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**Pre-Modern Economic Growth  
Revisited: Japan and  
The West**

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# Pre-Modern Economic Growth Revisited: Japan And The West\*

*Osamu Saito*

## **Abstract**

In early modern north-western Europe, real wages declined while GDP per capita was on the increase. In contrast, wage growth in Tokugawa Japan went hand in hand with output growth. Based on this finding, the paper revisits Thomas Smith's thesis on 'Pre-modern Economic Growth: Japan and the West'. It is suggested that the common denominator found in both European and Japanese cases was market-led, 'Smithian growth'. However, unlike north-western Europe, there was no room for mercantile or agricultural capitalism playing a part. Also, Tokugawa growth was not associated with increased income inequality. All this accounted for the slower pace of growth and the absence of any gap between real wage growth and per-capita GDP growth in Japan's pre-modern economic regime.

## **Introduction**

In 1973 Thomas Smith published a comparative account of 'pre-modern growth' in Japan and the West. According to Smith, both Japan and western Europe experienced an increase in industrial and commercial activity before the age of industrialisation and achieved a modest but secular rise in per capita output over the early modern period.

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Despite such a parallel in output growth, however, the two regions exhibited a marked contrast with respect to urbanisation. Pre-modern growth in the West was accompanied by urban growth, whereas in the latter half of Tokugawa Japan a majority of towns and cities lost population. This must have been a reflection of fundamental differences, argued Smith, in the ways in which output growth was achieved in early modern Japan and western Europe. In the European towns, foreign trade and population totals all grew, so that the size of its economy expanded, whereas Tokugawa Japan managed to achieve an increase in per capita output with its economy becoming autarkic, population stagnant and urban commerce outplayed by the rural sector. Smith thus called the west European pattern of pre-modern growth 'urban-centred' and the Tokugawa pattern 'rural-centred'.<sup>1</sup>

In the present essay I should like to revisit this thesis of pre-modern growth. Three comments may be made with respect to Thomas Smith's approach in his classic essay. First, in his 1973 paper, much effort was directed to demonstrating that many castle towns lost population in the second half of the Tokugawa period while little attempt was made to explore quantitative aspects of growth itself. Today, what he tried to establish for Tokugawa Japan is widely accepted and, on the other hand, we are now in a better position to substantiate the quantitative aspects of growth. Thanks to most recent efforts in this

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<sup>1</sup> Smith, 'Pre-modern economic growth', reprinted in his collection of essays, *Native sources*, pp.15-49. For an appraisal of Thomas Smith's work on Japanese economic and social history, see Saito, 'Bringing the covert structure'.

research area, we are reasonably sure that the average growth rate observed in the early modern West, especially in north-western Europe, was higher than in Tokugawa Japan.<sup>2</sup> Although it is not incorrect to say that there occurred output growth in both Japan and western Europe, and that the magnitude of growth was modest by late nineteenth- and twentieth-century standards, such quantitative differences in growth rates should also be taken into explicit consideration when re-examining the thesis.

Second, there is a question concerning the nature of pre-modern growth. Although Smith suggested that industry and commerce in the countryside were more important in explaining Tokugawa Japan's pre-modern growth, he did not explicitly address how such rural development was achieved. In the recent historiography, however, there are scholars who maintain that early modern growth was generally market-led, and as such it operated not only in western Europe but in East Asia as well. Drawing on studies of late imperial Chinese core regions such as the Lower Yangzi and, to a lesser extent, of Tokugawa Japan, Ken Pomeranz has set forth an argument that until the end of the early modern period East Asian market economies were as brisk as those in western Europe, and hence both regions achieved what is, after Joel Mokyr, called 'Smithian growth'.<sup>3</sup> Termed in honour of Adam Smith, it

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<sup>2</sup> For example, Maddison, *World economy* extended GDP estimates back to the pre-1800 periods for all the countries in the world, and van Zanden's 'Early modern economic growth' and 'Cobb-Douglas' have set out new estimates of GDP for early modern European countries, while Allen's 'Real wages' attempts an East-West comparison in real wages.

<sup>3</sup> Pomeranz, *Great divergenc*; and Wong, *China transformed*, pp.13-32. For Smithian

is a process created by an increased division of labour and consequent growth in productivity through specialisation. As such it is thought to have operated 'from the bottom up', to be distinguished from laws of motion that characterised pre-industrial 'capitalists' in the Braudelian sense (in which it was the existence of separate price regimes that created conditions for profiteering: distance was an important one, but other factors such as favours and privileges from kings and emperors also played a significant role).<sup>4</sup> Since Tokugawa Japan too saw market forces operating in both urban and rural settings, it is interesting to ask whether or not her pre-modern growth was 'Smithian', and how the contrast between the Japanese and the European patterns can be re-stated in relation to this notion.

Third, there is a question of consequences, i.e. social stratification and inequality among the social classes, on which Thomas Smith made an important point but did not go further. He drew our attention to the differential effects pre-modern growth brought on class change. In Tokugawa Japan, he noted, no gains went to urban merchants, nor to the ruling samurai class; instead, it was rural entrepreneurs who gained.<sup>5</sup> This was taken by Smith to imply that later-day industrialisation had rural origins, suggesting a historical link between pre-modern growth and Meiji industrialisation. Interesting as the argument was, this diverted his attention from the comparison of consequent income inequality between

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growth, see Mokyr, *Lever of riches*, pp.4-6, where he identified four processes of economic growth. The other three are Solovian, Boserupian and Schumpeterian.

<sup>4</sup> Braudel, *Wheel of commerce*, pp.374-85.

<sup>5</sup> Smith, 'Pre-modern economic growth', pp.151-56.

the two modes of pre-modern growth. However, although Smith did not examine wages and earnings of lower-rank working people, his observations of the differential effects will suffice to suggest that output growth in Tokugawa Japan was not accompanied by widening class differentials in, perhaps, marked contrast with the West where inequality is likely to have risen during the early modern period. Of course, this is a statement that ought to be substantiated empirically, but it is likely that the inequality issue was closely linked with mechanisms by which output growth was achieved. And as such, it is the question of whether or not we can distinguish different kinds of pre-modern growth by using both per-capita output and income distribution as yardsticks.

The task of this article is thus three-fold. First, I begin the re-examination of the Smith thesis with more quantitative, two-way comparisons. For both Japan and western Europe, per capita output growth, a summary measure of economic growth, is compared with the trend in real wages, a measure which is likely to have reflected the changing income level of working population rather than that of middling-sorts of people. It will be shown in Section I that in early modern north-western Europe, real wages declined while GDP per capita increased. In contrast, Section II will show that Tokugawa Japan's wage growth went hand in hand with output growth. Second, several factors that are thought to have accounted for this contrast will be examined: population pressure, urbanisation and foreign trade, rural industrialisation and agricultural growth, and an 'industrious revolution' in Jan de Vries's

sense.<sup>6</sup> This will be conducted in Section II for western Europe and more fully in Section III for Tokugawa Japan. In the final section of the paper, the north-west European and Japanese paths of pre-modern growth will be re-stated in terms of sources and consequences of growth. The point is to what extent each path was a market-led Smithian process, to what extent it was guided by ‘capitalist’ forces as differentiated from genuine market forces, and to what extent the growth process bred income inequality.

## **1. Early Modern Europe**

As is well known, almost all European real wage series so far examined exhibit a secular declining trend over the period c.1500-1800.<sup>7</sup> There were fluctuations within the three-century period, and the magnitude of decline was greater in southern than in northern countries. Yet the long-run tendency was unambiguously on the decline in almost all European regions during the early modern period. However, this story of declining real wages does not necessarily mean that the average European family became poorer and poorer. On the contrary, as some recent attempts to estimate pre-industrial GDP figures show, it is likely that GDP per capita increased over time, at least in some of the regions. Table 1, based on Robert Allen’s recent compilation of real wage data

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<sup>6</sup> de Vries, ‘The industrious revolution’.

