FARMERS AND MARKETS IN THE PRE-COLONIAL DECCAN: THE PLAUSIBILITY OF ECONOMIC GROWTH IN TRADITIONAL SOCIETY*

In the economic historiography of India, urban markets have been looked upon primarily as devices that allow the peasantry to convert agricultural produce into tribute payments.[1] In the influential framework pioneered by Irfan Habib,[2] for instance, the interaction of peasants with commodity markets is only one-way and all the gains from exchange accrue to the ruling elite: peasants sell so that they can pay land revenue in money form. Urbanization is seen as a by-product of this relationship, without any dynamics of its own in terms of a structural transformation of the town–country relationship. Even when some voluntary market-related activity outside the tribute relationship is

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[1] Works of comparative economic history take the same view too, for example F. Braudel, *Civilization and Capitalism, Fifteenth to Eighteenth Century*, trans. Siân Reynolds, 3 vols. (London, 1985), ii: *The Wheels of Commerce*, 129. Comparative historians tend to extend Habib's specifically Mughal work (along with a literal interpretation of foreign travellers' accounts) to all of India. See also David Landes, *The Wealth and Poverty of Nations: Why Some are So Rich and Some So Poor* (New York, 1998), esp. the chapter 'Golconda'.

[2] I. Habib, 'Potentialities of Capitalist Development in the Economy of Mughal India', *Jl Econ. Hist.*, xxix (1969), and I. Habib, 'Classifying Pre-Colonial India', in H. Mukhia and T. J. Byres (eds.), *Feudalism and Non-European Societies* (London, 1985), 48–9.

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accepted, its quantitative significance is considered minimal.[3] Economic historians who accept that some hereditary artisans produced for wider markets still remain doubtful about the quantitative weight of these activities.[4] Historians admitting some change in the traditional system during the eighteenth century see the change coming about not from voluntary economic activity, but from attacks on the artisan's traditional rights by politically powerful groups taking advantage of the general weakness of political authority during this period.[5]

This particular approach to the interrelationship of the peasantry, the state and markets, and the concomitant denial of economic growth via the market mechanism that it implies, will be referred to as the 'Pessimistic' view in this article.

These views have been significantly revised in the recent literature.[6] Yet, within the new reinterpretation, authors studying trade in agricultural produce have generally concluded that farmers were entering markets on unfavourable terms, middlemen usually creaming off all the profits.[7] Peasants are also seen as crucially dependent on the state for recovery from adversity.[8] None of these writers considers the possibility that peasants could benefit significantly from trade. A major recent work of revisionist Asian economic history sees market participation by ordinary farmers as being fairly broad-based in China and Japan, but not in India.[9] Hence, such work, too, can be called Pessimistic. This term can

[3] Habib, for instance, sees only the minority of large capitalist farmers as benefiting from market participation, whereas the large body of subsistence small-scale farmers lose out because of forced commercialization: Habib, 'Potentialities of Capitalist Development'.

[4] See, for example, T. Raychaudhuri, 'The Mid-Eighteenth-Century Background', in D. Kumar and T. Raychaudhuri (eds.), *The Cambridge Economic History of India*, 2 vols. (Cambridge, 1982–3), ii, 3–35, esp. 21.

[5] Raychaudhuri, 'Mid-Eighteenth-Century Background', 17–18.

[6] For example, F. Perlin, 'White Whale and Countrymen in the Eighteenth-Century Maratha Deccan: Extended Class Relationships, Rights and the Problem of Rural Autonomy under the Old Regime', *Jl Peasant Studies*, v/2 (1978); Frank Perlin, 'Proto-Industrialization and Pre-Colonial South Asia', *Past and Present*, no. 98 (Feb. 1983); Sanjay Subrahmanyam, 'Rural Industry and Commercial Agriculture in Late Seventeenth-Century South-Eastern India', *Past and Present*, no. 126 (Feb. 1990).

[7] R. Dutta, 'Merchants and Peasants: A Study of the Structure of Local Trade in Grain in Late Eighteenth-Century Bengal', in S. Subrahmanyam (ed.), *Merchants, Markets and the State in Early Modern India* (Delhi, 1990).

[8] S. Gordon, 'Recovery from Adversity in Eighteenth-Century India: Rethinking "Villages", "Peasants" and Politics in Pre-Modern Kingdoms', in his *Marathas, Marauders, and State Formation in Eighteenth-Century India* (Delhi, 1994).

[9] K. Pomeranz, *The Great Divergence: China, Europe and the Making of the Modern World Economy* (Princeton and Oxford, 2000), 147–8, 271.

be extended to include works such as that by Raychaudhuri,[10] which allow for some dynamism in pre-colonial economic society, but which remain sceptical about its capability for structural transformation.

Against this, we can identify writers whose claim is at the extreme opposite of the Pessimistic school. Recently, Parthasarathi has attempted to show that pre-colonial Indian agriculture was more efficient than its Western European counterpart.[11] He argues that Indian textiles were cheaper than English ones because food in India was cheaper through the greater efficiency of its agriculture. His argument is based on the evidence of higher-calorie wages of South Indian weavers in comparison with English weavers in the eighteenth and early nineteenth centuries. The lower money wages in South India were then not a sign of poverty but, in Parthasarathi's view, a result of cheaper food. The cheapness of food in turn stemmed from a relatively more efficient agriculture. He shows that in the early nineteenth century an output–seed ratio of 20 : 1 was a conservative estimate for South India, whereas the British figure was 8 : 1. Land productivity too was much higher in South India in comparison with England. Parthasarathi then concludes that industrialization took place in England in order to overcome the competitive disadvantage that British agriculture suffered from. Such a view, positing a highly efficient agriculture and high wages in pre-colonial India, I will call the 'Simple Revisionist' view.

In this article, I argue that neither of these two views is entirely acceptable. Taking Simple Revisionism first, I claim that it does both too little and too much. It does too much because it draws conclusions that are not supported by the data used by Parthasarathi. Agricultural efficiency cannot be demonstrated by postulating equal corn wages or comparing yield and seed ratios by themselves. The colonial North American corn wage in the seventeenth and eighteenth centuries was much higher than the English wage, yet the agrarian economy showed no signs of a breakthrough in productivity.[12] In medieval Germany after the Black Death, average yields rose because only the better lands were left under cultivation. Increased stock of cattle also led to

[10] Raychaudhuri, 'Mid-Eighteenth-Century Background', 21.

[11] Prasannan Parthasarathi, 'Rethinking Wages and Competitiveness in the Eighteenth Century: Britain and South India', *Past and Present*, no. 158 (Feb. 1998).

[12] E. A. Wrigley, *People, Cities and Wealth* (Oxford, 1987), esp. 10.

better manuring, raising yield ratios. Again, the agrarian economy was set for a prolonged depression.[13] In general, for farm A to be more efficient than farm B, farm A must produce more output for given input levels compared with farm B. Proving that Indian agriculture was more efficient than its English counterpart would involve us not in measuring land productivity or seed ratios per se, but in comparing total factor productivity, that is the aggregate output produced on a farm minus the cost of aggregate inputs that go into the output. But this approach makes the assumption of competitive factor and product markets (about which we know very little). Generalizations based on this approach might not be fruitful.

The Simple Revisionist view does too little because, while positing efficiency in agriculture and high artisan wages, it leaves unexplained the reasons for high wages and agrarian efficiency in India. Without such understanding, Parthasarathi's evidence of high output or wages loses much of its value and the analysis is left incomplete. For instance, that extraordinarily high yields were a feature of Indian agriculture has been well known even to the economic historians of the Pessimistic school. But as Raychaudhuri puts it, 'Perhaps the relatively small size of the population permitted the cultivation of only the more fertile land, so that even a backward technology could secure high yields'.[14]

In this article, I try to demonstrate that the eighteenth-century pre-colonial agrarian economy in a major region of western India was very different from that of the Pessimistic interpretation. There were significant opportunities for trade and the local and supra-local elite generally co-operated with the farmers. This was due to the peculiar nature of the political economy of the eighteenth-century Deccan, which required the state to maintain a fine balance between strategically important political groups.[15] Because sovereignty was constituted by the ability to manipulate vested interests of holders of revenue rights, there were strict limits to the ability of the state to extract resources from the countryside. Given the complex of local claims on land revenue,

[13] W. Rösner, 'The Agrarian Economy, 1300–1600', in Bob Scribner (ed.), *Germany: A New Social and Economic History, 1450–1630* (New York, 1996), esp. 66.

[14] Raychaudhuri, 'Mid-Eighteenth-Century Background', 17–19.

