a conglomeration of interdependent markets.¹⁷ This is the problem, which we have come to know in the historiography as the so-called “crisis of Italy”. In the second century B.C. considerable quantities of Italian exports start to appear in the Mediterranean, especially in the Aegean and Gaul. To judge from archaeological finds, these exports seem primarily to have consisted of wine (carried in Dressel 1 and Lamboglia 2 amphorae) and fine pottery (the black glazed Campanian, followed by the red glossed Arretine terra sigillata) riding ‘piggy back’ on the shipments of wine. In the final phase of the Republic with the conquest of Gaul, the consolidation of empire in the Eastern Mediterranean and the coming of Augustus, the level of activity drops significantly. In the West, for instance, the wine exports from Italy to Gaul experience a steep fall and then peter off during the 1st century A.D. In the same period, Gaul gradually established a domestic production of the former imports of wine and pottery and eventually even began to send substantial consignments of wine to Rome.¹⁸

¹⁷ M.I. Rostovtzeff, *The Social and Economic History of the Roman Empire* (Oxford 1957), 172-199 who talked about the decentralisation and provincialisation of production.

¹⁸ The archaeological data are collected by C. Panella, ‘La Distribuzione e i mercati’, in A. Giardina & A. Schiavone, eds., *Società romana e produzione schiavistica II* (Roma 1981), 55-80; ‘Merci e scambi nel Mediterraneo tardoantico’, in *Storia di Roma III* 2 (1993 Turin), 613-697 and C. Panella &

Thus paradoxically with the inclusion of Gaul in the empire, regional specialisation and economic integration seems to suffer.¹⁹ Rather than the expected increased regional division of labour where the province would have specialised in a different product (say ham or iron tools) it could use in exchange for Italian wine, Roman exports collapse and the province becomes self-sufficient in its former imports. According to modern economic perceptions this apparent decreasing division of labour ought to be a sign of economic crisis and decline. And this, too, is what Rostovtzeff and his modern Italian followers have suggested. The fall in Italian exports has been seen as an indication of a growing economic crisis, as first Italy and then the empire entered a downward spiral of declining division of labour and diminishing economic integration.²⁰ This is unconvincing for several reasons. Firstly, however one estimates the condition of Italy from the second century A.D. onwards, a hotly debated issue, the peninsula seems to have been in perfect economic health at least throughout the first century A.D. and probably for much longer. The changes that do occur are better described as transformations rather than decline.²¹

Secondly, to be forced to describe the incorporation of Gaul in the empire as a process of decreasing economic integration simply seems to miss most of what is going on and to grossly overestimate the economic effects of the Italian wine exports. They were not the result of a deep economic interdependence between the two regions. On the contrary, they seem to have been the result of a very restricted set of circumstances, mostly depending on a very low degree of integration between the two areas. During

A.Tchernia, 'Produits agricoles transportés en amphores: l'huile et surtout le vin', in *L'Italie D'Auguste À Dioclétien*. Collection de l'École Française de Rome 198 (Rome 1994), 145-165.

¹⁹ "Entspezialisierung" is even used by H. von Freyberg *Kapitalverkehr und Handel im römischen Kaiserreich (27 v. Chr.-235 n. Chr.)* (Freiburg im Breisgau 1989), 151-152 to describe the process in the terms of modern trade theory. G. Woolf, 'Imperialism, empire and the integration of the Roman economy', *World Archaeology* 23 (1992), 283-293 too argues for placing the culmination of economic integration in the first century B.C.

²⁰ Seminal works within this school of thought are Giardina & Schiavone 1981, op.cit. (n. 18) and Carandini 1988, op.cit. (n. 13). The interpretation seems to have acquired almost paradigmatic status in Italy. The idea of Italy as losing out in the competition on the "imperial world market" plays an important role even within consciously less modernising analyses such as A. Schiavone, *The End of the Past* (Cambridge MA 2000, Italian version 1996) and E. Lo Cascio's inspiring attempt to compromise, in 'Forme dell'economia imperiale', in A. Schiavone, ed., *Storia di Roma*, II 2 (Turin 1991), 313-365.

²¹ A. Tchernia, *Le Vin de l'Italie Romaine* (Rome 1986) is a devastating critique of the concorrenza-paradigm. See further J. Patterson, 'The Crisis of Italy: what crisis?', in *Papers of the British School at Rome* (1987) and the contributions of C. Whittaker and D. Vera in *L'Italie d'Auguste à Dioclétien*, op.cit. (n.10).

the age of expansion the demand for “barbarian” slaves and metal increased in Italy. With the more frequent contacts between Roman and Celtic civilisation the Gaulic nobility acquired a taste for wine, a product of the Mediterranean. In return for this exotic and luxurious product, Gaulic nobles seem generously to have supplied Roman merchants with slaves of Celtic origin and metals. After Gaul was made a province this traffic became unacceptable and came to a fairly abrupt end. Once the very particular conditions had gone the wine trade was doomed.²² At the same time, however, social and economic integration became more extensive and involved a greater volume of resources. Gaul may have stopped sending many slaves to Rome, instead it now had to pay a far more substantial imperial tribute and supply men for the troops of the Roman army.²³ At the same time, the province entered a phase of partial adoption of Roman institutions, material culture and productive strategies. Urbanisation increased and production both grew and became more diversified.²⁴ It simply does not make much sense to describe this process of inclusion and intensified contact spanning a much broader spectrum of activities as one of decreasing economic integration and specialisation. It is, in other words, difficult to capture the experience of Roman imperialism within the analytical framework of a commercially organised interregional division of labour. We need to free our understanding of the relationship between the Roman imperial system and the trading world from such modernising analogies. The task is to find a way of integrating the two phenomena, empire and market, more closely, an interpretation that allows us to understand the imperial economy as an independent socio-economic formation rather than a weak and ultimately failed imitation of early modern Europe.

The Political Economy of Empires

Weber provided an important clue when he observed that the Ottoman empire lacked some characteristic features of the contemporary capitalism in

²² Tchernia 1986, op. cit. (n. 21), especially 169-193.

²³ A theme running through Tacitus's description of the Gallic rebellion at the beginning of Vespasian's reign is the joint dissatisfaction with both tribute and army levies, e.g. Tacitus, *Historiae* 4.26 and 71.

²⁴ G. Woolf, 'Regional productions in early Roman Gaul', D.J. Mattingly & J. Salmon, eds., *Economies beyond Agriculture in the Classical World* (London 2001), 49-65 and Idem, *Becoming Roman* (Cambridge 1998) for the Romanisation of Gaul.