<sup>7</sup> Phelps Brown and Hopkins, ‘Seven centuries’ and ‘Wage-rates and prices; Braudel and Spooner, ‘Prices in Europe’; van Zanden, ‘Wages and the standard of living’ and ‘Revolt of the early modernists’; Allen, ‘Great divergence’ and ‘Real wages’.



and Jan Luiten van Zanden's most recent per-capita GDP estimates, summarises these changes between 1500 and 1750 for three north-western countries of Belgium, Britain and the Netherlands, three of the best performed nations in early modern Europe, and for two southern countries of Italy and Spain.<sup>8</sup> According to this table, GDP per capita in the north-east grew at the average annual rate of 0.22 per cent, as a result of which the material standards of living almost doubled over the 250-year period, but workers of those countries in 1750 received wages 10 per cent less than those in 1500 in real terms. This conclusion holds even for England, the country heading for the first industrial revolution, although growth of per capita output was somewhat stronger and the degree of decline in real wages a little milder than those in the Low Countries. In the south European case, macro-economic performance was much poorer: the Italian and Spanish macro economies recorded negative growth, so did their real wages. Yet what is striking in the table is that the two indicators of living standards went divergent in both north-western and southern cases. The rate of change in real wages lagged substantially behind that of GDP per capita, irrespective of whether it was positive or negative, a phenomenon which is often called an early modern European paradox.<sup>9</sup>

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<sup>8</sup> Allen, 'Progress and poverty', and 'Great divergence', pp.93-116; and van Zanden, 'Cobb-Douglas', Table 3.

<sup>9</sup> van Zanden, 'Cobb-Douglas' gives estimates for Poland as well. If Poland is representative of the whole eastern region, then it seems that Eastern Europe's performance resembled that of southern Europe.

One can of course question the accuracy of those figures. Some may cast doubt on the usefulness of real wages. In particular, a substantial decline observable for England could have been an artefact since some nominal wage data are institutional and hence unusually sticky, and since real wage estimates are often sensitive to the choice of a deflator series of prices. However, it is worth remembering that such alterations in the ways in which real wage series are calculated will certainly change the estimated rates of decrease but hardly affect the fact that they were on the decrease. On the other hand, there are scholars who are sceptical about any macro-economic measures like GDP as they are sometimes arrived at by making strong assumptions. However, it is worth noting that van Zanden's recent benchmark estimates of GDP are made so as to become consistent with the existing series of real wages as well as population and rents.<sup>10</sup> Moreover, there is some more direct evidence for the view that people did get richer. Studies of inventories and similar sources point to a steady increase in personal possessions during the early modern period. According to English and Frieslandic data, for example, the proportions of families possessing tableware, furniture, interior goods and clothes unambiguously increased from the seventeenth to the eighteenth century. The percentages were higher in big cities than in the countryside and also higher among upper-class than among lower-rank families, but detailed breakdowns of the data suggest that north-west European material culture as revealed in the mirror of

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<sup>10</sup> van Zanden, 'Cobb-Douglas'.

consumer durables spread gradually from the city to the countryside and from the wealthy to the upper middle, then to the lower middle, over the early modern period. Although they are all in stock measures, the whole story of inventories is not inconsistent with the change in macro flow measures such as GDP per capita. This indicates that even for the best-performers of all European countries, the early modern stories of market wages and of the aggregate world of consumer goods do not agree with each other.<sup>11</sup>

For this paradox, a variety of factors and explanations are suggested. There are some macro arguments, which centred on the decline of real wages in the sixteenth and seventeenth centuries. One theory looked to the price revolution brought about by the influx of precious metals from the New World, and there has been a debate with those who saw a mounting population pressure exerting a far greater negative impact on the levels of real wages throughout Europe. The latter approach is basically Malthusian. Although there are some significant differences between the two types of Malthusian models, i.e. the positive-check and preventive-check, there is evidence that the adverse effect of the size of population on the real wage rate via food prices existed across Europe in the early modern period: in England, according to Tony Wrigley and Roger Schofield, there was a clear correlation between the rates of increase in population and in the basket of

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<sup>11</sup> de Vries, 'Peasant demand patterns' and 'Purchasing power and the world of goods'; McKendrick et al., *Birth of a consumer society*, pp.9-33; and Weatherill, *Consumer behaviour*.

consumables index until about 1780, while for Europe as a whole a similar relationship seems to hold from the thirteenth to the early nineteenth century. Since the genuine size effect of population on economy at large may have been either neutral or even positive through the Boserupian effect, this demographic impact may well have been powerful enough to widen the courses of per-capita GDP and real wages.<sup>12</sup>

Apart from the population factor, Thomas Smith thought that the key in distinguishing the European from the Japanese pattern was the expansion of foreign trade and its consequence, urban growth. There has long been the debate to what extent mercantile capitalism, bridging separate price regimes and thus collecting handsome profits from long-distance trade, was decisive in European growth. Trade with the New World, Asia and Africa, which resulted in the rise of the Atlantic economy in the eighteenth century, on the one hand, and in European hegemony in the Indian and other Asian seas, on the other, was undoubtedly a significant phenomenon. Equally significant, however, was trade within Europe including the Levant, whose seventeenth-century growth was accompanied by a gradual but decisive shift in the centre of gravity of international trade from the traditional Mediterranean to the emerging North Sea area. One important consequence of increasing foreign trade of the latter type was urban growth in north-west European

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<sup>12</sup> For the evidence on the population size effect on food prices and real wages, see Wrigley and Schofield, *Population history*, pp.402-12, 466-80; and Slicher van Bath, *Agrarian history*, pp.102-12. On the other hand, Boserup's *Population and technology* argues that the influence of population size on technology was also at work in history.

countries. This is partly because 'Capitalism and towns were basically the same thing in the West', as Fernand Braudel puts it. Towns' long-distance trade often ended up with a link-up with the state in the form of give-and-takes between loans and privileges.<sup>13</sup> However, metropolises grew not necessarily because of their relations with the state. More important is that as in the case of Amsterdam and London, their activity in foreign trade created a large variety of related but separate occupations ranging from those in dockyards, warehouses and in transport to more professional occupations in banking, insurance and law. Smith saw a link between foreign trade and the demand for labour in towns, and hence growing foreign trade and population increase. However, he did not go further as urban demography was not the issue he intended to examine in his paper. More unfortunate, perhaps, is that he stopped short of making a comment on the possibility that urban growth of that type ultimately gave rise to the emergence of a middle class, whose purchasing power must have carried increasing weight in the national economy. This had an important implication for income distribution since their existence must have made class divisions from the very rich down to the labouring poor more or less continuous. Also important is the possibility that it helped raise the computed level of GDP per capita in the north-west European countries even when the earnings level of the labouring poor remained stagnant in real terms.

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<sup>13</sup> Braudel, *Structure of everyday life*, pp.512-14.