[15] A. Wink, *Land and Sovereignty in India: Agrarian Society and Politics under the Eighteenth-Century Maratha Svarājya* (Cambridge, 1986), 1–250; N. Hatekar, 'Impact of Empire: Political Economy of the Deccan, *c.*1689–1947', *Jl Univ. Mumbai*, Arts number, forthcoming.

a substantial portion was getting reinvested in the locality. Similarly, for reasons explored in section III of this article, village-level land revenue functionaries also could not push farmers beyond a point that was determined by bargaining strengths. The stability of the whole system was premised on a fine web of checks and counterchecks to various agents in the agrarian system, rather than on the absolute dominance of the Pune state. This created an accommodative land revenue policy and led the state to provide consistent encouragement for investing in agriculture, either by increasing the area under cultivation or by making capital-intensive improvements to existing land. Likewise, decentralization of political power led to the growth of urban centres as bases of local power groupings. I argue in section I that this generated an atmosphere that was conducive to agrarian growth within the context of increased commercialization. I also show that increased commercialization, in the absence of any evidence of increased taxation, reflected increased marketable surplus for the farmers. Increased surplus went along with increased commercialization. In section II, on the basis of econometric evidence, I argue that access to markets could significantly improve agrarian capital stock and incomes of rural households. Thus, we can show that increased commercialization in turn led to an increase in rural incomes and agricultural output. Connecting sections I and II, we can show analytically and empirically plausible processes of economic transformation that were similar in nature to those observed in some countries of contemporary Western Europe. The analysis demonstrates that understanding the historical economic processes of India's political economy will require a conceptual apparatus far richer than hitherto employed.

This discussion also involves us in the debate concerning the nature and extent of the 'decline' suffered by the Indian economy during its post-Mughal, pre-British phase. Bayly argues that the eighteenth century was not a period of unmitigated economic decline in North India but of relocation of economic activity, so that growth in one area was offsetting decline elsewhere.[16] In section III, I show that regional economic differentiation based essentially on market proximity had evolved in the Deccan before it came under colonial rule. I argue that a large part of the alleged 'decline', which has so far been premised on deteriorating political

[16] C. Bayly, *Rulers, Townsmen and Bazaars: North Indian Society in the Age of British Expansion, 1770–1870* (Cambridge, 1983), 1–34.

power of the Maratha state, actually refers to a relocation of economic activity and growth in areas which had the advantage of being nurtured by the local elite. As the rise of the local powers often coincided with the decline of the supra-local state, the link so far presumed by historians between the stability of the supra-local state and the local economy can be shown to be analytically inadequate.

The empirical analysis in this article is based on an unpublished census of Khandesh (see Maps 1 and 2) undertaken by Captain Sykes, the Statistical Reporter to the East India Company, in 1826.[17] The Sykes data are described in Appendix 2.

I

Khandesh came into British possession in 1818, along with the rest of the territories conquered from the Peshwa. The war in Khandesh was prolonged by comparison with the rest of the dominions because Khandesh had local notables with strong power bases around small fortresses, with professional armies manned, among others, by mercenary Arabs. The picture of the immediate post-conquest Khandesh that we get from early reports by British administrators is that of utter ruin. Elphinstone writes:

> Some parts of the province are still in a high state of cultivation, and others, more recently abandoned, convey a high notion of their former richness and prosperity; but the greater part of Candeish is covered with thick jungle full of tigers and other wild beasts, but scattered with the ruins of former villages. The districts north of the Tapty in particular, which were formerly very populous, and yielded large revenue are now almost uninhabited forest.[18]

John Briggs, the first Collector of Khandesh, had briefed Elphinstone. In his earliest report from Khandesh Briggs claimed: 'Desolation is everywhere apparent in Candeish. Immense tracts are covered with jungle, in some parts of which there still remain forts entire, and mosques appearing through woods, the monuments of better times'.[19] The English administration blamed the 'destruction' on the Maratha internecine conflicts in 1802–3, a

[17] Bombay Archives Revenue Department, files 33/186 and 34/187 (1827).

[18] Mountstuart Elphinstone, *Report on the Territory Conquered from the Paishwa* (Calcutta, 1821; repr. New Delhi, 1973), 3–4.

[19] J. Briggs, in A. H. A. Symcox, *A Memoir of the Khandesh Bhil Corps* (Bombay, 1912), 24.

large-scale famine in the following year, the greed of the revenue farmers of Bajirao II (the last Maratha sovereign) and, finally, the havoc caused by Bhil tribesmen, Pindaris and mercenary Arab soldiers in the pay of the local elite. These are supposed to have levied exorbitant tribute, forcing villagers to flee to the Nizam's dominions. Historians have generally accepted this description.[20] Gordon believes that the inability to rehabilitate and in general control local predators reflects the weakness of the Maratha power at Pune in the first two decades of the 1800s. As against this, he shows that the administration had very successfully controlled damages to the countryside during the Nizam wars of the 1760s.[21] Thus, the decline of Khandesh is associated, in the mainstream historical writing, with the decline of political power of the supra-local Maratha state and the rise of the local elite.

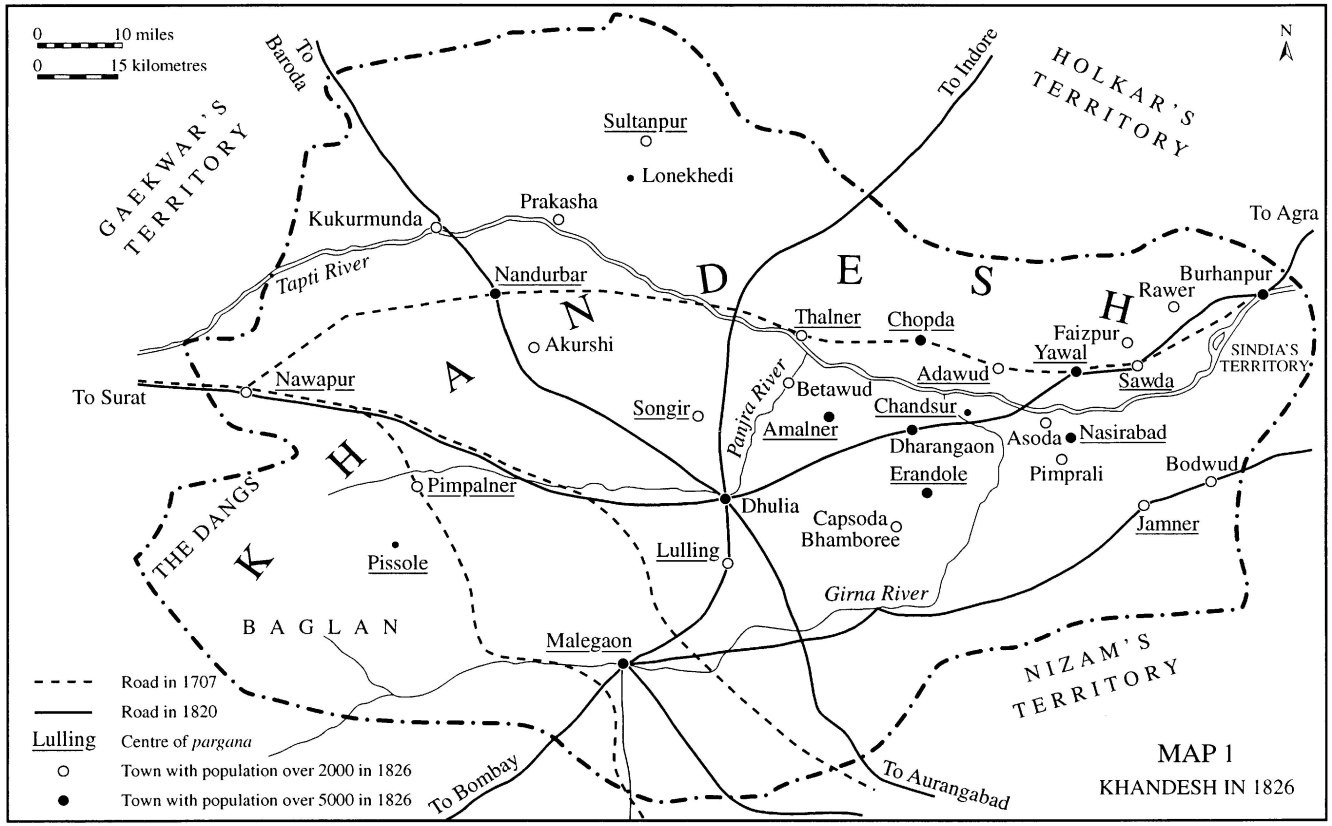
This section takes a fresh look at the economic situation in Khandesh in the early nineteenth century. What was the extent and nature of market-based opportunities available to farmers in Khandesh during this period? This is related to the town–country relationship. In a world of fragmented information, towns tend to act as focal points for buyers and sellers, and have scale economies in conducting markets. Towns act as links between the local economy and trans-regional trade by collecting produce from the countryside and redistributing it for the return flow. In this study, urban habitations are regarded (following de Vries)[22] as those with a minimum population of 2,000, not more than one-third of which are directly engaged in agriculture. Whenever a large population concentration does not satisfy the criterion of non-agricultural occupation, it is classified as a large village rather than an urban settlement. Table 1 presents the pattern of rural and urban settlements in Khandesh.