Europe, precisely because it had been able to build on what was left of the complex money-economy of the Greco-Roman world. The European states, on the other hand, had had to develop from the much less commercialised economy of the early middle ages. The link between extensive trade and capitalist markets is far from straightforward.²⁵ What is missing from the argument is institutions. At some stage during the middle ages the European states came increasingly to depend on forging close alliances with commercial groups. Consequently they began to support the interests of merchants and invest them with greater powers. In the early modern period this had crystallised into an arsenal of mercantilist strategies for promoting the interests of national commerce. These were designed, for instance, to ensure the continued dependence of the economy in newly acquired colonies on trade with the mother country and thus create and preserve an “international” division of labour.²⁶ As we saw in the case of Gaul, this does not seem to have been a major priority of Roman imperialism. Indeed, it was this apparent lack of concern with the promotion of trade that has prompted European sociologists to heap so much scorn on the Roman and other tributary empires over the last centuries.²⁷ The empires simply seemed to defy their notions of efficient statecraft. They had become a foreign country. One could not learn much about the principles of modern trade by studying the examples of colonialism offered by the Greco-Roman world, as Montesquieu remarked.²⁸

Behind the incomprehension and disapproval of the imperial performance lies one essential but often neglected fact. If the tributary empires did not promote the interests of commerce in accordance with modern doctrines it was less a question of a direct failure than a matter of not having any strong reasons for doing so. The empires simply did not depend on income generated from trade to anything near the same extent as the burgeoning European nation-states in the 17th century and later.²⁹ Their

²⁵ M. Weber, *Wirtschaft und Gesellschaft* (Tübingen 1972), 630; see further 640-643.

²⁶ Apart from the works already cited above J. de Vries, *Economy of Europe in the Age of Crisis 1600-1750* (Cambridge 1976) offers a convenient and lucid summary of this process. See also T. Brady Jr. ‘The Rise of Merchant Empires, 1400-1700’, in J. Tracy, ed., *The Political Economy of Merchant Empires* (Cambridge 1991), 117-160 and W. McNeill, *The Pursuit of Power* (Chicago 1982).

²⁷ K. Pomeranz, *The Great Divergence* (Princeton 2000), 20-21 and 245-251 offers a parallel example from late imperial China of economic development in the peripheries making imports from the old core area redundant.

²⁸ Montesquieu, *L'esprit des lois*, book 21, chapter 21.

²⁹ E.g. M. Pearson, ‘Merchants and States’, in J. Tracy, ed., *The Political Economy of Merchant Empires* (Cambridge 1991), 41-116 and C. Wickham, ‘The Uniqueness of the East’, *Journal of Peasant Studies* 12 (1985), 167-197. On the absence of mercantilism in Rome, J. Andreau, ‘La cité

political economy was based on a different constellation of social forces. Traditionally agricultural production has provided the large tributary empires of history with their main income.³⁰ It is on the basis of this fundamental principle that any attempt to examine the particular nature of the relationship between tributary system, the economy and the market must proceed. This puts taxation or surplus extraction at the centre of our concerns. Therefore, I would like to take a closer look on the taxes-and-trade model and try to tease out some implications, which are generally overlooked or at least little commented on. It has become customary to stress the surprisingly small share of total production that the Roman state was able to command. Looking at state expenses tells us that it would probably have been in the area of 5-7 % of gross production. Some would be inclined to go even lower but this leaves us with the analytical problem of the near absence of the state in the total economy.³¹

Historians of Mughal India struggle with the opposite problem. The Mughal empire was a large and powerful state based on the floodplains of Northern India from the 16th to the 18th century (fig. 1).³² For many years it

romaine dans ses rapports à l'échange et au monde de l'échange', in J. Andreau, P. Briant, R. Descat, et al., eds., *Économie Antique. Les échanges dans l'antiquité: le rôle de L'Etat* (Saint-Bertrand-de-Comminges 1994). Further, for the odd Scandinavian reader, P. Bang, et al., eds., *Agrarimperier Mellem Marked og Tribut*. Den Jyske Historiker 86/87 (1999).

³⁰ Occasionally it is suggested that taxes from trade might have been of crucial importance to the Roman state. That is highly unlikely for an empire the size of Rome. The story told by Tacitus in *Annales* 13.52 about the wish of Nero to abolish the collection of *portoria* offers confirmation of the dominance of land taxes. First of all, the very fact that the emperor could seriously contemplate such an action indicates that customs cannot have been the primary source of revenue. Secondly, Nero's senatorial advisers reject the proposal because it would jeopardise the empire by, and this is crucial, creating a demand for the abolition of land taxes as well. Apparently *portoria* were not in itself sufficiently important to warrant such an argument (C. Nicolet, *Rendre à César* [Paris 1988], 203 f. misses this point completely and argues the opposite).

³¹ Hopkins 1995/1996, op. cit. (n. 9) opts for 5-7%. Lo Cascio 2000, op. cit. (n. 13), following R. Goldsmith, *Pre-Modern Financial Systems: A Historical Comparative Study* (Cambridge 1987), 48-51, goes as low as 3-5% of GDP. But that seems improbably pessimistic and does not fit the data we have on tax extraction either. In Egypt alone, the Roman state was able to get perhaps sometimes up to a fifth of GDP, cf. R.P. Duncan-Jones, *Money and Government in the Roman Empire* (Cambridge 1994), chapter 4. Even allowing for the fact that Egypt was taxed above the average, it still seems unlikely that the Roman state should have been so massively less successful in the remaining provinces with official tax rates ranging between 10-20% that it was unable on average to get more than a petty 2-3% of their GDP.

³² For some general treatments J. F. Richards, *The Mughal Empire* (Cambridge 1993); A. Hintze, *The Mughal Empire and Its Decline: an interpretation of the sources of social power* (Ashgate 1997); M. Alam & S. Subrahmanyam, *The Mughal State 1526-1750* (Oxford 1998); I. Habib, *The Agrarian System of Mughal India* (Oxford 1999, 2nd ed); C. A. Bayly, *Rulers, Townsmen and Bazaars*, (Cambridge 1983) and I. Habib & T. Raychaudhuri, *The Cambridge Economic History of India I: c. 1200-1750* (Cambridge 1982).