The second group of factors concerns the rural sector. Although Thomas Smith called the European pattern 'urban-centred', he emphasised that much of European industrial history before the factory was a story of its spread into the countryside. Since he found a parallel process in the Japanese countryside, this means that Smith identified rural industrialisation as a common denominator in pre-modern growth at both ends of Eurasia. However, we now know that this process of rural industrialisation in north-west European regions was associated with two other changes. One is the rise of wage labour and the other an increase in capital intensity in agriculture. Franklin Mendels's thesis of proto-industrialisation was an attempt to explain the increase in the number of wage labourers in both rural industrial and farming regions. What he set out in order to explain the formation of de facto proletarian populations was a variant of Malthusian theory, and whether or not this demographic model would fit the early modern European reality is highly debatable.<sup>14</sup> Whatever the mechanism, however, historians will all agree that the size of the wage labour force grew over the period in question, and that at the other end of the spectrum landlords and farmers, especially those in England and the Low Countries, became increasingly willing to invest in farming. As a result of this, and also as a result of Europe's initial factor endowments, north-west European agriculture became extremely capital intensive. Indeed, a cursory inspection of both capital stock and labour force data for Britain in 1760 indicates that the

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<sup>14</sup> Mendels, 'Proto-industrialization' and 'Agriculture and peasant industry'. For debates, see for example Ogilvie and Cerman, *European proto-industrialization*.

level of capital intensity was far higher in agriculture than in manufacturing: capital stock per family in agriculture stood at £166 as against £75 in manufacturing (both in 1851-60 prices).<sup>15</sup> For the Netherlands, Jan de Vries and Ad van der Woude note that the capital-labour ratio must have risen to 'unprecedented heights' because of substantial investment in wind-powered industrial installations, ocean shipping and agriculture. Although it is unfortunately not possible to quantify the relative contributions from each of the three sources, this may be taken to suggest that in Dutch agriculture too the capital stock per worker was substantially high.<sup>16</sup> In these north-west European countries, therefore, capitalist agriculture established itself before the modern phase, which in turn acted as a force to widen income differentials in agrarian society.

Finally, there is a thesis that is an explicit attempt to explain the early modern European paradox. In the article on the 'industrious revolution', Jan de Vries argues that the key to understand the paradoxical gap between an increasing standard of material possessions and a declining level of market wages is in a revolutionary change in household behaviour. A decline in the real wage rate reflects an increase

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<sup>15</sup> Feinstein, 'National Statistics' (p.448) gives stock values of agricultural and manufacturing capital as £153 million and £22 million respectively, while according to Lindert and Williamson, 'England's social tables' (pp.396-97), the number of agriculturist families and labouring families in the countryside (including cottagers and paupers) is 758,000 and that of families manufacturing 240,000. As Feinstein's stock figures are for Great Britain while Lindert and Williamson's workforce figures are for England and Wales, adjustment is made with the share of Scotland assumed to have been 18 per cent for working population (Schofield, 'British population change', p.93). See also Allen, 'Agriculture'.

<sup>16</sup> de Vries and van der Woude, *First modern economy*, p.694.

in their supply of labour to labour markets while an increase in the value of household possessions can be taken to imply their increased demand for commodities sold at market places. Both are, it is argued, the two sides of the same coin because purchased commodities are substitutes for home-produced goods, i.e. what development economists call Z goods. Those goods used to be produced by their own labour, but now the corresponding or an even increased amount of labour should be turned to activities which will bring cash earnings to them. Because of this supposed change in household behaviour, de Vries called the process an 'industrious revolution'. A succinct summary of de Vries's argument, therefore, is that the substitution of wage labour for Z goods at the household level accounts for the divergent courses of change in the wealth of material possessions and in the level of real wages. This is an attractive hypothesis, and the ways in which de Vries links quantified macro observations to behavioural change within a micro-level explanatory framework is methodologically appealing. However, whether this hypothesis can be supported by empirical evidence is a different matter, perhaps, even for the north-western European regions.<sup>17</sup>

Theoretically, some of the theories are not compatible with each other while some are complementary. However, I shall not dwell on the cross-examination of those theories. What I should like to do instead is to draw attention to two sets of implications that all the evidence points to, the evidence brought to light by the scholars writing on the issues of

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<sup>17</sup> de Vries, 'The industrious revolution' and 'Purchasing power'.



overseas trade, mercantile capitalism, proto-industrialisation, agrarian capitalism and the 'industrious revolution'. It suggests, first, that in the north-west European case sources of growth must have been plural. Undoubtedly there was a 'Smithian' process, with which the division of labour increased and its effect on labour productivity came to be felt through specialisation. Yet, 'capitalist' elements were also there. One was mercantile capitalism, without which the contribution of foreign trade to Europe's growth must have been much smaller.<sup>18</sup> The other element was agricultural capitalism in England and the Low Countries, whose significance should be distinguished from the mercantile mode of capitalism since agricultural growth in the north-west European countries was made possible through investments in fixed capital. The contributions of both elements must have been added on those from the 'Smithian' processes in early modern growth accounting.

Second, it is likely that the early modern level of income inequality in Europe was already high, and more importantly, that in both urban and rural society forces to widened class differentials must have been at work during the period in question. Indeed, thanks to English political arithmetic, we have some statistical evidence concerning class differentials in income distribution. According to the estimates based on

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<sup>18</sup> Allen's simulation study indicates that trade did accelerate growth of England. In relation to this finding, he places more significance on seventeenth-century intra-European trade boom than on eighteenth-century American and Asian trade. On the other hand, he finds the enclosure movement making no so significant contribution to total factor productivity in agriculture. His interpretation of this result is that capitalist farmers responded to changing circumstances by increasing their investments in farm structures and other assets, not the other way round. Allen, 'Progress and poverty', pp.427-32.

Gregory King's work for 1688 and Joseph Massie's for 1759, the top 10 per cent of the English society earned 44 per cent of the nation's income whereas the bottom 40 per cent group's share was as little as 11 per cent. It was a society in which the rich in both urban and rural sectors were extremely rich while a large proportion of the nation's population, especially of the rural population were those who lost access to the means of production. The Gini coefficient, a summary measure of inequality, is estimated to have been well above 0.5 for seventeenth- and eighteenth-century English society, comparable only to present-day Latin American levels.<sup>19</sup> Moreover, it is likely that the proportion of the proletariat to the total rural population increased in the seventeenth century and after, because King's 1688 table suggests that the proportion proletariat was 43 per cent or well over 50 per cent if rural population is singled out, while at the end of the sixteenth century the rural proportion is said to have been in the range of one-fourth to one-third.<sup>20</sup> Moreover, a recent work by Philip Hoffman et al. has shown that price movements magnified a prolonged rise in nominal income inequality across Europe during the early modern period.<sup>21</sup> It is, therefore, safe to conclude that

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<sup>19</sup> Estimates of the income shares and Gini coefficients are those 'with paupers' for England and Wales by Lindert and Williamson, 'Britain's social tables'.

<sup>20</sup> Proportions of proletariat population are calculated from revised Gregory King's head counts (Lindert and Williamson, 'England's social tables', pp.388-89), with the categories of 'labouring people and out-servants', and 'cottagers and paupers' combined; and from Everitt, 'Farm labourers', p.398. For general trends in the proportion of the poor or proletariat, see Tilly, 'Demographic origins', pp.26-36; Lis and Soly, *Poverty and capitalism*, chs.3-4; Woolf, *The poor*, chs.1-2; and Jütte, *Poverty and deviance*, ch.4.

<sup>21</sup> Hoffman, Jacks, Levin and Lindert, 'Sketching the rise of real inequality'.

pre-modern growth in western Europe was associated with a distinct social structure and with a process of widening inequality.

