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The State And The Industrious Revolution in Tokugawa Japan

Kaoru Sugihara

Graduate School of Economics
Osaka University

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Department of Economic History
London School of Economics
Houghton Street
London, WC2A 2AE

Tel: +44 (0) 20 7955 7860
Fax: +44 (0) 20 7955 7730

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According to Patrick O'Brien, Smithian growth is a label which includes the formation and integration of markets for land, labour and capital as well as institutional frameworks for the discovery and diffusion of useful and reliable knowledge. The growth is expected to raise the standard of living, and is often supported by the efficient state (O'Brien 2003).

This is certainly not a definition which comes to mind when we reflect on

Another observation is that Buck, responsible for the survey on which Figure 3 is based, suggests that in China, less than 5 per cent of land was used for pasture and virtually no land designated for pasture was reported in Japan, while 57 per cent of land was used for pasture in Britain, 17 per cent for Germany and 20 per cent for Italy

it was never meant to be self-sufficient, and they usually earned their living by working for other people’s land or engaging in proto-industrial work. The average size of farms in England rose substantially

intensive technology and labour-absorbing institutions. In this respect the difference between East Asia and Western Europe was quite marked, and probably became more marked during the seventeenth, the eighteenth and much of the nineteenth centuries.

If pasture was not so important in the earlier period in England either (see Clark 1991: 230-34), the starting point of the two paths may well have been similar from the very long-run perspective, and we need to trace the ways in which they diverged. But the two paths were already on a different course by the seventeenth century, and there was no tendency for convergence of the two paths in the period under review.

The industrious revolution

Pomeranz acknowledges that capital accumulation and the scientific revolution were both necessary conditions for the industrial revolution, but argues that Smithian dynamic was operating in all the core regions of the world, including Western Europe. Far from escaping from the Malthusian trap, Western Europe after 1750 was heading towards the vicious circle of population growth, diminishing returns from land and the tendency towards labour-intensive technology, in the same way as East Asia had been. Thus Western Europe was only to be rescued by the contingent factors (coal and the New World).

I substantially agree with his emphasis on the “great divergence”, but wish to retain my emphasis on the important differences in agricultural technology between the core regions of East Asia and those of Western Europe before 1800 (See Pomeranz 2000: 16-17 for his comments on my work). I also wish to maintain that the typology of the industrious revolution (for an original conceptualisation, see Hayami 1967 or Hayami 1986 and 1992 for brief English summaries) should be first and foremost related to the supply-side differences in factor endowments.

The core regions of Western Europe never experienced the type of land scarcity seen in eighteenth century Japan, and it was in Japan (and the core region of China) that land productivity rose to the extreme. The Chinese ideas

were imported to Japan in book form during the seventeenth century, and were localised and elaborated throughout the Tokugawa period. Thus the development of seed varieties, especially the introduction of middle to late ripening rice varieties in wet land, paved the way to double cropping and the evening of seasonal labour input. Later, the diffusion of dry field-horse ploughing facilitated it through the combination of wet rice cultivation and dry winter crop. The provision of good drainage made proper ploughing possible, which in turn ensured the recovery of soil. The engineering and social techniques of village-based water control were crucial here. The main cash crops involved ranged from rice and wheat to rapeseed, cotton and sugar. That rice was both a subsistence crop and a commercial crop was an important feature of East Asian agriculture. The tendency for the “dual economy” where only the commercialised sector benefited from technological progress seldom occurred as a result.

These improvements were accompanied by greater inputs of manure (dried fish, oil cakes and night soil), as well as by the promotion of “deep digging”. There was also a remarkable development of a variety of agricultural tools, to ease tilling and weeding and to enable women and children to participate in agricultural work. Agricultural manuals were widely read by the end of the seventeenth century, suggesting that there was usually at least one literate person interested in agriculture in each village.

In all of these, the development of labour-intensive technology required the injection of (usually a small amount of) capital. But the combination of land, labour and capital was made, basically to raise land productivity. The labour-saving technology was adopted, only if it served this purpose. Hence technology choice did not always lead to the rise of labour productivity. Although there are differences in important details, the core region of China followed and developed essentially the same path as Japan did in this respect (Li 1990).

The family system and the perception of work were systematically moulded around labour-intensive technology. In Japan the ideology emphasised

without denying the notable divergences in developmental path in East Asia and Western Europe.

The above discussion has so far centred on agriculture. It is now necessary to relate it to proto-industrialisation, in order to link the argument to the typology of Smithian growth. Proto-industrialisation in Tokugawa Japan starts in the second half of the eighteenth century in full force, and proto-industry, especially cotton and silk textiles, shifted its location from high-wage urban/suburban areas to low-wage rural economies during the second half of the eighteenth and the first half of the nineteenth centuries (Saito 1985). It therefore developed a geographical division of labour. The pattern is similar to Western Europe in this respect.