Figure 1. The Mughal Empire. Map taken from J.F.Richards, *The Mughal Empire*. The New Cambridge History of India, vol 1, 5 (Cambridge 1993)

was seen as the quintessential leviathan, a degenerate despotism and a terrifying bureaucratic system, plundering and totally dominating its wretched subjects. During the last decades, however, this image has gradually given way to a more realistic assessment of its capacity. Scholars are now much more aware of the narrow limits on its reach and policy forming capacities. Like the Roman empire it can be described as a patrimonial-bureaucratic system.³³ This means that the state was based on a large imperial household, the army and an imperial aristocracy to fill important positions within the system. Bureaucratic features, on the other hand, were not strongly developed. The mechanisms governing the administrative and military system, for example, depended more on patronage connections to the emperor than bureaucratic principles such as promotion on merit, clearly defined lines of command and spheres of authority. For our present concerns, the most interesting thing is that the Mughal imperial formation provides an example of the taxes-and-trade cycle in action. The so-called forced commercialisation thesis is generally accepted as the governing mechanism of the imperial economy. When the spending power of the imperial centre declined in the 18th century the ability of Bengal to pay its taxes was severely curtailed because it could not sell its cotton cloths to the capital anymore and in that way earn back its tax money.³⁴ In this case, however, the state claimed, notionally at least, around one third of total production. Some consider this a low estimate and opt for a higher figure closer to one half. But this would entail the confiscation of the total agricultural surplus. That is unlikely, not to say impossible.³⁵

Romans and Mughals compared - Tribute extraction and the disposable surplus

Two things can be brought to bear on the Roman case. First, 5-7% of gross production is a misleading measure of the impact of the Roman state. The limits set on the scale of activities in a pre-industrial economy are much narrower than we are accustomed to thinking of today. It would have been

³³ S. Blake, 'The Patrimonial-Bureaucratic Empire of the Mughals', *Journal of Asian Studies* 39 (1979), 77-94 and M. Alam & S. Subrahmanyam, 'Witnessing Transition: Views on the End of the Akbari Dispensation', in K. Panikkar, T. Byres & U. Patnaik, eds., *The Making of History. Essays presented to Irfan Habib* (New Delhi 2000), 104-140. For the Roman empire as a patrimonial-bureaucratic entity see R.P. Saller, *Personal Patronage in the early empire* (Cambridge 1982) and Garnsey & Humphreys 2001, op. cit. (n. 1), chapter 3.

³⁴ Bayly 1983, op. cit. (n. 32), 63-65.

³⁵ Richards 1993, op. cit. (n.32), chapter 4 for a summary of the details. Habib 1999, op. cit. (n.32), 230- 236 for the more optimistic view.

impossible to collect 75% of GDP as the Danish welfare state does today without causing economic havoc and widespread suffering. Agriculture on the floodplains of Northern India may be a little more productive than in the Mediterranean. Still, it provides us with a rough idea of the space we are operating within. Not much more than half of total production, and often less, would have been available for extraction in the first place. The rest was already spoken for. It was required to maintain the livelihoods of the peasants and their households without whom there would be no economy to speak of (See fig. 2). *Therefore a more realistic idea of the scale of state*

*expenditure can only be gained from seeing it in relation to the total disposable surplus.*³⁶

The implications of this can be brought out with greater clarity by attempting a simple quantitative model of the Roman economy. That is far less hazardous than it sounds. Only industrialisation has managed to create enormous differences in the productive capacities between complex societies. In the agrarian world of *l'ancien régime* we do find local and regional variations in wealth. But they fall within a relatively narrow range. And what is more important, the differences tend to be ironed out when very large areas such as the Mediterranean, India, or China are compared.³⁷ It follows that estimates on a global scale, such as are relevant to the Roman empire, operate within a fairly manageable margin of uncertainty, say 30 or 40%. This is acceptable when we remember – and this bears emphasis – that we are not setting out to produce exact figures. Rather, our quantitative model is a heuristic device, which will allow us to spell out our qualitative

³⁶ E. Wolf, *Peasants* (Englewood Cliffs 1966), chapters 1 and 2, remains one of clearest discussions of the surplus in peasant economies.

³⁷ See, for instance, P. Bairoch, *Economies and World History. Myths and Paradoxes* (New York 1993), 101-110 and Pomeranz 2000, op. cit. (n. 27), chapters 1 and 3, especially.

insights with greater clarity, to provide us with a rough idea of the order of magnitude, the sort of rules that govern the game.

I have taken my lead from Hopkins' latest estimates of total production published in *Kodai* 1996.³⁸ The calculations have been summarised in table 1. The all important component in an estimate of the Roman as in any agrarian economy is the size of the population. Due to the relatively modest differences in productivity the number of producers is going to be the single most important determinant of the size of the economy. Of course, there are no proper population statistics from the empire. But when we put the little information we have together with better-known population figures from later periods in the pre-industrial Mediterranean, a peak of approximately 60 million people in the middle of the second century A.D. just before the arrival of the Antonine plague is unlikely to be wide off the mark.³⁹ At the same time, from the work of development economists, we have a fairly good idea of the minimal material requirements of populations living in agricultural societies. On average, a person needs to consume 250 kg wheat equivalent per year to subsist at an absolute bare minimum level.⁴⁰ Within this figure food accounts for around four fifths, the rest is provision for a little clothing, firewood, etc. The notion of wheat equivalents may require a little further explanation. Ideally, of course, we would like to have statistics of all the different products that people consumed apart from wheat in order to determine their relative significance in the economy. In the absence of that wheat equivalents are a useful fallback. Before industrialisation food grains play a dominant role in the economy of the vast majority. As a consequence, the value of the rest of production tends to stand in a fairly close relationship to the price of grain. In times of famine, for instance, the value of non-

³⁸ The following builds heavily on Hopkins 1995/1996 op. cit. (n. 9), 44-48. Hopkins employs several strategies to argue for the plausibility of his estimate. Most of them go to the internal consistency of his model. In general I find his arguments compelling and refer to them. Rather than repeating them here, though, I have chosen to add a number of additional observations to further support his case.

³⁹ B. Frier, 'Demography', Chapter 27 in *CAH² XI* (Cambridge 2000), 787-816. W. Scheidel, *Debating Roman Demography* (Leiden 2000), 63-64 argues, without strong reasons, it seems to me, for a peak of 80 million. F. Braudel, *The Mediterranean and the Mediterranean World in the Age of Philip II I* (London 1972), 394-398 estimated the Mediterranean population to have reached a new peak of 60-70 million around 1600. Considering that historical demographers normally operate with a weakly rising secular trend underneath the ebbs and flows of population size through human history, it seems most probable to opt for the 60 million figure. See M. Livi-Bacci, *A Concise History of World Population* (Oxford 1997, 2nd ed.), chapter 1 for the secular trend in global population figures.