## **2. Real Wages and Output in Tokugawa Japan**

We now turn to Tokugawa Japan.<sup>22</sup> The Tokugawa period is divided into the expansion phase of the seventeenth-century and the stasis phase of the eighteenth and early nineteenth centuries. In the seventeenth, population, land area and output all grew while overseas trade boomed in the first half of the century but started declining after the shogunate imposed strict control on trade with foreign merchants in the 1630s. On the other hand, the period after about 1700 saw population and land more or less stagnant and the contribution of overseas trade to the nation's economy becoming increasingly small. What we have to do first is to establish the Japanese pattern in terms of per capita output growth and changing real wages so as to be comparable with the west European pattern. Unfortunately available data are extremely limited for the period before 1700, which forces us to concentrate on the period after 1700. It is this period, however, for which Thomas Smith talked of pre-modern growth.

Since the Tokugawa government adopted rice as a kind of numeraire for land property and tax assessment purposes, there is a macro measure called *kokudaka*, whose value is available at about

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<sup>22</sup> Hayami, Saito and Toby, *Emergence of economic society* contains some detailed accounts of key aspects of the Tokugawa economy.

half-century intervals. The *koku* is a unit of capacity measure used for rice, so that the *kokudaka* (literally amount of *koku*) can be regarded as total farm output expressed in terms of rice equivalents at any point of time in the Tokugawa period, if the yield per unit of land was accurately assessed by Tokugawa officials, or if the productivity of land changed little over time, or both. As a matter of fact, however, land productivity did increase and the gap between actual yields and the assessed yields officially set for taxation purposes widened from the early eighteenth century on. Satoru Nakamura compared the *kokudaka* figure for 1872, the year in which the old samurai territories were formally abolished, with total farm output from a survey of farm products compiled by the new Meiji government for the same year. Then the difference between these output measures in 1872 was allocated over the entire period in question according to the period-by-period numbers of productivity-enhancing land-improvement projects undertaken by samurai administrations during the Tokugawa period. This method thus enabled him to give a reasonably accurate estimate of revised output of farm products for each benchmark year. Since 'farm products' in the 1872 statistics covered not only agricultural products in the strict sense but also some processed farm products such as raw silk, the Nakamura series of Tokugawa farm output will capture much of the changes that took place in the nation's aggregate product. On this fairly robust basis, Angus Maddison went further to speculate on per-capita GDP figures with non-farm products assumed to have grown substantially faster than farm output. Although there is not much evidence

that supports this addition, a growth rate derived from his calculations is likely to reflect the upper limit of a range we may allow for. Despite these rather speculative aspects of macro estimation, however, it should be remembered that output estimates for Tokugawa Japan are on firmer ground than for some of the west European countries.<sup>23</sup>

On the other hand, there remains some uncertainty with respect to the course of real wage movements in the eighteenth and nineteenth centuries. One problem is data coverage, both temporal and geographical: sources are much scarcer for the eighteenth than for the nineteenth century, and as far as eastern Japan is concerned, almost all series cannot go back beyond 1800. There are regional differences in other aspects, too, more specifically between the Kinai (a region around Kyoto and Osaka) and the Kanto (a region around Edo, later Tokyo), which are closely related to Tokugawa Japan's peculiar monetary system (the east was a gold-using and the west a silver-using zone), *plus* a problem of linking the Tokugawa series to that of the Meiji period, in which a new monetary system was adapted. On the more technical side, since there is no long-run series of wage data for one homogeneous occupation, we have to link one to another and this gives rise to questions of how to link the eastern with the western series, and how to weight skilled and unskilled occupations as there is no single labour market in any period of time. Also significant is the type of data source. A

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<sup>23</sup> Nakamura, *Meiji ishin*, pp.168-74. See also Maddison, *World economy*, pp.254–58 and 264, where his per-capita GDP estimates are set out together with the Nakamura estimates converted into kg per capita terms.

majority of the data come from wage books and similar business accounts. But a significant proportion of them are more or less institutional in character, while some others are compilations by guild and trade associations. Indeed, data for building craftsmen in Edo compiled retrospectively by Meiji trade associations and a real wage series estimated from these data by Yoko Sano, while showing very volatile short-term movements, undoubtedly gives us an impression that real wages were rising between 1830 and 1894, and this was one of the most frequently quoted real wage evidence for nineteenth-century Japan.<sup>24</sup> In my 1998 book I addressed all these questions and sorted them out, but stopped short of providing a single, continuous real wage series running through the entire period in question. The latter task has recently been revisited in a separate paper, where two real wage series are linked for the period 1700-1870. The two data series are neither institutional nor retrospective, and the link is made with annual rates of change, one computed from a weighted average series, 1727-1820, for village carpenters and agricultural day labourers estimated from wage books of a wealthy farmer near Osaka, and the other taken from a composite real wage index series, 1820-1867, for soy source makers, calculated from a Choshi manufacturer's business records, both of which are thought to have represented the general pattern of change in each period better than any other data series. The 1700 and 1870 estimates are extrapolated from the 1727-1820 and 1820-1867 trend lines respectively,

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<sup>24</sup> Sano, 'Kenchiku rōdōsha'.

which enable us to calculate an average annual rate of change in real wages over the period concerned. Since the real wage index underwent a cycle of upward and downward phases over this 170-year period, it is important not to compare a trough with a peak or vice versa. The 1700-1870 comparison is thought to have been a trough-to-trough one.<sup>25</sup>

Table 2 compares the annual rate of real wage increase thus estimated with those of two per capita measures, i.e. farm output and Maddison's GDP estimates (which is likely to have been somewhat overstated). Three observations may be made. First, it is clear from the table that not only the growth rate figures for output but the rate of change in real wages are also positive. Although real wages underwent a rise-and-fall cycle, this trough-to-trough comparison in the real wage index does indicate that the long-term tendency was on the increase: the average annual rate of increase over the period was 0.10 per cent. Second, output figures suggest that there occurred pre-modern growth, but that the tempo of growth was slower in Tokugawa Japan than in north-western Europe. The Japanese rate was in the range of 0.10-0.15 per cent but probably closer to 0.10 per cent, so Tokugawa Japan's growth was at half the speed of the north-west European average of 0.22 per cent. Third, there was not much gap between the average rate of output growth and the rate of real wage increase. Admittedly these are not results of a tuned up comparison of robust estimates. Each is subject to a certain range of errors, so that not much importance should be

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<sup>25</sup> Saito, *Chingin to rōdō*, 'Tokugawa labor market', and 'Wages'.

attached to either an agreement or a difference in the second digit after the point. What Table 2 can indicate, however, is that both real wages and per capita output grew at a similarly slow tempo. In other words, there was no 'paradox' for Tokugawa Japan.

### **3. Factors of Growth in Tokugawa Japan**

This finding leads us to ask why Japan's wage growth, unlike north-western Europe's, did not diverge from her output growth. In order to answer the question, we have to examine the same range of theories as in the European case, i.e. the factors that are thought to have affected the ways in which pre-modern growth took place: population and macro economic change, overseas or long-distance trade, urban growth, rural industrialisation, agricultural growth, and a hypothetical shift in household behaviour.<sup>26</sup>

One of the salient features of Tokugawa economic and social history is, as pointed out by Smith already, stagnant population. When the shogunate took a survey for the first time in 1721 the commoner population was 26 million and it remained on that level as the 1846 survey counted 26.9 million. However, as Akira Hayami argues, it is most likely that the seventeenth century saw a strong population growth. He suggests that the average rate of increase may have been a little more than 1 per cent per annum during the seventeenth century, while others think the Hayami estimates probably too high. I too believe that the actual

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<sup>26</sup> The following accounts draw substantially on Saito, 'Zen-kindai keizai seichō'.