From the table, we see that 23 per cent of the population lived in the twenty-five towns that had more than 2,000 inhabitants

[20] Gordon, 'Recovery from Adversity'; S. Guha, *The Agrarian Economy of the Bombay Deccan, 1818–1941* (Delhi, 1985), 7, 12, 15; A. Deshpande, *John Briggs in Maharashtra: A Study of District Administration under Early British Rule* (Delhi, 1987), 28–36; S. Guha, 'Forest Politics and Agrarian Empires: The Khandesh Bhils, *c.*1700–1850', *Indian Econ. and Social Hist. Rev.*, xxxiii/2 (1996); D. Haynes, 'Market Formation in Khandesh, *c.*1820–1930', *Indian Econ. and Social Hist. Rev.*, xxxvi/3 (1999).

[21] Gordon, 'Recovery from Adversity'.

[22] J. de Vries, *European Urbanization, 1500–1800* (London, 1984).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Bodwud
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Dhulia
Capsoda
Bhamboree
Jamner
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Lulling
Pissole
Girna River
BAGLAN
Malegaon
NIZAM'S TERRITORY
Road in 1707
Road in 1820
Lulling Centre of pargana
Town with population over 2000 in 1826
Town with population over 5000 in 1826
To Bombay
To Aurangabad
MAP 1
KHANDESH IN 1826

TABLE 1

URBANIZATION IN KHANDESH *c.*1826, BY SIZE OF HABITATION*

Size class	No. of towns/ villages	% of total habitations	% of total population
5,000+	9	0.5	13
2,000–4,999	16	0.8	10
500–1,999	141	7	26
1–499	1,768	91	51

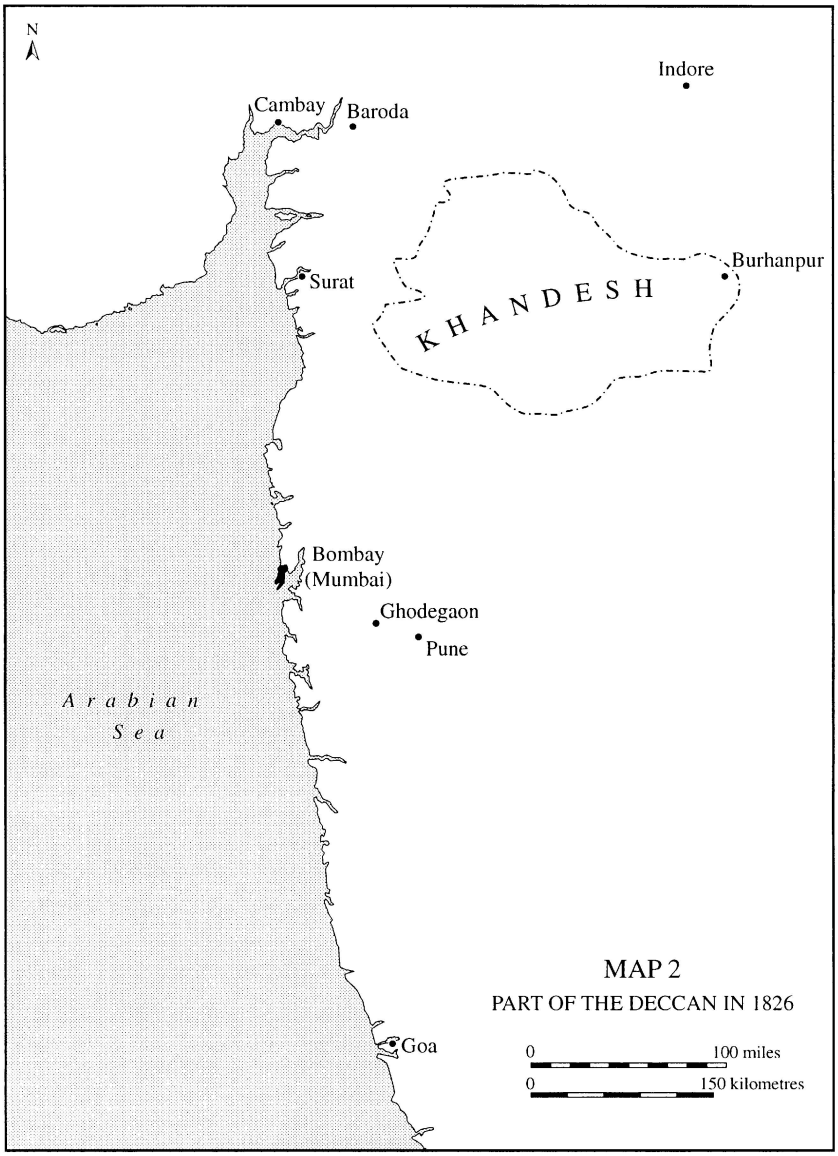
* Source: Computed from Statistical Report on the Deccan by Captain Sykes, Bombay Archives Revenue Department, files 127 and 128 (1827).

each.[23] By comparison, in 1801 in France 11 per cent of the population lived in towns of more than 5,000 inhabitants.[24] The corresponding figure for Khandesh in 1826 is 13 per cent. We have surely underestimated the percentage of the urban population in Khandesh, as we have no data on the once large and populous city of Burhanpur, very much a part of the Khandesh urban system. Though Burhanpur towards the end of the eighteenth century was nowhere near its size at the height of the Mughal power, it was still a significant city. The district of Nemad, in which Burhanpur was situated, was not under the British in 1826, and hence no data could be collected. Given the importance of Burhanpur in Mughal India, data on Burhanpur would significantly increase the percentage of urban population. Assuming on a conservative basis that the population of Burhanpur in 1826 was roughly 20,000, the percentage of the population in towns of size greater than 5,000 reaches 16.5 per cent, which is higher than in Western European countries such as France. Though most villages (more than 91 per cent) were small (fewer than 500 inhabitants), just about half the total population lived in them.

We also see a close geographical clustering of the towns of Khandesh. The *parganas* of Chopda, Adawud, Yawal, Sawda and

[23] These towns (with population in 1826 given in parentheses, along with the name of the *pargana* in which each was situated) were: Chopda (10,520: Chopda), Dhulia (9,508: Lulling), Nandurbar (7,350: Nandurbar), Erandole (6,365: Erandole), Yawal (6,340: Yawal), Amalner (5,660: Amalner), Malegaon (5,545: Malegaon), Nasirabad (5,345: Nasirabad), Dharangaon (5,020: Erandole), Faizpur (4,975: Sawda), Sawda (4,335: Sawda), Rawer (4,190: Sawda), Songir (3,595: Lulling), Capsoda Bhamboree (3,425: Erandole), Akurshi (3,260: Nandurbar), Betawud (3,015: Thalner), Jamner (2,975: Jamner), Adawud (2,625: Adawud), Thalner (2,515: Thalner), Bodwud (2,515: Jamner), Asoda (2,430: Nasirabad), Pimprali (2,295: Nasirabad), Kukurmunda (2,265: Sultanpur), Pimpalner (2,135: Pimpalner), Prakasha (2,110: Sultanpur).

[24] Wrigley, *People, Cities and Wealth*, 184–5.



MAP 2

PART OF THE DECCAN IN 1826

Thalner on the north bank of the Tapti and the *parganas* of Songir, Amalner, Erandole and Nasirabad on the south bank account for thirteen of the twenty-five. These *parganas* contained all the towns with a population greater than 5,000 except Malegaon and Nandurbar and had approximately 58 per cent of the entire urban population of Khandesh. If the *parganas* of Jamner and Lulling adjoining Nasirabad, Erandole and Amalner further south are taken into account, the urban population in these eleven *parganas* constitutes just about 70 per cent of the entire Khandesh urban population.

How and when had this urban pattern emerged? In Khandesh, most of the important towns by the first decade of the eighteenth century were situated on either side of, and in close proximity to, the Agra–Surat highway passing through Burhanpur (see Map 1). This was a very important commercial route of the Mughal Empire. At the western extreme of this urban network we have Surat, with Burhanpur at the eastern end. These were two rather important cities of the Mughals. The large volume of trade on this route must have had several spillover advantages for the neighbouring towns, which in turn would have influenced their immediate hinterlands. Burhanpur, being a very large entrepôt on the Agra–Surat trade route, normally handled large-scale *banjara* caravan traffic,[25] bullock carts and so on. Armies, with camp followers and all sorts of commerce, camped at Burhanpur for months. Surat at the other end was the prime port city of Mughal India. This would create opportunities to benefit from trade for those who lived along this route.

By 1826, the trade on this route became insignificant, with Surat and Burhanpur being reduced to mere shadows of their former selves. Both these cities were Mughal administrative centres. Burhanpur had been the Mughal capital of the province of Deccan. The weakening of the Mughal rule in the eighteenth century eroded the commercial infrastructure in Burhanpur as well as in Surat. The trade from Surat was also hit by the decline in the Red Sea market. Map 1 shows the major routes passing through Khandesh in the early 1820s. Yet the urban network in Khandesh did not necessarily decline over the eighteenth century, except for the part of the road to the south of the Tapti. It shifted its weight from the west and north to the south, from Nawapur

[25] Traditional carriers of grain on the backs of pack bullocks.

to Malegaon along the new routes to Pune and Bombay, in keeping with the emergence of new political and economic centres like Baroda, Pune and Indore.