⁴⁰ C. Clark & M. Haswell, *The Economics of Subsistence Agriculture* (London 1970), 54-60 for minimum consumption needs.

Table 1

*Estimate of disposable surplus, state impact
and interregional trade in the 2nd century AD*

1. The population of the empire in the mid second century AD is set at **60 million**.
2. Minimum subsistence is set at **250 kg** wheat equivalent per person per year.
3. Agriculture was relatively low yielding. A reasonable estimate puts average yield at **4 × seed**. This means that 25% of total minimum produce would have to be put aside for next year's crop.
4. **Minimum GDP will then be:**

$$60 \text{ mill} \times (250 \text{ kg subsistence} + 83.33 \text{ kg seed}) = 20 \text{ mill tonnes wheat equivalent}$$
5. A large part of the population will have had to live close to this level. But cities were normally privileged, some were also very rich and not all peasants were equally poor. Production of manufactured goods and services by the 10-20 % not employed with primary agricultural production also needs to be added. It seems reasonable with Hopkins to increase total production by half in order to get to **actual GDP: 20 mill tonnes × 1.5 = 30 mill tonnes wheat equivalent**.
6. The average price of wheat is set to **3 HS per modius (6.55 kg)**. To judge from prices in Egypt this may be a bit on the high side. But since this operates against the point I am trying to make I have chosen not to alter.
7. This makes **GDP: 30 mill tonnes × HS 3/modius = 13.700 mill HS**
8. From other pre-industrial societies we can operate with a proportion of 10-20% living in cities and 80% working the land to feed the remaining 20 %. The total disposable surplus can then be defined as GDP minus minimum subsistence for 80% and seed required to produce subsistence for 60 mill. That is unrealistically generous but by increasing the surplus which actually entered circulation outside the peasant household and its village network I work against the point I am attempting to make.
9. In numbers this makes our estimate of the **total disposable surplus: 13,700 ÷ (48 mill × 250 kg + 60 mill × 83.33 kg) × HS 3/modius = HS 6000 mill (in round figures) or 40-45 % of GDP**.
10. Following Duncan-Jones state expenditure in the middle of the second century AD is set at approximately HS 900 mill. Direct state expenditure then constitutes **15 % of the disposable surplus**.
11. To this should be added the imperial elite. 600 senators with an annual income (not to be mistaken for the census requirement) of around 1 mill HS each and a similar number of knights, estimated at half the income of senators. **The income of the imperial elite then can reasonably be assumed to be in the same range as that of the state, 900 mill HS**. In other words, the central aristocracy can account for another **15 % of the disposable surplus**.
12. 10 % of GDP, entering inter-regional trade (inter-town), works out at 23 % of disposable surplus.
 20% of GDP, entering inter-regional trade (inter-town), works out at 46 % of disposable surplus. (add another 10% and we would reach 69 % of surplus which would be totally unrealistic).

To conclude, any understanding of economic integration in the empire must needs take the imperial tribute extraction as its point of departure. It is able to account for a very substantial part of all inter-regional flows of resources, be they in form of trade or redistribution.

essentials drops sharply because people need to draw heavily on their

resources to procure high priced cereals or their substitutes.⁴¹ Documents from Roman Egypt show the mutual relationship of grain and other prices in greater detail. They reveal a broad tendency in the price of wine to behave contrary to developments in the grain market. When prices were at a high level in the latter, wine would often tend to be as low as people now had less money to spend on everyday “luxuries”.⁴² Therefore it makes good sense initially to express an agrarian economy in terms of wheat equivalents.

By combining population size with minimum subsistence requirements we get a rough minimum estimate of the Roman economy. However, it could not have functioned at this level. Essentially two factors have been left out which need to be added to the calculation. First, it takes seed to grow grain. If the economy is going to reproduce itself we also need to add this to our calculation. Grain yields vary according to climate, region and soil. But on a global scale the most probable estimate is that yield figures will have averaged approximately four times seed. A much higher rate than this is not realistic. It would imply far too high a productivity and it would force us to accept a level of urbanisation that is not normally reached before industrialisation.⁴³ Moreover, as Hopkins observes, it would be difficult to understand why Italy needed to import grain from the provinces to feed Rome. Secondly, we also know that the Roman economy as a whole did not function at minimum subsistence, though a considerable number of people probably had to exist at this level. Otherwise there would have been no imperial palaces, temples, theatres, baths, aqueducts, luxuries at aristocratic dinner tables, nor most other products of Greco-Roman material civilisation. Therefore we should probably increase our minimum estimate of the Roman economy by approximately half in order to come to the real Roman GDP in

⁴¹ P. Garnsey, *Famine and Food-Supply in the Graeco-Roman World* (Cambridge 1988), 3-7 citing the chronicle of Joshua the Stylite on a famine in late Roman Edessa. For comparative confirmation of the rough relationship between prices in food and non-essentials, see K. Chatterjee, *Merchants, Politics and Society in Early Modern India. Bihar 1733-1820* (Leiden 1996), 54: “Grain being the staple article of consumption, its price bore a distinct relation to prices of other goods and commodities supplied to markets.”

⁴² D. Rathbone, ‘Prices and Price Formation in Roman Egypt’, in *Économie Antique. Prix et formation des prix dans les économies antiques* (Saint-Bertrand-de-Comminges 1997), 183-244 on page 213 including fig. 7. In general about the sensitivity of wine to grain prices, Tchernia 1986, op cit. (n. 21), 188.

⁴³ In simple terms at 3:1 a society will experience difficulties reproducing itself; at 5:1 perhaps up to 40% can live in cities. Most of the pre-industrial history of complex societies were somewhere between these limits, cf. J. de Vries, *European Urbanization 1500-1800* (London 1984), 242-243. Within this field 4:1 seems the most realistic. It would allow up to 20% urbanization. We cannot go much higher than this.

the second century A.D.⁴⁴ Finally, we need to express this in Roman monetary terms to enable comparison with state expenditure. Again detailed price series covering markets across the empire are lacking. But there is sufficient information to form an idea of the general level of wheat prices. In Egypt prices seem to hover close to 2 HS per *modius*. Most grain will have been marketed near this level. In larger cities the price would generally have been higher. Hence an average of 3 HS per *modius* has been adopted.⁴⁵ To sum up, our approximate estimate of Roman GDP in the second century A.D. is based on 5 components:

(population [= 60 million] × minimum subsistence [= 250 kg wheat equivalent per person] + seed at a yield ratio 4:1 + 50% to account for activities above subsistence) × 3 HS/*modius* (6.55 kg wheat per *modius*).