rate of growth from 1600 to 1700 was on the moderate side because, unlike Hayami's supposition, population started to increase well before 1603, the year when the Tokugawa came into power and the prolonged period of warlords was finally put to an end. Whichever the estimates, however, it is certain that population increase took place in the seventeenth century.<sup>27</sup> Also certain is that farmland increased during the century, so did farm output as the Nakamura estimates clearly indicate (19.7 million *koku* in 1600 to 30.6 million *koku* in 1700).<sup>28</sup> What is not quite certain is whether or not there occurred growth in per capita terms. It is not likely that farm output fell in per capita terms, since it was the reclamation of fertile, lowland marshes that made both paddy fields and population increase, and since there was probably some increase in non-farm output also. Unfortunately no records exist for real wages in this period. But there is no evidence that the output growth significantly outperformed population increase, either. The seventeenth century was a period of expansion but not of strong growth in per capita terms. Towards the end of the century population started tapering off and became stagnant from the beginning of the eighteenth. One might expect that such a stagnant population was a consequence of Malthusian checks such as crop failure and famine. In fact, there is evidence that the rate of change in overall population was associated with the frequency of

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<sup>27</sup> Hayami, 'Population', and *Historical demography*, pp.43-46. The Tokugawa shogunate's surveys, 1721-1846, are compiled in Sekiyama. The extended series of Tokugawa population totals based on the Hayami estimates is set out in Miyamoto, 'Quantitative aspects', p.38, while Maddison, *World economy* (p.237) gives alternative estimates.

<sup>28</sup> Nakamura, *Meiji ishin*, p.170.

famines during the Tokugawa period. However, a close look at the evidence reveals that it was not necessarily because famine heightened mortality levels, but because it tended to further reduce fertility whose background levels were already low. This fertility-reducing effect was particularly marked in the famine-stricken north-eastern region.<sup>29</sup> Even in the other regions, however, the eighteenth and early nineteenth centuries was a period characterised by low-to-intermediate levels of total marital fertility, relatively high levels of life expectancy at birth, and hence low rates of natural increase (in central Japan, for example, the estimated total marital fertility rate and life expectancy at birth were 6.5 births and 39 years respectively).<sup>30</sup> It is indeed this period that saw a slow but steady per capita growth, in which population did no longer play a major role.

Nor did foreign trade play a role, either, during much of the Tokugawa period. Here, the so-called 'seclusion' policy adopted by the shogunate exerted a serious constraint on the Tokugawa economy. It is often argued that the Tokugawa government never closed the country, and what they actually did in the 1630s was to bring overseas trade under the shogunate's tight control.<sup>31</sup> However, it should also be realised that the long-run effect of that policy was far-reaching: the volume of trade with foreign countries declined substantially and eventually reached a negligible level in the eighteenth century. The absence of trade on a

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<sup>29</sup> See Saito, 'Frequency of famines', p.148.

<sup>30</sup> Tomobe, 'Shizen shusshōryoku', and Saito, 'Infant mortality', pp.135-53.

<sup>31</sup> Tashiro, 'Foreign trade' argues that there existed trade with foreign countries even under the 'seclusion' regime. However, she also emphasises that Tokugawa Japan successfully reduced reliance on imports and, hence, outflow of silver by the eighteenth century.

cross-cultural scale, as Thomas Smith stressed, must have had an adverse effect on the mercantile community who had once traded extensively with Asian neighbours and European traders before the 1630s. For a short period of time even after the 'seclusion', the advance of coastal shipping into remote regions within the country may have had a similar function to long-distance trade, but as the trade with such regions became more regular and orderly, their profit levels started decline.

Under such circumstances, it is documented, a new type of merchants emerged around the turn of the seventeenth century. They were no longer of the merchant-adventurer type who sought large profits by trading between two different price regimes. They were those who attempted to earn profits, as Matao Miyamoto puts it, by securing high rates of turnover of capital and merchandise 'with low margins'. Based in Osaka, the commercial centre of the day, they were in many cases specialised in trading one commodity or two while the size of their trading was comparatively large. It was not just the volume of transactions that was large, but their firm size was also large. It was no longer a one-man business. The business came to have a multi-unit, multi-departmental structure. The case in point is the House of Mitsui. As is the case today, the Mitsui was already a conglomerate with each firm having several branch shops and offices in Kyoto, Osaka and Edo (present-day Tokyo), but the whole business was centrally managed and controlled.<sup>32</sup> The firm became organisationally so large that its apprenticeship eventually

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<sup>32</sup> Miyamoto et al., *Nihon keieishi*, pp.18-19. See also Nakanishi, 'Kinsei-kindai no shōnin', pp.151-58.

transformed itself into an internal labour market, which centred on on-the-job training and internal promotion.<sup>33</sup>

All this suggests that Tokugawa Japan witnessed the emergence of a kind of modern corporate economy and a mature urban economy. Indeed, the level of urbanisation was already high in the seventeenth century. The percentage urban, defined here as the proportion of towns with population of 10,000 and over, was well over 10 per cent throughout the Tokugawa period. The percentage urban in 1650 is recently estimated to have been about 12 per cent, which is a little higher than the percentage for the whole European area in 1750 (10 per cent), though unmistakably lower if compared with England and the Low countries (17 and 25 per cent respectively). This relatively high urbanisation ratio was probably a product of Tokugawa Japan's peculiar states system. It had a dual structure comprised of the shogunate, the largest daimyo who undertook much of what any central government was expected to do, plus some 300 daimyo territories called *han*. The size of the *han*, expressed in terms of rice equivalents, was more or less evenly distributed between 1,000,000 to 10,000 *koku*. In each *han* there was a castle town, and since the population of the castle town was largely determined by the size of the *han*, the rank-size curve of all towns with Edo having the population of 1,000,000 tended to be fairly close to the normal distribution. This is undoubtedly a factor which kept the early Tokugawa level of urbanisation comparatively high. However, as Smith

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<sup>33</sup> Saito, *Edo to Osaka*, ch.4; Saito, 'Changing structure'.

found, it is those castle towns, together with Osaka and some other metropolitan cities, that declined during the eighteenth and early nineteenth centuries. A majority of castle towns for which Smith collected data lost population more than 10 per cent, sometimes over 30 per cent, from the eighteenth to the early nineteenth century. Osaka decreased its population by nearly 20 per cent from the peak period in the eighteenth century to 1850 while Edo went through a phase of serious decline followed by mild recovery. Instead, smaller towns, especially 'country' towns grew. The population size of such country places was in almost all cases in the range of 10,000-1,000, and they grew through the expansion of industry, commerce and transport in the countryside. Indeed, the lists of such places, which can never be complete, include port towns on the Japan Sea coast, market towns in the inland Tohoku, and a couple of silk towns in the Kanto. The decline of Osaka's population and that of castle towns of the size category of 10,000 or over should be seen as casualties of such rural growth. The overall proportion of towns over 10,000, therefore, decreased. According to the recent estimates, the percentage urban thus defined stood at 13.5 per cent in 1750 but declined to 12.4 per cent in 1850, and the rank-size distribution of towns became somewhat flatter on the right-hand side.<sup>34</sup>

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<sup>34</sup> Smith, 'Pre-modern economic growth', pp.130-42. As for population movements in the two cities, see Saito, *Edo to Osaka*, p.29; estimates of the overall percentage urban for 1650, 1750 and 1850, are set out on p.31, while the corresponding European figures for 1750 are from de Vries, *European urbanization*, p.39, both of which also contain discussions on rank-size distributions of towns.