During the eighteenth century, new towns came into being. Malegaon, one of the more important towns in Khandesh throughout the late eighteenth century, emerged in the 1740s, when Naro Shankar, the Raja Bahadur of Malegaon, built a strong fort, garrisoned it with mercenary Arabs and began attracting trade.[26]

Along with such political-military bases, villages in the vicinity of large towns could develop as towns. Faizpur near Sawda grew from a small village at the beginning of the eighteenth century to a town of almost 5,000 inhabitants by the 1820s. *Parganas* like Yawal, too, were the power bases of the local elite. Yawal is near Sawda, which was held by Raste. (Because the local elite generally held a range of rights throughout the Maratha heartland and also outside it, these localities received substantial inflows of tribute. Thus, just as in the case of Frank Perlin's 'rurban' centres, the political, administrative and military powers of these households would have stimulated the growth of a dense nexus of local exchange. Yet, unlike typical 'rurban' centres, these were not entirely dependent on elite residence, as we shall see below.) In general, the local elite nurtured market towns in their localities because such towns served as ways of strengthening their immediate political constituencies and also allowed them greater revenues in terms of taxes and duties. Once established, these towns seem to have generated their own dynamism. Nurturing towns as constituencies would have become an even greater imperative in cases like those of Yawal and Sawda where competition for patronage was intense because of geographical proximity.

Urban growth, to an extent, reflected the growth of agriculture and the need for increased trading opportunities. This can be seen if we examine the structure of the main occupations of the towns and villages: see Table 2, which shows the number of people employed in each major non-agricultural occupation as a percentage of the total engaged in non-agricultural occupations in each size class of habitation. As the table indicates, shopkeeping was the single largest employment in the towns. Even small towns functioned as markets for a surprisingly large volume of trade. As an example we have the description of the commodities sold

[26] *District Gazetteer of the Central Provinces* (Bombay, 1860), 486.

TABLE 2

MAJOR CATEGORIES OF EMPLOYMENT IN KHANDESH TOWNS
*c.*1826 (% of non-agricultural population in size class)*

Employment category	Population size class of habitation			
	5,000+	2,000–4,999	500–1,999	1–499
Non-agricultural				
Weavers	10	8	5	2
Shopkeepers	19	22	17	11
Ironsmiths	1	3	4	4
Braziers	3	2	2	0.5
Silversmiths	7	8	10	7
Washermen	2	2	3	5
Barbers	4	6	9	24
Pot makers	2	3	4	4
Carpenters	2	3	6	11
Tailors	6	9	8	5
Turban weavers	3	2	0.2	0.1
Oilmen	8	7	8	5
Cultivators[a]	13	22	36	67

* Source: Computed from Statistical Report on the Deccan by Captain Sykes, Bombay Archives Revenue Department, files 127 and 128 (1827).

[a] Percentage of total households in size class.

in Ghodegaon (population over 2,000 but under 5,000) in 1826 (see Appendix 1). (Though this is not in Khandesh but is near Pune, the example does indicate that small towns had significant trading activity.)

The government was forced to encourage agriculture in the second half of the eighteenth century. Given its political context, the state seems to have realized that the best way to maximize its revenues in the long run was to nurture farmers and expand cultivation rather than impose higher taxes. It sought to do this by giving various concessions for land reclamation and development. In Khandesh, it was customary to give 10 *beeghas* in *inam*[27] to anyone who might convert 100 *beeghas* into irrigated lands by digging wells or constructing dams across the numerous rivers and streams.[28] The government was particularly sensitive to complaints of over-assessment. Revenue officials newly appointed to Khandesh were regularly reminded not to raise existing rates, and to depend only on increased cultivation to augment land

[27] *Inam* was a revenue-free grant.

[28] *Selections from the Satara Raja's and Peshwa's Diaries: Peshwa Madhavrao*, ed. Rao Bahadur Ganesh Chimanaji Vad, 2 vols. (Pune, 1911), i, 186.

TABLE 3

DISTRIBUTION BY HABITATION SIZE OF MAJOR EMPLOYMENT CATEGORIES IN KHANDESH *c.*1826
(% of employment category)*

Size class	*Balutedars*[a]	Shopkeepers	Weavers[b]	Others[c]	*Banjara*	*Dalits*[d]
2,000+	30	50	66	54	42	12
1,000–1,999	17	20	17	20	4	13
500–999	16	16	7	14	39	18
1–499	37	14	10	13	15	57

*Source: Computed from Statistical Report on the Deccan by Captain Sykes, Bombay Archives Revenue Department, files 127 and 128 (1827).

[a] Traditional 'village servants': ironsmiths, washermen, barbers, pot makers, carpenters, tailors, sheep butchers, beast butchers, Manyar, oilmen, *jogee*, silversmiths.

[b] Comprising weavers, dyers, silk cleaners, appraisers, *bohra*, cloth sellers, dyers of fixed-colour threads, brokers, *khutree*, *gujreh*.

[c] Comprising braziers, turners, saddlers, leaf-plate sellers, metal casters, fruit sellers, *lonaree*, stonemasons, rice pounders, porters, lime burners, pan sellers, fishermen, liquor sellers, gold-finders in sweepings, exorcists, red-powder sellers, bangle makers, Mahanubhav, milkmen, huntsmen, dancing women.

[d] Village menial occupations considered polluting: *mahar*, *dhor* and *mang*.

revenue. The operational aspects of the land revenue administration were frequently modified if the farmers requested such modifications.[29] Land revenue was remitted if farmers pleaded 'poverty'.[30] The state advanced loans to farmers for working capital needs[31] and to repair dams.[32] The congruence of the interests of farmers, the local elite and the supra-local powers generally tended to create an advantageous environment for the farmers.[33] The economically active countryside was in turn reflected in a thriving commercial network.

Commercialization could fundamentally alter the organization of economic activity and its division between towns and villages. Table 3 gives an idea of how the infrastructure and availability of trading opportunities served to concentrate many activities in towns. Thus, about 30 per cent of all *balutedars*[34] were concentrated in the towns that accounted for 23 per cent of the total population but less than 2 per cent of total habitations. On the

[29] *Selections from the Satara Raja's and Peshwa's Diaries: Balaji Baji Rao*, ed. Rao Bahadur Ganesh Chimanaji Vad and D. B. Parasnis, 2 vols. (Pune, 1907), i, 206.

[30] *Ibid.*, 223.

[31] *Ibid.*, 383.

[32] *Ibid.*, 244.

[33] Hatekar, 'Impact of Empire'.

[34] Artisans of various kinds considered to be village servants in the traditional view of Indian society.

other hand, more than a thousand villages in the size class 1–499 did not have a single *balutedar*. Villages in that class, accounting for 91 per cent of the total villages, had only a little over a fifth of the total artisans. Certainly, village self-sufficiency was far from general. Artisans did not predominantly live in small villages. The category of 'others' in Table 3, which represents various miscellaneous types of employment, is also concentrated in towns, as is the case with weavers. *Banjara*, the traditional carriers of grain, were more dispersed in an increasingly commercial society. Most village servants seem to have been in reality working mainly in urban areas, with the exception of the category *dhor*, *mahar* and *mang*, which were the least economically mobile sections of society. These sections remained outside the commercial network. The economic inequality between them and others who were better situated to benefit from the market would have increased in this period.

II

Historians allowing for some commercialization in pre-colonial Indian agriculture are nevertheless doubtful about its ability to increase agricultural investment and productivity. Anthropologists too have advanced arguments claiming basic structural incompatibility between peasant ways of life and commercial factors.[35] The crux of an influential argument by James Scott is that because peasants in South-East Asia live precariously close to starvation levels, their ability to withstand fluctuations in incomes is very limited.[36] Consequently, peasants in pre-colonial South-East Asia did not engage in market exchange, but evolved a non-market ethic of reciprocal help.

On the other hand, standard economic theory would argue that town markets provide better opportunities for trade and exchange and hence actually raise incomes of rural households that have the ability to participate in them. Town markets might also stabilize incomes by providing hedging opportunities. For instance, a member of a predominantly farming family can be

[35] But see S. L. Popkin, *The Rational Peasant: The Political Economy of Rural Society in Vietnam* (Berkeley, 1979), and E. Wolf, 'Closed Corporate Communities in Meso-America and Central Java', *Southwestern Jl Anthropol.*, xiii (1971), for alternative views.

[36] James C. Scott, *The Moral Economy of the Peasant: Rebellion and Subsistence in Southeast Asia* (New Haven and London, 1976), esp. chs. 1, 2.

employed in a shop or as a servant in the town, thereby reducing the dependence on income from agriculture.