All in all this gives a Roman gross domestic product of some 13.700 million HS. Is that realistic? Expressed as per capita income it amounts to 229 HS per person. A couple of decades ago an economist suggested a per capita income of some 380 HS per person for the first century A.D.⁴⁶ This is problematic; adjusting for differences in wage levels between city and countryside and between men and women, it would imply that the average male labourer earned more than the pay of a legionary in the first century and only a little less in the second century. This is implausible. The legionaries were a powerful and privileged group in Roman society. We would expect them to do a lot better than the average adult male labourer. Consequently, per capita income should be comfortably below 380 HS. Indeed, if instead the information preserved about the wages of Roman labourers is used, the result comes out with a per capita income a little below ours.⁴⁷ It looks like we have got the rough dimensions right.

⁴⁴ This gives a total per capita production of 500 kg wheat equivalent or net of seed 417 kg. In 1960 the traditional agricultural and still dominant sector of the Indian economy had a per capita production of 382 kg wheat equivalent net of seed, confirming that the dimensions of Hopkins' estimate are probable, cf. Clark & Haswell 1970, op. cit. (n. 40), 78.

⁴⁵ Rathbone 1997, op. cit. (n. 42) now provides the most up to date list of wheat prices in 1st-2nd century Egypt. Other material can conveniently be found in G. Rickman, *The Corn Supply of Ancient Rome* (Oxford 1980), 143-153 and R.P. Duncan-Jones, *Economy of the Roman Empire* (2nd ed.; Cambridge 1982).

⁴⁶ Goldsmith 1987, op. cit. (n. 31), 35 followed by Frier 2000, op. cit. (n. 39), 812.

⁴⁷ I am much obliged to Richard Saller who has presented his estimate to me in correspondence. Using Duncan Jones 1982, op. cit. (n. 45), 54 he sets urban male labour at 3HS a day and rural at 1.5. He sets population at 60 million with half of it actually working (250 days per year), 20% living in cities and female income at half the rate of male, a practice that is attested from antiquity. Finally he assumes

We can now use our GDP as the basis of an attempt to quantify the disposable surplus, the really crucial element in the Roman economy. In this exercise it is important to reach a generous estimate, more likely to be an overestimate than the opposite, since this will work against the point I am trying to make. Therefore I have tried to include some analytical buffers in defining the surplus which to some extent may help to nullify the damage done to our conclusions if, in spite of our efforts, we have underestimated the Roman GDP. Hence I generously and unrealistically allow an urban population without any engagement in agriculture of 20% for the empire. This means that only 80% were occupied in agricultural production. All production in Roman society above the bare minimum requirements of these 80% and seed necessary for producing the minimum GDP, I define as the disposable surplus. This is, in fact, quite generous. It does not even allow for peasants having to feed oxen to plough their fields. The total disposable surplus will then be:

GDP – (80% of 60 mill × 250 kg wheat equivalent + seed) × 3 HS/modius = 6000 million HS (rounded up).

Basically this means that only about 45% of the economy would have been available for taxation, market circulation and so on. Recently Duncan-Jones has produced a rather conservative estimate of Roman state expenditure in the 2nd century A.D. at around 900 million HS.⁴⁸ Combining the two estimates enables us to see *that the net expenditure of the imperial system (mainly the imperial household, bread and circuses and the army) probably took up at least 15% of the disposable surplus.*⁴⁹ This is quite substantial -

that the sex distribution of the population was 50:50. This works out at HS 10, 000 million. To this he adds 20% for elite income and 7-8 % for state income. Final result app. HS 13, 000 million or HS 217 per capita. If we insert Goldsmith's estimate of HS 380 in the equation we see, since only half of the population worked, that average working income would be twice the base figure, that is 760. If male income is twice as much as female income, it would be HS 1013. For comparison the annual pay of a legionary was HS 900 in the first century and HS 1200 in the second century (Duncan-Jones 1982, op. cit. [n. 45], 10).

⁴⁸ R.P. Duncan-Jones, *Money and Government in the Roman Empire* (Cambridge 1994), 45.

⁴⁹ A simple calculation may lend further support to the credibility of this figure. Combined state expenditure probably supported at least a million persons (half the population in Rome and a sizeable army and its civilian train of dependants). However, these were among the most expensive surplus consumers. Maintaining a person in Rome was very costly compared to other areas. Legionaries, too, were a very demanding lot. It seems reasonable to conclude that the two groups would have required resources at twice the average rate of surplus consumers. With 20% outside agriculture there would

especially when we remember, as pointed out by Hopkins, that the state often spent its tax-income at some remove from where it had been collected as taxes. If we hypothesise that 10 % of total production (GDP) entered the interregional circulation of resources, close to two thirds could be accounted for by the flows of money, goods and redistribution in kind caused by net tribute extraction. Suddenly, the imperial state does not seem such a marginal actor in the economy.

Romans and Mughals compared: tribute extraction and elite building

This brings us back to the second lesson we can draw from our Mughal comparison; it is expensive to have taxes collected. Even though the position of the Roman state in the imperial economy has perhaps been underestimated lately, on the face of it there is still a stark contrast between the intake of the two empires. Comparing the Mughal and Roman tax rates, flatly as it were, discloses a surprising discrepancy when their close organisational affinities are kept in mind. Could these two patrimonial-bureaucratic systems really have experienced such enormously differing success rates? However, we are comparing net expenditure with gross income. From the Mughal intake of 1/3 (probably still an overestimate) very substantial amounts went in the form of revenue allocations to pay for the nobility, the so-called *mansabdari* (equal to the senatorial and equestrian orders, broadly speaking), and for local elite groups, the so-called *zamindari* and village headmen, scribes etc. (similar to the *ordo decurionum*, and the village officials documented e.g. in Roman Egypt). Only by forming a strong and costly alliance with the imperial and local elites was the great Mughal able to govern and have his taxes collected. Thus tribute extraction gave rise to a process of increasing social stratification as various elite strata saw their position strengthened through a greater accumulation and concentration of wealth under their control.⁵⁰

This is a process too well known from Roman historiography to require much comment. The Roman state, too, took good care of its different

have been 12 million surplus consumers in the empire of 60 million. Roman state expenditure would then be 2/12 or very close to 15%.