By the eighteenth century there were well-established commercial networks that linked provincial castle towns with Osaka and, to a lesser extent, with Edo. However, since all those towns suffered population loss in the eighteenth century and after, merchants, wholesalers and middlemen alike, must have similarly suffered. Given the ways in which they traded, characterised with relatively low margins and high turnovers, all this must have resulted in declining profit rates in the merchant houses involved. According to a detailed account of one Kinai cotton merchant who had a shop in Edo, for example, the rates of profits over assets net of liabilities from the end of the seventeenth to the early eighteenth century were well above the 10 per cent level, but started to decline towards the 1770s, then remained below 3 per cent until the end of the Tokugawa period.<sup>35</sup> A recent survey of evidence based on six urban merchant houses also identifies a similar trend: the level of profit rates in the eighteenth century was somewhat lower than 10 per cent, but all the data point to a secular decline thereafter.<sup>36</sup> One may expect that in such circumstances they tried to exploit relations with the government, but as Smith noted, they were unable for some reason to help themselves by such political means. Tokugawa Japan's mercantile capitalists failed to seize gains from pre-modern growth.<sup>37</sup>

Turning to the rural economy, on the face of it, we see more similarities with the West than on the urban scene. As Smith stressed, the

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<sup>35</sup> Kitajima, *Edo shōgyō*, pp.200, 387.

<sup>36</sup> Ishikawa and Yasuoka, 'Shōnin no tomi', .

<sup>37</sup> Smith, 'Pre-modern economic growth', p.151.

latter half of the Tokugawa period witnessed the countryside growing in competition with the urban economy. Not only rural commerce and transport expanded, but rural industry also grew. Most conspicuous of all those industrial changes was the proliferation of textile trades into the countryside. Cotton was cultivated only in the warmer western half of the country, in which the weaving trade had also been concentrated; and the silk industry had long been centred in Nishijin, Kyoto, with the supply of raw silk from nearby villages and neighbouring provinces. However, as the eighteenth century went by, cotton weaving districts emerged in central and Kanto regions, where producers 'imported' ginned cotton from western provinces. In the silk trade too, an increasing number of villages in central and eastern regions sent raw silk to Kyoto, and after the turn of the century, some of the silk districts in the Kanto even started marketing their kimono fabrics for the Edo market in competition with Nishijin's quality goods. The tendency was thus from west to east and from centre to periphery, which reflected an increasing competitiveness of rural products in the central consumer markets of Edo, Kyoto and Osaka. Being substantially labour intensive, the rural industry took advantage of lower labour costs there, but at the same time this trend was associated with another tendency. It was the separation of, and the specialisation in the production of intermediate goods, with which markets for such intermediate goods expanded. In cotton, the market for ginned cotton grew as eastern weavers expanded their production, while a substantial number of weaving districts started specialising in producing

plain, white cloth. In silk, although the separation between reeling and weaving had existed from the beginning, the market for raw silk expanded and product differentiation proceeded in the weaving sector as the consumer markets proliferated gradually. All this, therefore, took the form of regional differentiation and also of increased competition between those regional economies. In fact, local daimyo governments became increasingly aware of the potential those rural industries might have for the development of the region, and some actually made an explicit attempt to promote 'export' to the markets in Edo, Kyoto and Osaka. Most of such export goods were textiles. For example, according to the estimated ratios of exports to the total value of gross domestic product in two large *han* economies, Chōshū and Kaga, while saké (rice wine), one of the single most important products in the manufacturing sector of the day, was marketed almost exclusively in local markets (with its export ratio being as small as 5 per cent), large amounts of textiles were shipped to Osaka and other metropolitan markets, although the actual export ratio varied from region to region and from commodity to commodity (24 to 100 per cent). One may conclude, therefore, that Tokugawa Japan too experienced proto-industrialisation, the concept Franklin Mendels coined in order to describe what took place in the European countryside before the factory.<sup>38</sup>

However, there existed significant differences between the Tokugawa pattern of rural development and the Mendels model. While

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<sup>38</sup> This paragraph summarises an account in Shimbo and Saito, 'Economy', pp.340-47.



Mendels saw the geographical separation of industrial regions from farming regions an important outcome of the demographic-industrial processes, it never took place in the Japanese case. Nor did demographically-led proletarianisation proceed even within the region of rural industry in Tokugawa Japan. Although labour markets existed as an important institution in the agrarian sector, the landless never emerged. Throughout the period from Tokugawa to the time of the Land Reform in the 1940s, a class of agrarian wage-earner households was virtually non-existent. There were poor peasant families; they tilled the land under tenancy and had to pay substantial amounts of rents, but they remained on the land as a producer. It is true that the historiography of rural Japan is full of stories of differentiation, if not polarisation, of the peasantry, but it was the differentiation in land ownership. The proportion of land under tenancy and that of tenant-cultivators were undoubtedly on the increase in the long-run, which eventually led to the emergence of extremely powerful landlords (often called 'gōnō', literally wealthy farmers), owning sometimes several hundred hectares of farmland and thus earning a good deal of unearned incomes. Yet, the formation of such landlordism was a phenomenon in the Meiji period, most apparent after the deflationary period of the 1880s. Wealthy as they undoubtedly were, a large majority of Tokugawa and early Meiji landlords were at the same time 'cultivating landlords', tilling their own family farms, thus included in the 'owner-farmer' category in agricultural statistics. If focused on the size of farm peasant farmers actually cultivated, therefore, it turns out that the

differentiation between owner farmers and tenant cultivators did not proceed as tenancy figures would suggest. Both classes of farm families worked on a small farm. Of course, the owner farmer's farm size is likely to have been larger than the tenant cultivator's, but the variation of the farm size fell in the range from 0.5 to 1.5 ha. Both, moreover, practised a kind mixed farming. On the basis of rice and other grains, both introduced a cash crop or two depending on soils, climate, and market conditions of the area: the typical cash crops in western Japan were cotton and rape seeds while sericulture was far more widespread in the east.<sup>39</sup>

When there was no suitable cash crop available, or when the farm family was unable to try on such commercial agriculture, the family members, especially female members took up industrial by-employment such as reeling, weaving and straw plaiting. Also available to family members were various kinds of wage work such agricultural tasks employed by the day, casual work away from home, and live-in domestic service on a yearly contract. Whichever chosen, however, the farm remained as a family farm. The use of outside labour remained negligible on the family farm. For example, according to a farm household survey conducted as late as 1928, the proportion of outside labour to the total hours actually worked on the farm of the owner-farmer class was only 7.6 per cent. The percentage was certainly greater than that for the tenant

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<sup>39</sup> Saito, 'Population and the peasant family' and 'Rural economy'. As for landlords, Dore, 'Meiji landlords'; and Waswo, *Japanese landlords*, pp.66-72. For a possible causal relationship between tenancy and the differentiation of the peasantry, see Tomobe, 'Kazoku rōsaku'; see also Booth and Sundrum, *Labour absorption*, pp.144-45.

cultivator, 3.5 per cent, but it is clear that there was virtually no room for the substitution of hired labour for family labour even on the relatively large farm of the 'owner farmer' category. Indeed, both male and female family members worked longer, though slightly, in the farm household of this category than in the tenant-cultivator household. Given the possibility that most of the farmers in this 'owner farmer' category must have owned land more than the farm they tilled, therefore, this implies that increased tenancy did not lead to the polarisation of the peasantry in rural Japan. Indeed, there is a suggestion that tenancy must have functioned as a stabiliser of the peasant family economy in the Tokugawa and Meiji periods and, under certain circumstances, may even have given rise to the tendency for the middling peasant class to expand—a diagonally opposite tendency to any theory of the disintegration of the peasantry.<sup>40</sup>

One significant force operating to prevent the peasantry from disintegrating was a rise in agricultural productivity. As I demonstrated elsewhere, this is because an upward shift in the production function of the farm household would, other things being constant, push up the household members' asking prices for labour in the outside job market, and hence reduce the probability for the farm household to become an wage-earner household. The 'production' here should include not only rice and other grains but output of commercial crops and other forms of commercial agriculture as well. Indeed, the effect of sericulture as a deterrent on the supply of wage labour from the farm household was

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<sup>40</sup> On women's work in the farm household, see Saito, 'Gender'. The 1928 hours of work data are from Inaba, *Nōka keizai*, pp.48-49.

considerable. Agricultural growth and commercialisation kept the peasantry on the land.<sup>41</sup>

There are stylised facts about Tokugawa agricultural growth, which may be summarised under three headings. First, output per unit of land increased. Second, technological improvements that took place during the course of agricultural growth enhanced labour intensity. And third, output per head of labour also increased.