Admittedly, in looking at markets in this manner, we have set up an artificial dichotomy. In theory, several intermediate market types are possible. In spite of the richness of the Sykes database, we cannot empirically classify each individual market along this continuum. However, we can still investigate the effect of markets on farmers' incomes and investment on a Khandesh-wide basis quite accurately by setting up an appropriate econometric exercise. In this section, we are asking the following question: on the basis of the Sykes database, what is the Khandesh-wide empirical relationship between the level and stability of incomes of agricultural households, investment in agriculture and market access? If market participation is predominantly detrimental to farmers' interests as argued by Scott, we should find a negative association, for Khandesh as a whole, between the levels of incomes and capital stock of farmers, and market participation. Market participation should increase the variability of agricultural households' incomes. On the other hand, if markets predominantly carry out the functions that standard economic theory associates with them, market participation should increase farming households' incomes and capital stock while reducing the variability of their incomes. These relationships, which are expected to hold for Khandesh as a whole, do not preclude the possibility of pockets that would behave in a manner contrary to the overall Khandesh relationship. It would only mean that their quantitative significance was not sufficiently large to change the overall direction of association.

My econometric results show that on a Khandesh-wide basis, regions within the commercial network of urban towns were better off compared with regions not within such networks.[37] Farmers having access to markets generally had higher levels of income as compared with those who lacked such access. The incomes of farmers with market access were also less variable than those of farmers without market access. My results in no way preclude the possibility of specific markets being detrimental to peasant incomes as well as capital stock. But, as discussed in section I, most of the urban centres in Khandesh are closely clustered together, setting off a commercial area from the rest of the region. The maximum east–west distance in a straight line in

[37] For the detailed econometric argument, see Appendix 3 below.

this urban system containing approximately 70 per cent of the Khandesh urban population is 56 miles, the north–south maximum distance being 25 miles. Given that market access, on a Khandesh-wide basis, generally tended to benefit rural households, the close proximity of most of the towns to each other would preclude the existence of significantly important markets where rational profit-maximizing peasants would rather not participate. The existence of such a market would require either very high transport costs or prohibitively high information costs, or other entry barriers. But we do not have any evidence of such barriers. On the other hand, we have evidence of permanent migration from *parganas* that had lost market access into *parganas* where the urban commercial centres were thriving (see section III). Thus, labour was mobile.

This is not to deny the great importance that 'moral economies' might have in areas prone to subsistence crisis. My analysis shows that alongside the moral economy, other behaviour patterns might also coexist, sometimes outweighing the moral economy. The relative ecological stability of Khandesh could have reduced the weight carried by the moral economy behaviour in determining the impact of commercialization.

III

As seen above, historians agree that Khandesh in 1818 was almost entirely in ruins and that the ruin was a result of political weakening of the Maratha power. Yet the discussion in this article so far has highlighted the role of the local elite and the existence of commercialized 'rurban' centres and significant rural–urban linkages even at the dawn of the British rule. How does one reconcile the two? I show in this section that the destruction consequent on the weakening of the Maratha power was relatively short-lived. Local power could protect the economy from such depredations. The really irreversible desolation was not related to political weakening of the Pune government, but was a result of voluntary migration by households as the centre of economic gravity shifted its locus.

Section II has shown that households that had access to markets in towns invested more and had higher and more stable incomes compared with households that lacked access to markets. That would create economic differentiation. In Khandesh, economic

differentiation tended to be spatial, between areas that had lost access to markets and those where market opportunities presented themselves much more readily. As we have seen above, the trade route between Burhanpur and Surat, which passed through the heart of our urban network, ceased to exist in the late eighteenth century. The towns in the plains did not suffer much after the decline of the Agra–Surat route, since by that time increased commercialization had made local trade highly resilient. A major loser in terms of commercial opportunities was Nawapur. Its physical location now meant a restricted access to trading networks after the decline of the Agra–Surat route. In the seventeenth century, Nawapur carried out long-distance trade in rice, tobacco and garments, exported to the Red Sea, Russia and Eastern Europe among others.[38] With the decline in economic opportunity in Nawapur and Sultanpur, it is not improbable that people migrated into the plains of Khandesh where economic opportunities were expanding.

We can distinguish between long-term migration and short-term desolation, and also between areas that continued to be desolated and areas that were on the way to recovery in 1826. The Sykes database gives us the number of deserted villages in each *pargana*, the number of *paygusta* villages,[39] and the number of inhabited and deserted houses in each village. If a *pargana* shows a large percentage of its villages as deserted, but a low percentage of its houses as deserted, I conclude that this indicates depopulation in the relatively more distant past. This is because, if any houses had been deserted in this *pargana*, that desertion took place so long ago that they had crumbled away by 1826. Further, if these *parganas* have no *paygusta* villages, then I conclude that they were not on a path to recovery in 1826. This was long-term, permanent depopulation. On the other hand, if we find that the proportion of deserted houses in a *pargana* closely matches the proportion of deserted villages, I hold this to be a relatively recent depopulation. Also, if we find that the percentage of *paygusta* villages in these *parganas* was relatively high, I argue that these areas were on the way to recovery, depopulation being mainly a short-term response by the farmers to what they saw as temporary adversity. This distinction between long-term

[38] *The District Gazetteer of the Bombay Presidency, Khandesh* (Bombay, 1880), 274.

[39] Villages that had been deserted but were now being cultivated by farmers from neighbouring villages, presumably on short-term leases.

and short-term depopulation will help us understand spatial stratification in Khandesh.

Using these criteria, we find that in 1826 the two *parganas* of Nawapur and Sultanpur had the largest number of desolated villages: 110 villages of the 235 in Nawapur (46.8 per cent) were classified as deserted. There were no deserted houses in Nawapur. Only 0.08 per cent of the Nawapur villages were *paygusta*. In Sultanpur, 106 out of the 231 villages (45.9 per cent) were deserted in 1826. Only 0.04 per cent of its villages were *paygusta*, and 0.16 per cent of the houses were deserted. I interpret this as permanent out-migration. Indeed, so permanent was this decline that after half a century of British rule, the *Gazetteer* of Khandesh of 1880 calls these *parganas* 'virtually uninhabited'.[40] Sultanpur was a ruined city in 1880, according to the same gazetteer.[41] The *pargana* of Baglan was the other area in long-term decline. In Pissole in Baglan, 54 per cent of the thirty-three villages were deserted and there were no *paygusta* villages, and barely 0.4 per cent of its houses were deserted in 1826. The early nineteenth-century maps of Baglan show the district as heavily forested. By 1872, the Bombay Presidency Census calls this area 'unsurveyed territory'.[42] On the other hand, the areas of short-term desolation (where warfare and the depredations of the Pindaris had been at their worst), mainly the *parganas* of Erandole, Nasirabad and Chandsur, and also those along the north bank of the Tapti, were well on their way to recovery in 1826. By 1880, the Khandesh *Gazetteer* refers to Nasirabad as the 'richest area' in this district.[43] In 1826, 18 of the 124 villages in Nasirabad were deserted, but another 22 previously deserted villages were now being cultivated, though 11 per cent of the houses were still deserted. Clearly, Nasirabad was too valuable a neighbourhood to abandon except under extreme conditions. Similarly, in Erandole, 19 out of 137 villages were deserted but another 41 were *paygusta* by 1826. In Amalner too, although 40 of its 139 villages were deserted, 17 previously deserted villages were back in cultivation by 1826. The hinterland of the commercial network in Khandesh was thus resettled rather quickly. On the other hand, the out-migration in Nawapur and Sultanpur was not due to the deteriorating law and

[40] *District Gazetteer, Khandesh*, 463.
[41] *Ibid.*, 471.
[42] *The Census of India 1872, Bombay Presidency*, Map of Khandesh.
[43] *District Gazetteer, Khandesh*, 387.

order situation, because otherwise the British peace should have led to repopulation. The case of Baglan was similar. Access to economic opportunity and the chances that the plains offered for households to better their lot seem to have been more important in influencing people's choice of settlement.

On a purely analytical level, I would argue that too much has been made of the possibility of fleeing as a long-term strategy of coping with adversity. Stuart Gordon has argued that desertion of villages in Khandesh during 1800–18 reflected long-term out-migration through the state's inability to control depredation by local powers as well as to rehabilitate peasants after the famine in Khandesh.[44] The assumption that land was abundant and that village communities had the incentive to lure away tenants from each other has tempted historians into seeing flight and resettlement elsewhere as generally available options. Such a choice was unlikely to have been open to most villagers in the eighteenth and early nineteenth centuries. Village communities could not have leased out land to the first migrant that appeared, even while they sought tenants desperately. These so called *upari* leases were typically short-term leases of one year. A tenant quitting after a year has an obvious incentive to maximize short-term gains at the cost of long-term productivity of the soil. Village communities would then be the certain sufferers, because the next year's tenant was not likely to offer the same rent, in view of the diminished productivity. In economic terms, migrants faced a problem of adverse selection. It helped greatly if a prospective tenant was known as a well-to-do farmer having adequate resources and a good reputation. Failing that, he at least had to be related to somebody with a good local reputation. For this reason, farmers generally sought out in-laws and other kin for shelter during adversity. If the fugitive had none of these advantages, the only alternative was to lead the life of a wandering landless worker. In addition, not every escapee had access to implements, seed and other working capital as well as cattle to carry on farming in far-flung villages. People who were forced to flee generally came back to their homes at the first possible opportunity. In the case of Nawapur and Sultanpur, migrants seem not to have returned. That is because they had not been

[44] Gordon, 'Recovery from Adversity'.

forced to flee, but were simply attracted by the better economic opportunities in the plains where they settled permanently.