⁵⁰ Richards 1993, op. cit. (n. 32), chapters 3 and 4; Habib 1999, op. cit. (n. 32), 159-160 + chapters 5-7; Hintze 1997, op. cit. (n. 32), e.g. chapters 4 and 9; M. Alam, *The Crisis of Empire in Mughal North India* (Delhi 1986); Bayly 1983, op. cit. (n.32) and finally A. J. Qaisar, 'Distribution of the Revenue Resources of the Mughal Empire Among the Nobility', in *Proceedings of the Twenty-Seventh Session of the Indian History Congress* (Aligarh 1967), 237-243 for a poignant demonstration of just how much of the imperial revenue was channelled into the pockets of the imperial elite.

aristocratic groups.⁵¹ As Dio Cassius had Agrippa and Maecenas observe each in their own way in a set of speeches giving advice to Augustus about how to organise the imperial government, the emperor could not rule without strong and powerful allies. Indeed, he should actively promote “the best men” and make sure that the imperial elite also received its share of the resources generated by the empire.⁵² Right from the beginning of expansion senators and knights had been able to draw substantial profits from the administration of the Roman hegemony. The result was an accumulation of wealth in the hands of the Roman elite on a steadily increasing scale and gradually encompassing properties scattered all across the empire. So far as we can see, Roman aristocrats of the high empire were significantly richer than their late republican predecessors had been, as they had again been considerably more well off than their 2nd century B.C. ancestors.⁵³ During the principate this process was further fuelled by a stronger integration of provincial property into the existing stock of estates controlled by the imperial elite. At the local level, Roman government depended on the elites of the numerous cities around the empire. They were left in control of the distribution and collection of imperial taxes. This was a very powerful tool. Not only would they normally have been able to ensure that they were less heavily taxed than the rest of the city’s property holders. Often they would also have been able to profit further from shifting the burden on to weaker shoulders, for example, by extending credit to people short of money to pay the taxes. When some of those inevitably failed to repay the loan, their property passed to members of the local elite. In this and similar ways, local elites supported by Roman rule in a mutually beneficial partnership effected a considerable redistribution of local property in their own favour.⁵⁴ At the

⁵¹ The literature is vast. A few general references must suffice. A. H. M. Jones, *The Greek City from Alexander to Justinian* (Oxford 1940), Chapter 8; J.H. Oliver, ‘The Ruling Power’, *Transactions of the American Philosophical Society* 43 (1953); P. A. Brunt, *Roman Imperial Themes* (Oxford 1990), chapter 12; P. Garnsey & R.P. Saller, *The Roman Empire* (London 1987), chapter 2; P. Garnsey 1988 op. cit. (n. 41), chapter 15; F. Jacques & J. Scheid, *Rome et l’intégration de l’empire* (Paris 1990), chapters 5, 6 and 7, part 4.

⁵² Dio Cassius, 52.2-13 and 52.19.1-3. Saller 1982, op. cit. (n 33), for a discussion of the importance of imperial patronage for the imperial elite.

⁵³ K. Hopkins, ‘Rents, Taxes and the City of Rome’, in E. Lo Cascio, ed., *Mercati Permanenti e Mercati Periodici nel Mondo Romano* (Bari 2000), 255 for a conveniently short statement of the gradual accumulation of aristocratic riches.

⁵⁴ The process is well described, for instance by Libanius, *Oratio* 48, 37-41 (It does little that Libanius is a late source). See also, for example, Cicero, *In Verrem* 2.2.138; Plutarch, *Praecepta rei publicae gerendae* 815a where the greed of the good and the great is said to drive the lesser people from the towns; the discussion of *munera* in *Digesta*, e. g. 50.4.3.15 and some very instructive letters preserved in line 68-71 and 145-152 of *P. Panop.* 2. For some case studies of how Roman government built up

apex of this process, we find some rising to become magnates on a provincial scale and eventually being incorporated into the imperial elite as it needed replenishment, thus taking a large part of their expenditure from the provinces to the capital.⁵⁵

To sum up, as in the Mughal empire, tribute extraction was accompanied by a substantial build up of wealth controlled by aristocratic groups located at various levels in the imperial system. This needs to be added to the bill if we are to reach a proper assessment of the economic impact of the Roman state. At least for the central aristocratic groups, senate and knights in the imperial administration, it is possible to get an idea of how this works out in our quantitative model of the imperial economy (table 1, section 11). Based on Pliny's letters, Duncan-Jones has estimated the annual income (not the census requirement) of a middling senator at approximately 1 million HS in the early second century A.D. Some senatorial households would have experienced much greater incomes. On the other hand, some also had problems even about meeting the economic requirements of a political career.⁵⁶ Hence it seems reasonable to adopt the figure based on Pliny's experience as an average annual income for the 600 or so senators, even though we might actually be underestimating the wealth of the senate then.⁵⁷ The contours of the equestrian part of the central imperial elite are more hazy. But to judge from the growing number of equestrian procuratorships in the imperial administration (127 are attested by the reign of Marcus Aurelius, 174 at the death of Severus) it would have required a

elites in conquered areas see for example P. Ørsted, *Roman Imperial Economy and Romanization* (Copenhagen 1986); M. Millett, *The Romanization of Britain* (Cambridge 1991); F. Quass, *Die Honoratiorenschicht in den Städten des griechischen Ostens* (Stuttgart 1993) and Woolf 1998, op. cit. (n. 24).

⁵⁵ The incorporation of provincial aristocrats in the imperial elite can be followed in most detail for the senate. For a recent convenient synthesis, see S. Roda, 'Il Senato nell' alto impero Romano' in *Il Senato nella Storia. Istituto poligrafico e zecca dello stato* (Rome 1998), 129-221. Chapter 3 in K. Hopkins, *Death and Renewal* (Cambridge 1983) is fundamental. On the equestrian leg of the imperial elite, there is still much of value in A. Stein *Der Römische Ritterstand* (Munich 1927). Fundamental is H.-G. Pflaum, *Les procureurs équestres sous le Haut-Empire romain* (Paris 1950). See also the more recent work of S. Demougin, *L'Ordre Équestre sous les Julio-Claudiens* (Rome 1988) and S. Demougin & H. Devijver, eds., *L'Ordre Équestre. Histoire d'une aristocratie* (Rome 1999). Saller 1982 op. cit. (n. 33), chapter 5 in particular for a detailed study of the patronage ties which paved the way for recruitment of provincial aristocrats to the imperial elite.

⁵⁶ F. Millar, *The Emperor in the Roman World* (London 1992, 2nd ed.), 297-299 for imperial gifts to senators in financial problems.