At the same time, a variety of division of labour within the household clearly increased in rural growth economies. Commercial crops, weaving, and temporary migration to serve for the urban service sector, could have been attempted all at the same time by a single household, carefully scheduling the labour allocation of the members of the household, in accordance with fluctuating labour demands of the paddy field. A typical farmer in the first half of the nineteenth century Japan often had more than one job, some of them looking “managerial”. Coordination skills within the household, as well as within the village, became increasingly important. In-house/in-area sophistication, rather than geographical specialisation, was the heart of East Asia’s proto-

different paths. The two paths faced the same kind of constraints on land and other resources, and they responded

Furthermore, the state-promoted growth of the national market provided a framework for the growth of proto-industry at the periphery. As is stated before, from the mid-eighteenth century proto-industrialisation in rural Japan quickened its pace, while urban population declined. However, there was a linkage with the earlier, state-promoted development, in the forms of artisanal transfer, diffusion of accounting methods, and the diffusi

Human-capital channel to economic development

Compared to the core region of China, the degree of Japan's involvement in trade with other countries (or regions) was limited, if we take the entire period and compare them. Japan certainly did not

References

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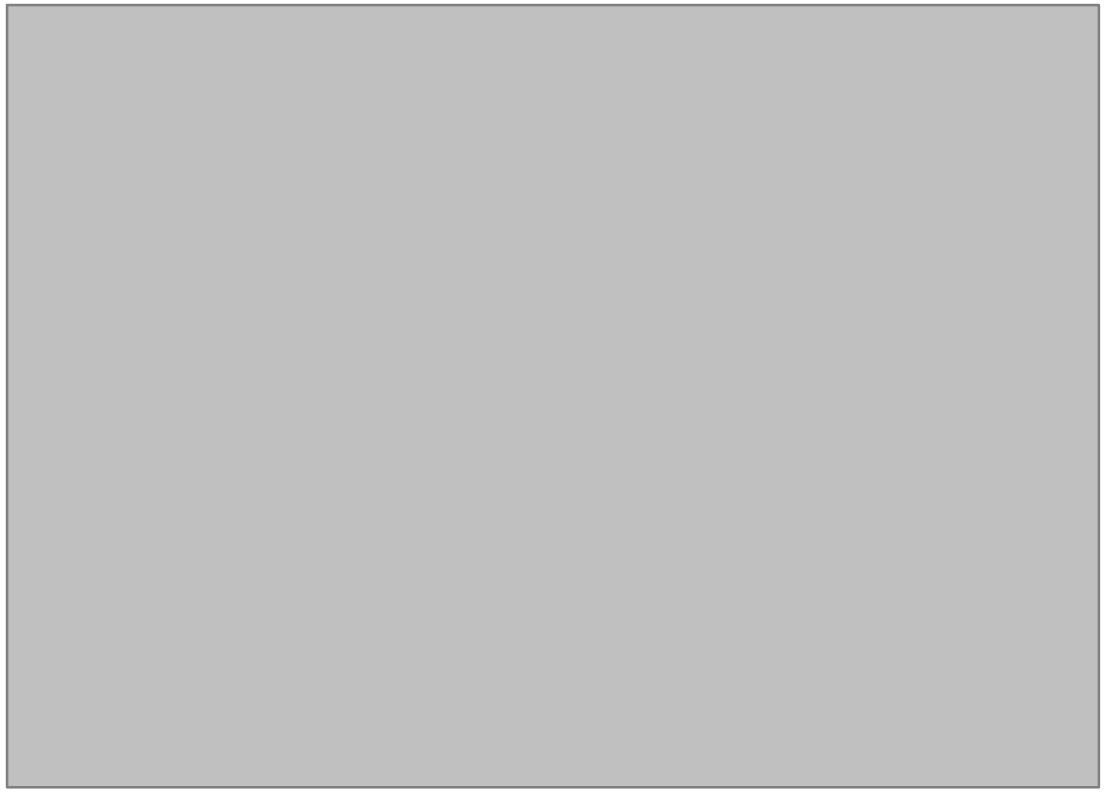

Figure 4 Developmental Path in Agriculture

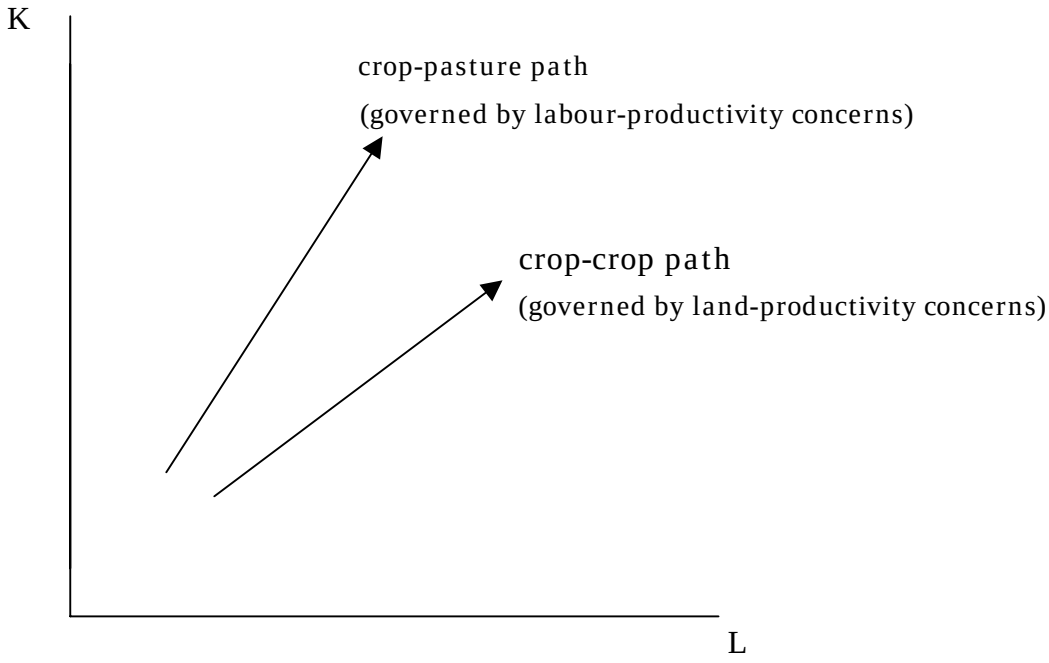

Figure 5　Patterns of Smithian Growth

	crop-pasture path	crop-crop path
regulated	Continental Europe	Japan
unregulated	England	China