The *parganas* of Sawda and Yawal, held by the Peshwa's noblemen who employed mercenary Arabs, showed very little damage. Not a single village in Sawda was reported as deserted in 1826. Nimbat, containing the city and fort of Malegaon, showed comparatively little desolation of either the long-term or short-term types. Seven of its fifty-five villages and 3.4 per cent of its houses were reported as deserted. This was in spite of Malegaon lying directly on the trail taken by the marauding Holkar on his way to Pune in 1802. Thus, far from being a cause of desolation, the possession of local power allowed the local elite to protect their dominions against natural and man-made calamities.

IV

In this article I have shown that pre-colonial Khandesh was a highly commercialized economy, pointing to the possibility of agrarian growth within the context of commercialization. Commercialization stood in a synergistic relationship with agricultural growth. Agricultural growth was essential for increased commercialization, but as section II has shown, commercialization could give an impetus to rural household investment and incomes. The growth of local power and politics could not only protect commercial areas from adversities, but also actively contribute to urban growth. This is apart from the direct role that the Maratha state played in encouraging agriculture. Unlike the static picture of Simple Revisionism, I have been able to create a more transactional scheme, which is empirically supported for at least one region.

Increased commercialization by itself does not lead to a large-scale transformation. Seventeenth-century Holland and Sung China are good examples of this.[45] This must be offset against the evidence from north-western Europe that has shown the significant role that urbanization and commercialization played in

[45] J. de Vries, *The Economy of Europe in an Age of Crisis* (Cambridge, 1977), 251–2; J. de Vries and A. van der Woude, *The First Modern Economy: Success, Failure and the Perseverance of the Dutch Economy, 1500–1815* (Cambridge, 1997); M. Kelly, 'The Dynamics of Smithian Growth', *Quart. Jl Econ.*, cxii/3 (1997); K. Deng, 'A Critical Survey of Recent Research in Chinese Economic History', *Econ. Hist. Rev.*, liii/1 (2000).

improving agrarian productivity.[46] Such a possibility should not be entirely denied in the context of pre-colonial Khandesh. One of the points of this article is to establish that the questions we ask of Khandesh agriculture can be placed within the same conceptual scheme as the one that has hitherto been used for Western Europe. This is a far cry from the model of static, self-sufficient, inward-looking villages occupied by tradition-bound peasants and lorded over by a surplus-seeking overlord, whose history is supposed to be some kind of a 'hothouse flower' blooming only in special South-East Asian conditions. The Pessimistic view denies all possibilities of transformation coming from among the farmers themselves. As this article has shown, alternative market-based models that allow some growth of output per head and productivity are empirically plausible.

I will develop one such model as an illustration. My econometric results show that commercialization raised capital stock in agriculture at the household level. Classical economists have taught us that in pre-capitalist economies, improvements in per capita income are soon matched by increased population, driving them down. But in Khandesh there is no direct evidence to show this. One can argue that population need not have increased. Appendix 1 shows the large role played by women in marketing as well as in craft production. Higher incomes would raise the demand for children through an income effect, but would also raise the opportunity cost of children, since women would no longer be able to market the family output, especially since it involved travelling long distances, or contribute to craft production. Thus, it is not obvious that marital fertility would have followed a rise in incomes. If population did not necessarily increase (apart from in-migration), capital stock per worker could have gone up, resulting in higher incomes per head. This in turn could create additional demand for non-agricultural goods and higher commercialization, again prompting agricultural households to invest.

The above is one possible dynamic scheme in which shopkeepers and farmers might have found themselves. It should be made clear that it is not claimed here that rural Khandesh was on the verge of a large-scale capitalist transformation during our period, or that agricultural investment and output were spiralling

[46] See P. Hoffman, *Growth in a Traditional Society: The French Countryside, 1450–1815* (Princeton, 1996).

up in a virtuous cycle. There are several intervening factors not accounted for by my analysis here. In the case of Sung China it has been shown that once the possibilities of commercialization were exhausted, the growth rate of output might rapidly decelerate.[47] In the present case, the end result could well be a steady-state growth, with shocks in the form of wars, famines and so on. It is also possible that in-migration from relatively less developed regions into active commercial networks could have had the effect of a population increase. The value of postulating a dynamic process of development or underdevelopment consists not in its realism, but in diverting attention from a single-minded focus on models where a given structure of property relations condemns the peasant to perpetual poverty and subservience to overlords, a focus that still dominates Indian historiography. For instance, in a recent work on comparative world economic history, David Landes approvingly quotes European travellers to India: 'the peasant had no incentive to improve his land' and he 'fell back on patience, stubbornness, resilience — the resources of an oppressed population. Their needs? Money is inconvenient to them; Give them victuals and arse clout, it is enough'.[48] On the other hand, in my model, economic change will involve complex interactions of fertility, incomes, women's role in marketing, migration and market opportunities, growth of local power, and random shocks. These forces are not specific to South-East Asia, but are universal. Using the point of view advocated in this article, we have many more questions to ask, questions with which modern development economists are quite well versed. Answers to such questions, however tentative they may be, will certainly improve our understanding of the historical economic process in South-East Asia.

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[47] Kelly, 'Dynamics of Smithian Growth'.

[48] Landes, *Wealth and Poverty of Nations*, esp. the chapter 'Golconda'. Landes, when quoting from his sources, does not seem to appreciate the fact that writings by European travellers to India reveal as much about their attitudes to Indian society as about the 'facts' that they supposedly report. In any case, it is not at all difficult to find Europeans reporting exactly the opposite.

APPENDIX 1

SELLERS AND THE COMMODITIES THAT THEY BROUGHT FOR SALE TO THE GHODEGAON MARKET ON 6 JANUARY 1826[49]

No. of sellers	*Description*	*Commodity sold*	*Seller's origin (distance from Ghodegaon)*
3	Women	*Nachani*	Chass (8 miles)
1	Woman	Cooking oil	Gerolee (8 miles)
1	Woman	Oil seeds	Gerolee (8 miles)
1	Woman	Unknown	Gerolee (8 miles)
1	Woman	Millet	Ghodegaon
1	Man	Rice	Ghodegaon
1	Man (farmer)	Rice	Ghodegaon
1	Woman	*Wal*	Ghodegaon
1	Woman	*Udid*	Ghodegaon
1	Woman	Rice	Ghodegaon
1	Woman	Vegetables	Ghodegaon
1	Woman	Split peas	Ghodegaon
1	Woman	Millet	Ghodegaon
1	Woman	*Badlee*	Pimpalgaon (6 miles)
1	Man	*Kooltee*	Pimpalgaon (6 miles)
1	Woman	*Chowlee*	Gungapoor
1	Woman	*Methee*	Kolda
1	Woman	*Tooree*	Ambree
1	Woman	*Harbara*	Koldawaree
1	Woman	*Moog*	Manchar (8 miles)
54	Both sexes	Grain	Ghodeh and neighbouring villages
10	*Chatee*[50] (male?)	Coarse cloth	Ghodegaon
12	*Chatee* (male?)	Coarse cloth	Neighbouring villages
9	*Koshtee* (male?)	Cloth	Ghodeh and neighbouring villages
1	*Momeen*	Turbans	Unknown
3	*Surrafs*[51]	Unknown	Two of them from Junnar (14 miles)
4	*Kassars*	Bangles	Three of them 'strangers'

[49] The information in this appendix is derived from Captain Sykes's manuscript 'Weights and Measures, Prices Currant [*sic*] Imports and Exports, Transit Duties and Market Coins' (British Library, London, India Office and Oriental Collection, MS EUR.d.143).

[50] Middlemen who bought from weavers and retailed.

[51] Money-lenders and money-changers.