⁵⁷ Duncan-Jones 1982, op. cit. (n. 45), 21. A. Chastagnol, *Le sénat romain à l'époque impériale* (Paris 1992), chapter 10 is undoubtedly right in seeing this a conservative estimate for Pliny's time. For the following generations this is even more so, cf. Duncan-Jones's own comments.

group more or less equal in size to the senate to fill the available spaces.⁵⁸ The wealthiest and most powerful knights were clearly richer than many members of the senate. But this would not generally have been the rule, rather the opposite if the lower property qualification of this group is anything to go by. We might estimate the income of the equestrian members of the central imperial aristocracy at half that of the senate. In numbers this gives $600 \times 1 \text{ million HS} + 50\% = 900 \text{ million HS}$ or another 15% of the disposable surplus.

This makes the empire look a lot more like the Mughal, especially if we take into consideration that the Mughals' notional intake of 1/3 of production in reality would probably have been closer to one fourth or one fifth.⁵⁹ Then when we subtract the substantial part that went into the pockets of the local Indian aristocracies, the *zamindars*, the revenue structure of the two empires appears to be very similar or at least of the same order of magnitude. In both cases, the revenue of the central imperial system (emperor, army and central aristocracy) seems probably to have been within a range of 10-15% of GDP. This does not look impressive. But when we realise that this would have constituted close to one third of the disposable surplus in the Roman case (and it cannot have been wildly different in the Mughal case) it is clear that it could not easily have been much larger (fig. 3).⁶⁰

⁵⁸ Pflaum 1950, op. cit. (n. 50), 76-96 for the number of imperial procurators. Under Marcus Aurelius there were 160 senatorial posts in the imperial administration. This suggests that the number of knights engaged in the imperial service must have been of the same order of magnitude. See Whittaker 1993, op. cit. (n. 9), chapter 12, 60-62 for a similar estimate but with more detailed discussion of the problems. W. Eck, 'The Growth of Administrative Posts', *CAH*² XI, Chapters 5 and 6 (Cambridge 2000) for a recent treatment of the development in the imperial administrative system.

⁵⁹ The Mughal revenue intake is a thorny issue. But independently of how we assess this problem two things operate in favour of lowering towards one fourth or one fifth of GDP. The figure of one third is of agricultural production. To be strictly comparable to our Roman figure, it should be adjusted to take account of urban production and services which only contributed modestly to Mughal taxes. On top of this, many cash crops were only taxed at a rate of one fifth. Taken together these two factors go a long way to bring the Mughal tax figure within "our" range.

⁶⁰ R. Huang's seminal study of Ming taxation, *Taxation and Governmental Finance in Sixteenth – Century Ming China* (Cambridge 1974), 159-161 reached a similar conclusion about the very narrow limits on imperial taxation.

Tribute and Economic Integration: the market as surplus transformer

As already mentioned, the revenues of the imperial system (emperor, army and central aristocracy), were normally spent unevenly across the empires. In the Roman case it was to a very large extent consumed by emperor and elite in the capital and in the border regions where the army was stationed. This means that much of the revenue intake had to enter regional and interregional circulation in order to reach its point of expenditure. In table 1, section 12 I have tried to indicate the consequences of different proportions of GDP going outside its nearest marketing network, that is entering inter-city (state) resource flows. At 10% of GDP about 20-25% of the disposable surplus would be spoken for in this way. At 20% of GDP it would be 45-50%. Clearly this must be pushing against the maximum limit of what could have happened. Even though the consumer-city model has been hotly debated, few people would doubt that a very large section of the surplus was spent locally by the municipal aristocracies around the numerous ordinary cities of the empire. Data from both 18th and 19th century India and late imperial China, too, suggest that we can imagine the level of inter-city exchange to be within a range of 10 to 20% of GDP in the Roman empire.⁶¹ For our understanding of market exchange in the empire this has important implications. To begin with, it is difficult to identify the market as the

⁶¹ A. A. Yang, *Bazaar India* (Berkeley/ Los Angeles 1998), 223-224 lists a number of estimates from 18th and 19th century India. Of the agrarian surplus, about two thirds stayed within the area of production. The remaining third, or approximately 11 % of total agricultural production entered interregional circulation. To this should be added manufactures and other luxuries. This suggests a level of interregional trade of about 10-20% of GDP. D. Perkins, *Agricultural Development in China, 1368-1968* (Chicago 1969), 115-120 estimates total value of interregional trade in late imperial China at 15-20% of gross farm output. Expressed as a proportion of GDP (farm output + production and services in the cities) the figure will be a little lower, perhaps 10-15%.

dominant organising force of economic integration in the empire. At our imagined maximum level of inter-regional resource transfers, expenditure related to the imperial system would be able to account for two thirds. Even if we should have underestimated the economic surplus and interregional trade by say a third, this conclusion is not affected much; imperial expenditure would still take up more than 50% of our maximum level of inter-city transfers. It is no wonder that archaeologists again and again emphasise the different scale of activity between Greek and Roman history.⁶² Imperial tribute extraction must have dramatically changed or at least considerably modified the pre-existing pattern of economic circulation in the Mediterranean world. *If we want to speak of economic unity in the Roman empire we would do well to start by looking at tribute extraction and shared elite developments rather than a conglomeration of interconnected capitalist markets.* Consumption related to the profits of empire comes out as such a powerful stimulus that there cannot be much room for a development in interregional trade driven by regions specialising in one product and exchanging that with regions specialising in other products.⁶³

Taking a last glance at our Mughal comparison tells us that in such a system the role of market exchange and inter-regional trade is not first and foremost that of co-ordinating and organising the economy in an inter-regional division of labour. *Rather its task is the subordinate one of acting as transformer and conveyer of the extracted surplus.*⁶⁴ In that perspective, the dichotomy between market and state redistribution which has attracted so much attention over the years reveals itself to be a modernism. In the empire both activities, often in direct collaboration, aimed at turning the extracted tribute into flexible resources which could be disposed of in other contexts.⁶⁵

⁶² A recent example is the introduction in Mattingly & Salmon 2001, op.cit. (n.24), 8-11.

⁶³ Perkins 1969, op. cit. (n. 61), too noted how the nexus of imperial tax and aristocratic rents dominated over regional specialisation in long-distance trade in late imperial China. Lo Cascio 1991, op. cit. (n. 20), clearly sees how political exploitation "embedded" the market in the Roman empire but does not recognise how that renders the retention of the model of Rostovtzeff and Carandini highly problematical. Empire and a capitalist market organisation do not go together, as observed by Wallerstein 1974, op. cit. (n. 15). G. Woolf, 'World-systems analysis and the Roman empire', *Journal of Roman Archaeology* 3 (1990), 44-58 for a discussion of the world-empire terminology in relation to Roman history.