The first is probably the most robust fact of all, as long as rice yields are concerned. All case studies point to land productivity of rice being on the steady increase over the Tokugawa period, reaching by the early Meiji era the level most of the other Asian rice-producing countries would attain after the Second World War.<sup>42</sup> Turning to the second and third facts, however, although it is widely recognised that whenever agricultural technology improved, its overall effect was to increase labour intensity in farming,<sup>43</sup> one can ask if the two propositions would be mutually consistent. Indeed, Akira Hayami spoke of somewhat different kind of 'industrious revolution' for Tokugawa agriculture, and went on to suggest, based on numerical data from a region called Nōbi, that there was a substitution of labour for capital, i.e. cattle, implying that output

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<sup>41</sup> Saito, *Chingin to rōdō*, chs.2-3, 'Tokugawa labor market', and 'Rural economy'.

<sup>42</sup> Yagi, 'Nōgyō', pp.133-40; Hayami, *A century*, p.8; and Ishikawa, *Economic development*, pp.78-84. Ishikawa notes that Japan's historical move in the direction of higher yields per unit of land was also a movement a 'subsistence hyperbola' that he estimated from inter-country and inter-temporal Asian data.

<sup>43</sup> As early as 1959, Thomas Smith noted that even if an individual innovation was labour-saving, in the end it did increase the overall input of labour in farming. Smith, *Agrarian Origins*, pp.87-107. This set of Tokugawa farming methods played a considerable role in Meiji agricultural innovation, which was called the 'Meiji nōhō' (Meiji agricultural methods). See Francks, *Japanese economic development*, pp.119-28.

growth was made at the expense of labour productivity. However, the macro output figures presented in Table 3 do not agree with this interpretation. Moreover, a recent survey of evidence on this issue has revealed that Hayami's interpretation of the Nōbi evidence is questionable, and that the man-cattle ratio varied considerably from region to region as well as from time period to time period. It is likely that Japanese farming in the seventeenth century had already been on a very labour-intensive track with a correspondingly intensive use of fertilisers, and that the subsequent development should be regarded as a shift towards a higher contour along the same track of the low capital-labour ratio.<sup>44</sup>

Such a labour-intensive path of agricultural growth may be best understood by a pair of stylised diagrams that the development economist Shigeru Ishikawa drew in order to depict Japan's historical growth path in agriculture.<sup>45</sup> The first of the two diagrams shows changing loci of the relation between labour input and rice yields, expressed in terms of per unit of land. Based on both empirical evidence and learned conjectures, Ishikawa suggested that while the rice yield of land increased throughout the entire period covered, it was accompanied by an increasing labour intensity until about the turn of the nineteenth century. In other words, during this initial phase, labour-using innovations outweighed any implementations of labour-saving technologies, the latter of which gained importance only from the early twentieth century. This

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<sup>44</sup> Hayami, 'Kinsei Nihon no keizai hatten', and Saito, 'Kinben kakumei-ron', pp.151-61.

<sup>45</sup> Ishikawa, *Labour absorption*, reprinted in his *Essays*, pp.1-149.

Ishikawa curve—rising rightward in the first phase, then bending leftward in the second—indicates that agricultural growth was labour-using in much of the historic period, and only started releasing labour to other pursuits other than rice and grain production in recent times. It is of course likely that in agriculturally advanced regions, the switch to a labour-saving technological regime in rice growing began much earlier, sometimes in the late Tokugawa period. However, there is the other diagram drawn by Ishikawa, which depicts the changing relations between labour input in rice cultivation and the total labour input by household members. The second Ishikawa curve suggests that even in the second phase, in which labour-saving techniques were introduced in rice growing, much of the released labour was kept within the family, transferred to other productive activities of the household. It was only in a later phase that the total labour input of the household started declining, releasing much of their labour to the manufacturing and other non-agricultural sectors. The importance of this second Ishikawa curve lies in the fact that from the first to the second phase of agricultural growth, the intensive use of land and an increased labour intensity went hand in hand. Double cropping which combined rice with a winter crop may have already been widespread in the mid-Tokugawa period, but the further introduction of commercially oriented crops such as cotton, rape seeds, indigo, safflowers, mulberries and the raising of silkworms, was an important development from the latter half of the Tokugawa period onwards. Such multiple cropping or the breeding of silkworms required

more input of fertilisers and more frequent weeding on the farming side, and tighter control of labour time allocation between farming and sericultural tasks within the household. All this meant a further increase in the total hours worked by family labour. The commercialisation of agriculture too was accompanied by an increasing labour intensity.<sup>46</sup>

From the mid-Tokugawa to the early Meiji period, there was little change in land area and labour supply. The average size of farm is believed to have changed little while the growth potential of the agrarian population was not particularly strong either. Over a 150-year period from 1721, when the first Tokugawa survey of population was taken, to 1872, for which the first Meiji statistics was compiled, land area increased only by 6 per cent and population by 10 per cent, while farm output grew by 46 per cent.<sup>47</sup> Under such circumstances, it was an increase in the level of land utilisation that enabled the ceiling of output to rise. And as land became more intensive, so did labour. This can be called a typical Boserupian process. What made this Boserupian path rather distinct, however, is that it was associated with an increasing involvement by peasant families in the production for the market, which in turn acted to keep the peasantry from disintegrating.<sup>48</sup>

Finally, take a look at Tokugawa household behaviour in order to examine

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<sup>46</sup> As for the allocation of time within the household, see Saito, 'Gender', and Smith, 'Peasant time', pp.170-80.

<sup>47</sup> Miyamoto, 'Quantitative aspects', p.38.

<sup>48</sup> For changing work habits in the process of intensification, see Boserup, *Conditions*, pp.43-55.

if there took place an 'industrious revolution' in Jan de Vries's sense. We have already seen that there existed a tendency for peasant families to work longer, i.e. to become more 'industrious'. However, that tendency per se never implies that they were willing to substitute the purchase of commodities at markets for the production of those goods at home (Z goods). Take cotton goods. According to Masayuki Tanimoto's work on the cotton trade from the early nineteenth to the 1910s, clothes were not items to buy but to make by themselves or to re-make from old clothes for most farm families in the 1830s and 40s. The market for cotton cloth did expand gradually since then, especially after the opening of the Treaty ports, but its substitution for home-produced clothes did not complete until about 1914. Another study on consumption behaviour of one village before the First World War suggests that the families tended to value clothes as a 'stock' rather than to consume their utilities as a 'flow', and that even when they bought textile goods from the market, it was sometimes threads and other materials for them to make clothes on their own. With such propensities, therefore, it is no surprise that it took more than several generations for the substitution of ready-to-wear apparel for home-produced goods to complete.<sup>49</sup> Needless to say, the demand by the farm family for cash incomes increased over time, so did their actual cash earnings and perhaps their cash spending as well. However, while it is not unlikely that a substantial proportion of increased cash earnings was used to buy cash fertilisers and other input materials in order to raise