No. of sellers	*Description*	*Commodity sold*	*Seller's origin (distance from Ghodegaon)*
7	*Boharee*	Padlocks, needles, rolling pins, small cooking vessels, glasses, small lacquered snuff boxes	Two of them from Junnar (14 miles)
2	*Putwegars*	Silk and dyed cotton strings	Unknown
1	*Otari*	Unknown	Manchar (8 miles)
12	*Malee*	Garden produce	Ghodegaon
27	*Malee*	Garden produce	Neighbouring villages
15	Grocers	Unknown	Unknown
4	Women	Perfumed oils, powder for blacking teeth, *koonkoo* etc.	Unknown
1	Woman	Cotton thread made by herself	Ghodegaon
1	Man	Raw cotton	Ghodeh
1	Woman	Dried fish	Unknown
9	Men	Shoes	Ghodegaon
4	Men	Shoes	Neighbouring villages

APPENDIX 2

THE SYKES DATABASE

The Sykes database includes information about each of the 3,666 villages spread over an area of 12,527 square miles of Khandesh. It forms part of a larger information-gathering project headed by Captain Sykes. He also reported on population, rainfall, temperature, the flora and fauna, currency and trade wage rates, agricultural productivity, topography and places of interest in large parts of the territory conquered from the Peshwa. The census data were collected at the village level by the village officers in Marathi. They were translated and presented to Captain Sykes, who checked them for internal inconsistencies. If these were found, new data were collected, as happened in the case of Dharwar. The process of data collection evidently required some co-operation from villagers, since data on seventy-six Khandesh villages could not be collected, the inhabitants 'being averse to a census'. In Captain Sykes's view, 'in looking at the returns, there are very few internal proofs of errors and on the whole, they are probably tolerably correct'.[52] I have used the hitherto unpublished village-level raw figures for Khandesh available in the Maharashtra State Archives at Mumbai. In presenting the Sykes database, I have used the same classification as was used by Captain Sykes:

[52] Captain Sykes to the Revenue Commissioner in the Deccan, Bombay Archives Revenue Department, file 34/187 (1827).

I. Data on land and houses

1. Name of the village and its number in the *pargana* list, whether the village was deserted, or *paygusta*, *jagir*[53] or *inam* in 1826
2. Number of houses in the village
3. Inhabited houses
4. Deserted houses
5. The number of taxpaying cultivating households
6. Land irrigated by public channels and by wells
7. Dry land
8. Total cultivated land
9. Wasteland (including pasture)

The data from 1 to 9 were routinely collected and maintained by the village-level land revenue machinery through most of the eighteenth century and hence can be considered quite reliable. However, 5 would not include non-taxpaying households and hence would underestimate the number of cultivating households in the village. At the same time, households owning taxpaying lands in multiple villages in the same *pargana* would lead to an overestimation of the total number of households in the *pargana* in the aggregative data. Fortunately, cross-checks of the data revealed that these effects were minor at the *pargana* level, largely offsetting each other.

II. Demographic data

10. Number of Brahmin males and females
11. Number of Rajpoot males and females
12. Number of Shoodra males and females
13. Number of Atee Shoodra males and females
14. Number of Muslim males and females

Data on 10 to 14 were in general not traditionally collected by the village-level administration. It is possible that they were collected in the above format for the first time for Captain Sykes. The term 'Rajpoot' in the Sykes database is likely to mean high-status Maratha families, which had over the years begun to claim Rajpoot origin. The term 'Shoodra' would cover all the middle castes, while 'Atee Shoodra' refers to the low castes. Though there is no direct method to test the reliability of these figures, they have been used by historians of the Deccan to estimate population change,[54] and have been found to yield reasonable results.

III. Data on occupations

These data were also probably collected for the first time in 1826. Before then, there are no censuses based on occupational classification. In the Sykes database, groups that were culturally distinct have been entered as distinct occupations. For instance, the Mahanubhav, who were a Krishna-worshipping sect, are entered as an occupation. The Mahanubhav were in

[53] *Jagir* was a revenue-free grant held in lieu of military service.
[54] Guha, *Agrarian Economy*.

reality engaged in diverse occupations such as begging, or working as labourers, coarse-cloth weavers, carriers with carts and bullocks etc. Similarly, the Muslim Manyar are entered as a separate caste, though one of their occupations, the making of bangles, is a separate category in the Sykes data. *Lonaree*, who were lime burners, have been similarly added, though there is also a separate category for lime burners. Fortunately for us, the sum total of these groups does not exceed 3 per cent of the entire population, and hence the double counting involved is not significant.

15. Weavers
16. Shopkeepers
17. Ironsmiths
18. Braziers
19. Silversmiths
20. Washermen
21. Barbers
22. Potmakers
23. Carpenters
24. Tailors
25. Turban weavers
26. Turners
27. Cotton cleaners
28. Saddlers
29. Sweetmeat sellers
30. Sheep butchers
31. Beast butchers
32. Manyar
33. Oilmen
34. Sellers of glass rings
35. *Jogee* (wandering mendicants)
36. Shepherds
37. Dyers of cloth
38. Leaf-plate sellers
39. Metal casters
40. Fruit sellers
41. *Bohari*
42. *Lonaree*
43. Silk cleaners
44. Appraisers
45. Stonemasons
46. *Bohra*
47. Rice pounders
48. Porters
49. Cloth sellers
50. Lime burners
51. Betel-leaf sellers
52. Fishermen
53. Liquor sellers
54. Dyers of fixed-colour threads
55. *Banjara*
56. Gold-finders in sweepings
57. Exorcists
58. Red-powder sellers
59. Firework makers
60. Mahanubhav
61. Milkmen
62. Huntsmen
63. Brokers
64. Dancing women
65. *Khutree*
66. *Gujreh*
67. *Dhor*, *mahar* and *mang*
68. Shoemakers
69. Sweepers and nightmen

IV. Village capital stock

The regular land revenue machinery did not usually collect these data before 1826; they were collected on such a wide scale for the first time for the Sykes report. By Captain Sykes's own admission, data on pack and plough bullocks are not reliable.

70. Draught bullocks
71. Pack bullocks
72. Cows and buffaloes
73. Ploughs
74. Carts
75. Schools

APPENDIX 3

This appendix presents the detailed econometric argument behind the conclusions drawn in section II. Aggregating the data at the *pargana* level, I define the availability of market opportunities as the existence of a town with a population of more than 2,000. Admittedly, this is not a very accurate way of capturing the areas of influence of markets. A large market such as Chopda might have a much wider area of influence than a small town such as Lonekhedi. The area of influence of Chopda is likely to have extended beyond Khandesh. Also, a *pargana* such as Sultanpur that had two or three town markets might have had a qualitatively different market activity compared with the *pargana* of Adawud with only one relatively small market town. Yet we are unlikely to be able to find the required information to get an accurate quantitative indicator of market influence in Khandesh for our period. On the other hand, our proxy variable is a measure of market influence, however crude.

As regards variability of income, we do not have any data at all on household incomes, far less on their variability. But we do have data on the number of cows and buffaloes per household. Rosenzweig and Wolpin have argued convincingly that in the ecological and environmental context that is applicable to the modern Deccan, households invest in oxen as consumption-smoothing devices.[55] Since there is no crop insurance, and the market for credit is imperfect, oxen serve as a liquid asset that can be sold off when household incomes fall below a threshold level. Rosenzweig and Wolpin empirically show that households in semi-arid India draw down their stocks of oxen in bad years and accumulate them in good years as a way of offsetting the changes in consumption. It seems natural to extend the logic to household ownership of cows and buffaloes in the Deccan of the late eighteenth and early nineteenth centuries. Thus, I assume that the number of cows and buffaloes per household (hereafter COWH) will depend on two things: the household income level, whereby richer households will own a greater number of cows and buffaloes[56] (which I will call the income effect); and the variability of household incomes, whereby households with more uncertain incomes will hold a larger stock of cows and buffaloes as insurance (which I will call the insurance effect).

In the econometric model posited below, the household holding of cows and buffaloes also depends a priori upon the availability of wastelands, because in the Sykes database wasteland also includes pasture. An additional determinant of the household holding of cows and buffaloes is the ownership by households of other capital goods.

To investigate the impact of market participation on agricultural capital stock, we need to settle on a measure of agrarian capital stock. The Sykes database contains information on the number of carts per household, ploughs per household, bullocks per household and cows and buffaloes per house-

[55] Mark R. Rosenzweig and Kenneth E. Wolpin, 'Credit Market Constraints, Consumption Smoothing and the Accumulation of Durable Production Assets in Low-Income Countries: Investment in Bullocks in India', *Jl Polit. Econ.*, ci/2 (1993).

[56] Because cows and buffaloes are what economists would call 'normal' goods, i.e. people would not demand fewer of these goods if they became wealthier.

hold. Our measure of capital stock should ideally include all these, in addition to others such as tools and implements, seed stock and wells, which are not included in the Sykes database. We are constrained to leave out data on bullocks because, by Sykes's own admission, the figures are not reliable. Ploughs per household are a priori also determined by the extent of land held by the household, on which we have data, and the characteristics of the land so held (soil quality and depth, quality of draught animals), on which we lack data. Hence, ploughs per household will not be a suitable variable. The only remaining candidate for which we have data is the number of carts per household. Carts, at least to an extent, are likely to be influenced by the availability of marketing opportunities, though a good deal of marketing was by pack bullocks. Yet simply finding that carts per household were positively associated with market access would not tell us anything. Even under 'forced commerce', mere convenience of transport would bring about a positive association, though market participation might actually reduce household incomes. I shall independently demonstrate that market access was associated with higher household incomes as well as a greater number of carts per household. Thus, there is no self-selection in choosing carts per household as a measure of agricultural capital stock.