⁶⁴ This is the primary implication of Hopkins' taxes-and-trade model. See Bayly 1983, op. cit. (n.32), 63-73, for a description of the mechanism in late Mughal India. Schiavone 2000, op. cit. (n.20), chapter 3 makes the same point but in more general terms.

⁶⁵ L. De Salvo, *Economia privata e pubblici servizi nell'Impero Romano: i corpora naviculariorum* (Lietta 1992), 69-78 dealing with the grain supply of Rome, is a good example of how meaningless it is to discuss Roman trade exclusively in terms of free market or state redistribution. The boats carrying the grain arriving in Rome may have been free but their bottoms were to a very large extent dominated

Such a system of markets developing around political exploitation is what Weber referred to as political capitalism or even “Raub Kapitalismus”. It is a rough, violent and conflict ridden economic regime. Yet, contrary to received sociological and economic wisdom, it cannot be seen as wholly parasitic even if it does not include the alliance with commercial interests which characterised later European developments. In a critique of the sociological tradition on tributary empires, Michael Mann argues that the alliance between state and aristocracy was socially productive; it worked to increase surplus extraction and agricultural output and therefore allowed greater scope for the development of manufacture and trade.⁶⁶

Whether this translated into significant per capita growth is a different matter.⁶⁷ Many have suggested as much in recent years. Undoubtedly a heavier exploitative pressure will have worked towards increasing peasant production. But this is primarily done by forcing people to work harder, not by improving their efficiency. This sets fairly narrow limits to how much production can increase, especially because growth in economies dominated by agriculture is often achieved at the price of falling marginal returns on extra added labour.⁶⁸ Some of this may be offset by gains from making possible a greater division of labour brought about by increased urbanisation or economies of scale. We are, however, looking at marginal improvements here, such as the gradual growth in the carrying capacity of some amphorae types documented by archaeologists. The best African oil amphorae, for instance, allowed a 20% larger cargo of oil in the same shipping tonnage than the worst Spanish amphorae (the average gap is narrower). Thus on the very generous assumption that sea transport would have added 30% to the

by state owned shipments. Middleton 1983, op. cit. (n.7); Whittaker 1994, op. cit. (n. 7) and G. Jacobsen, *Primitiver Austausch oder freier Markt* (St. Katharinen 1995) have explored the nexus of market and redistribution more fully. C. Whittaker, ‘Trade and the Aristocracy in the Roman Empire’, *Opus* 4 (1988), 49-75 for a demonstration of how the aristocratic households in a similar manner mixed market and redistributive activities, even if the article puts emphasis too heavily on redistribution.

⁶⁶ M. Mann, *The Sources of Social Power* I (Cambridge 1986), 167-174 and chapter 9.

⁶⁷ P. Millett, ‘Productive to some purpose? The problem of ancient economic growth’, in Mattingly & Salmon 2001, op.cit. (n. 24), 17-48 for a recent discussion of the question of growth in the ancient economy, pointing to the problems in using modern conceptions.

⁶⁸ For this, see for example E. A. Wrigley, *Continuity, Chance and Change: The Character of the Industrial Revolution in England* (Cambridge 1988) who offers a powerful defence of the failure of early classical economics (the dismal science) to recognise the possibility of modern sustainable growth; agriculture based on organic technologies, such as still dominated the world of Smith and Malthus, cannot produce that. In the long run industrial technology is required. See further J. Lee, ‘Trade and the Economy in Pre-Industrial East Asia, c. 1500-1800’, *The Journal of Asian Studies* 58 (1999), 2-26.

price of oil sent to Rome from Spain or Africa, the improvement would have lowered the price with about 5%.⁶⁹ It is difficult to see how such measures could have raised productivity decisively across the empire.⁷⁰ At the same time, it seems probable that population rose, up until the Antonine plague. This will have put more marginal land, less fertile soil that is, into cultivation and worked towards lowering productivity and per capita income. Thus there is no strong reason to hypothesise a strong growth in per capita production under the high empire.

What has generally been absent from discussions of growth in the ancient economy is that increased productivity/per capita income may not be the best guide to economic activity in pre-industrial societies. With the arrival of the Black Death in Europe total production plummeted while per capita income rose as the sharp drop in population size made more and better land available to the individual peasant. The point is that as long as productivity remains relatively low, compared with industrial economies, the number of producers may be more decisive for the aggregate size of the economy than a modest increase in productivity.⁷¹ This, I would suggest, provides the crucial element in an explanation of economic developments in the Mediterranean under Roman hegemony. What really sets the imperial economy apart in ancient and pre-industrial European history are the vastly different aggregate dimensions of the total disposable surplus brought about by intensified extraction and the incorporation of a much wider area with a gradually growing population into the same tributary system. It was the ability to mobilise and command resources from a larger geographical area than both before and quite some time after that is the primary reason for the formation of larger markets, such as Rome, and the larger scale of production found for different types of fine ware, fired bricks, amphorae etc.

⁶⁹ The calculation is based on the table of carrying capacities of amphorae in Peacock & Williams 1986, op.cit. (n.7), 52. The worst recorded dressel 20 contained 39 l or 35.5 kg oil in 19.9 kg clay. For a cargo of 100 tonnes this gives 64 tonnes oil to 36 tonnes clay. The corresponding figures for the best African is 57 l or 52 kg oil in 14 kg clay. In a cargo of 100 tonnes this gives 79 tonnes oil to 21 tonnes clay. The oil contents have increased with a little more than 20%. If sea transport added around 30% to the price of oil (index 100), then total price would have fallen from 130 to 124 or around 5%. Admittedly we cannot know the exact price of transport. But comparing the price of ordinary oil (section 3) with transport costs (section 37) in Diocletian's Price Edict (Lauffer's ed.) suggests that transport added considerably less than 10%. Without attaching too much weight to this result, it still seems like 30 % is a very generous estimate.

⁷⁰ R.P. Saller, 'Framing the debate over growth in the ancient economy', in J. Manning & I. Morris, eds., *The ancient economy: evidence and models*, Stanford in press, for some cautionary remarks on ascribing too much per capita growth to the Roman economy.

⁷¹ Livi-Bacci 1997, op. cit. (n. 39), 47-55, and chapter 3.

Being surprisingly “primitive” in some basic production technologies, it was this power extensively to amass and concentrate the agricultural surplus from a large territory which allowed the Roman empire to reach levels of economic activity that in some ways are able to stand up to what we find in Europe in the 17th and even 18th centuries.

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