The data described in Appendix 2 were used to estimate the following two (linear) equations:

$$\mathrm{CARTH} = a + b \times \mathrm{COWH} + c \times \mathrm{DUMMY} + d \times \mathrm{DESERT} + \\ + f \times \mathrm{PLOUGHH} + e \qquad (1)$$

$$\mathrm{COWH} = \alpha + \beta \times \mathrm{DUMMY} + \gamma \times \mathrm{WASTEH} + \delta \times \mathrm{CARTH} + \varepsilon \qquad (2)$$

Where

CARTH = number of carts per household as a proxy for household capital stock;
DUMMY = 1 if there is a town of size >2,000 in the *pargana*, 0 otherwise;
DESERT = percentage of deserted households in the *pargana*; this is supposed to capture the effect of political turmoil in Khandesh in the period 1800–20;
PLOUGHH = number of ploughs per household; this is added because, generally, ploughs complement carts since both require animal draught;
COWH = number of cows and buffaloes per household;
WASTEH = *beeghas* of wasteland per household. This is included in the COWH equation because in the Sykes database wastelands also include pasture;
e and ε are random shocks with zero mean and a constant variance.

The statistical analysis was carried out after excluding the data on urban places so as to confine the analysis to rural areas only. The hypothesis as I have outlined it involves simultaneity,[57] and hence the method of Two Stage Least Squares[58] was used to estimate the equations statistically.

[57] The independent variable COWH in equation (1) is the dependent variable in equation (2), and the independent variable CARTH in equation (2) is the dependent variable in equation (1).

[58] For an introduction to the method of Two Stage Least Squares for obtaining the values of the coefficients in equations (1) and (2), see D. Gujarati, *Basic Econometrics*, 3rd edn (New York, 1995), 686–93.

Equation (1) tests if access to markets leads to increased capital stock for rural households:[59]

$$\underset{}{\text{CARTH}} = \underset{(0.72)}{0.04\ \text{COWH}} + \underset{(4.03)}{0.10\ \text{DUMMY}^{**}} + \underset{(1.88)}{0.07\ \text{DESERT}} + \underset{(0.26)}{0.05\ \text{PLOUGHH}} - \underset{(-2.5)}{0.07^{*}}$$

RBAR-SQUARE = 0.71

A word on interpreting the above equation might be in order. Here CARTH is called the dependent variable, whereas the variables on the right-hand side are called independent variables. The assumption is that the linear relationship between the two sets of variables is not a determinate one, but is affected by random shocks that are normally distributed with a zero mean and a finite variance.[60] The coefficient of 0.04 (positive) on COWH says that for every one-unit change in COWH, CARTH increases by 0.04 units for Khandesh as a whole. However, we cannot strictly use this interpretation, since the coefficient on COWH is required to be statistically significant as well as positive.[61] Only the coefficient on DUMMY (the variable indicating the existence of a market) is significantly different from zero at the 1 per cent level in the above analysis and has been starred. The intercept (–0.07) is the other number to be found statistically significant. The significant and positive coefficient on the DUMMY variable implies that, on average, the existence of a town with a population larger than 2,000 has a significant positive impact on the holdings of carts per household.

Political turmoil, as measured by percentage of deserted households in the *parganas*, does not seem to have affected agricultural capital stock on a Khandesh-wide basis, since the coefficient on DESERT is not statistically significant. The figure for RBAR-SQUARE gives the percentage variation in the dependent variable that is explained by the variation in the independent variable. In the case of equation (1), it is 71 per cent.

Equation (1) indicates that households with market access actually owned more carts on average and hence owned a greater agricultural capital stock, other things being equal. Yet this by itself does not tell us anything about the effects on farmers' incomes, for the reasons mentioned above. For that, we need to combine the findings of equation (1) and equation (2).

Equation (2):

[59] ** = significant at 1 per cent; * = significant at 5 per cent.

[60] If the independent variables were held fixed, different random shocks would result in different observations of the dependent variable. Such observations we call samples.

[61] By saying, for example, that the coefficient is significant at 1 per cent, we mean that if, keeping the independent variables fixed, we were to carry out the same exercise on 1,000 different samples of the dependent variable, in 990 outcomes we would observe the relevant coefficient to be different from zero. The 't' values (values in parentheses in equations (1) and (2)) allow us to test whether, in a particular exercise, the relevant coefficient is statistically significantly different from zero.

$$\underset{}{\text{COWH}} = \underset{(-5.96)}{-1.67\ \text{DUMMY}^{**}} + \underset{(1.27)}{0.003\ \text{WASTEH}} + \underset{(11.74)}{14.20\ \text{CARTH}^{**}} + \underset{(0.12)}{1.56}$$

$$\text{RBAR-SQUARE} = 0.81$$

Interpreting equation (2) is more complex. Our aim is to see whether household incomes increased with access to markets. According to equation (2), household holding of cows and buffaloes declined with the existence of a town market (since the coefficient on DUMMY is negative and significant). As emphasized above, a household's ownership of cows and buffaloes will depend on its income level (richer households having a larger stock because cows and buffaloes are 'normal' goods) and the variability of household incomes (households with less variable incomes will have a smaller stock, other things remaining the same). If James Scott's argument holds, market involvement should increase household income uncertainty and household holdings of cattle as insurance in highly commercialized *parganas*. On the other hand, if the argument in this article — that households tended to stabilize incomes by access to markets — is true, the household holdings of cows and buffaloes should decrease with market access. This argument cannot be conclusively settled by the negative sign of the DUMMY coefficient in equation (2), because a change in household holdings of cows and buffaloes is compounded of two effects: first, an income effect which, if household incomes are increased through market participation, will increase the stock of cows and buffaloes; and second, an insurance effect that will decrease the household stock of cows and buffaloes.

If a positive income effect (incomes increase with market access thereby increasing household holdings of cows and buffaloes) outweighs a negative insurance effect (households with access to town markets have more stable incomes, reducing their holdings of cattle as insurance), we may actually see an increase in the household stock of cattle.

On the other hand, if a positive income effect is outweighed by a negative insurance effect, we may find a reduction in the stock. If James Scott's argument is true that the encroachment by market relations actually raised the variability of peasant incomes, the coefficient associated with market access in the COWH equation can still be negative if, and only if, peasant incomes fall so much because of market participation that the reduced stock through the income effect outweighs the increased holdings of cows and buffaloes resulting from increased income uncertainty.

Table 4 illustrates the various combinations of income and insurance effects, and the associated signs of the DUMMY coefficient in equation (2) that ought to be observed for each. The negative sign of the dummy coefficient in equation (2) is consistent with $\mathbf{B} > \mathbf{C}$, $\mathbf{D} > \mathbf{A}$, $\mathbf{D} > \mathbf{B}$ and $\mathbf{B} > \mathbf{D}$ in Table 4. To determine which of these four actually occurred, we need to look to the (significant and positive) coefficient in equation

(2), corresponding to carts per household (CARTH). That coefficient can be written as equation (3):

$$\begin{aligned} 14.20 &= (\text{change in COWH})/(\text{change in CARTH}) \\ &= ((\text{change in COWH})/(\text{change in household income})) \times \\ &\quad \times ((\text{change in household income})/(\text{change in CARTH})) \end{aligned} \tag{3}$$

Cows and buffaloes being 'normal' goods, the first quantity (change in COWH resulting from a change in household income) is positive. Hence, for the product in equation (3) to be positive, the second quantity (change in household income/change in CARTH) must necessarily also be positive. Therefore, household incomes must rise if households own carts. And equation (1) shows that households owned more carts if they had access to markets. This implies that households with greater access to town markets necessarily had higher incomes than households lacking such access. This can be written schematically as follows:

urban market availability ⇒ increased carts per household (from equation (1));
increased carts per household ⇒ increased household incomes (equation (3)).

Hence, equations (1) and (2) jointly tell us that our findings are consistent with effect **A** in Table 4, but we still need to determine if market participation raised or lowered the uncertainty of household incomes. The above argument allows us to interpret the coefficient on DUMMY in equation (2). This association is negative from the sign of the dummy. We know from the above that market participation improved household incomes. Thus, we are in the lower left-hand corner of Table 4. The estimated DUMMY coefficient is negative. This, as can be seen from the table, implies that the increased holdings of COWH through increased incomes are outweighed by decreased insurance holdings because incomes are now more stable (**D** > **A**). The main conclusion of section II follows from this argument.

TABLE 4

POSSIBLE THEORETICAL COMBINATIONS OF THE INCOME AND INSURANCE EFFECTS OF MARKET PARTICIPATION BY RURAL HOUSEHOLDS

	Effect of market participation:	
	A: raises household income	**B**: lowers household income
C: increases uncertainty of income	**A** > **C** ⇒ COWH rises (+) **C** > **A** ⇒ COWH rises (+)	**B** > **C** ⇒ COWH declines (−) **C** > **B** ⇒ COWH rises (+)
D: reduces uncertainty of income	**D** > **A** ⇒ COWH declines (−) **A** > **D** ⇒ COWH rises (+)	**D** > **B** ⇒ COWH declines (−) **B** > **D** ⇒ COWH declines (−)

Note: The sign in parentheses is the expected sign of the DUMMY coefficient in equation (2) for each specific combination.