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<sup>49</sup> Tanimoto, *Zairaiteki keizai hatten*, pp.23-35; Saito and Tanimoto, 'Transformation', pp.279-83; Ozeki, 'Furō to sutokku'; and Saito and Ozeki, 'Yamanashi nōson'.



yields. If it was only the remainder that was spent to supplement and, if possible, to increase clothes and household goods in stock, then it is quite implausible to assume that they worked hard in order to buy more consumer goods.<sup>50</sup>

#### **4. Conclusion**

The foregoing surveys of various factors, which are thought to have been important to explain pre-modern growth in eighteenth- and nineteenth-century Japan, all point to two distinct features. First, Tokugawa growth was a typical 'Smithian' process. There was an unmistakable trend towards an increased division of labour, most notably in the form of a proliferation of trades within the textile sector. Although in cotton the separation of spinning from weaving was not completed by the end of the Tokugawa era, cotton weaving proliferated into the production of white cloth and that of finished cloth using pre-dyed yarn. In silk, the production of cocoon, reeling and weaving were separated from early stages, and the proliferation of weaving districts into white and non-white types took place in much the same fashion as in cotton. There also took place a differentiation of products within the same branch of each industry, while in the case of white cloth interregional markets become competitive. Probably, such an increased division of labour was matched by a slow but

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<sup>50</sup> For example, a village record from Omi Province stated that earnings from by-employment in that village went to the purchase of fertilisers. Quoted in Harada, *Kinsei sonraku*, p.198.

steady increase in the extent of the market through an economic betterment of those involved in the rural development processes and more specifically through the rise of a rural entrepreneur class (the 'gōnō'). However, urban commerce failed to capitalise on this development. The entire pyramid of Osaka-centred trade suffered from rural competition, although it should be remembered that even when the Osaka-centred system had come into being in the late seventeenth century, there had involved not much 'capitalist' orientation in the Braudelian sense. On the farming side, there was not much 'capitalist' element either. Rice cultivation in the early seventeenth century had already been labour intensive, and the whole process of commercialisation and technological adaptation in farming was towards an increased labour intensity. It was not until after the First World War that farming machines and other capital inputs started playing an important part.

The second feature of Japan's pre-modern growth is that it was not associated with increased income inequality among the social classes. As Thomas Smith argued, urban merchants became less prosperous while the samurai were even poorer. In the countryside, there was the rise of a rural elite, wealthy farmer-landlords who were sometimes rural entrepreneurs as well. Their accumulation of wealth was a force which could have widened the existing range of inequality, yet as a matter of fact, to the degree that their wealth and life styles contributed to widening rural consumer markets, it is more likely to have acted as a factor for the

rural-urban gap to narrow.<sup>51</sup> Also, it should be remembered that there was no parallel tendency for a rural landless class to emerge. Both agricultural productivity growth and commercialisation kept the peasant family household on the land. It was their families, not landless families, who took up by-employment jobs for proto-industrial merchants. This enabled, as suggested elsewhere, the market wage rate for unskilled labour, much of which was supplied from the farm family household, to equilibrate with marginal productivity in farming,<sup>52</sup> and also suggests that unlike north-western Europe, income inequality did not widen over the period in question. Most of upper- and upper middle-class people failed to increase their earnings as economy grew. Perhaps, the other side of the coin was that the farm family's income level increased in comparison with that of the urban well-to-do. Indeed, according to Allen's estimates, the real wage level for Tokugawa agricultural labourers, which must have reflected marginal productivity of farming, was comparable to that of the unskilled in north-western Europe.<sup>53</sup>

An implication of this latter statement for the level of GDP per capita may be summarised in a tabular form. Table 3 illustrates how, given the income distribution table in England, 1688, and given the finding that the standard of living in the bottom income group was roughly the same in both seventeenth-century England and Tokugawa Japan, an implied

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<sup>51</sup> Smith, 'Pre-modern economic growth', took note of the emergence of this rural elite class, giving an interesting account of their economic, social and political significance (pp.151-53).

<sup>52</sup> Saito, 'Wages'.

<sup>53</sup> Allen, 'Real wages'.

national income per family would change with a hypothetical level of inequality. Without changing the share of the middle income group, three cases are considered for Tokugawa Japan: 'exceptionally low' with the bottom 40 per cent group earning as much as 30 per cent of the total income, 'very low' with the bottom group earning 25 per cent, and 'low' with the bottom group earning 20 per cent. All the three are low-inequality cases as the corresponding English percentage was, as we have already seen, 11 per cent. What Table 3 shows is that the lower the assumed inequality level, the lower the imputed level of average family income. My guess is that the actual pattern of Tokugawa income distribution was somewhere between the 'very low' and 'low' cases,<sup>54</sup> which implies that GDP per capita may have been about half the level of England's in 1688. Note that all the average family income figures in the table are expressed in relation to that of the English bottom income group. Thus, Table 3 indicates that while the English level of GDP per capita must have been more than three times as high as that of real wages, the same income-wage ratio was substantially narrower in Tokugawa Japan. Japan's upper- and middle-class layers were much thinner than the English counterparts, which meant that their purchasing power was much smaller than that in an unequal society like Stuart England. This, in turn, implies that the 'extent of the market' was smaller than in the English case and,

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<sup>54</sup> It is difficult to determine how low Tokugawa Gini coefficient levels could have been. Judging from a rising trend observed for the period c.1890-1940, the level at the end of the Tokugawa period may have been in the range of 0.3-0.35, which happens to be comparable to the Gini coefficient for a post-war low point, i.e. 0.337 for 1980. See Minami, 'Economic development', and Mizoguchi and Terasaki, 'Kakei no shotoku'.

according to another theorem by Adam Smith, must have acted as a constraint on the further progress in the 'division of labour'.

In short, while in north-western Europe both 'Smithian' and capitalist forces were at work (with the former being mainly in manufacturing and the latter in agriculture and commerce), Tokugawa growth was nothing but a 'Smithian' process. As a consequence, in the European case, the wealth created through capitalist developments contributed to expanding the 'extent of the market' in the domestic economy, which in turn acted as a factor fostering the further division of labour, whereas the whole process of Japan's pre-modern growth was somewhat more restricted. Having lacked any 'capitalist' sources of growth and relied almost exclusively on the 'Smithian' dynamism, it is no surprise that, despite the similarity in the standard of living among the labouring mass in the two regions, Tokugawa Japan's growth performance was weaker than north-western Europe's.

All these, therefore, accounted for the slower pace of growth as well as the absence of any gap between real wage growth and per-capita GDP growth in Japan's pre-modern economic regime. Yet, we should not overlook the fact that Tokugawa Japan did achieve output growth in per capita terms. Thomas Smith emphasised towards the end of his classic essay that the onset of modern economic growth must have been 'made possible by the specific skills, attitudes, rôles, capital accumulations and commercial practices brought into being mainly during the period of

“pre-modern growth”.<sup>55</sup> This is a good point which deserves further discussion in a separate paper. Before turning our attention to such topics, however, we also have to emphasise that Tokugawa Japan’s growth was all *market-led*, and that the process of market growth was not accompanied by a widening increasing income inequality.

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<sup>55</sup> Smith, ‘Pre-modern economic growth’, p.158. On ‘skills’ and ‘attitudes’, he did publish articles separately. See Smith, ‘Ōkura Nagatsune’ and ‘Peasant time’.

Table 1. Real wages and GDP per capita in north-western and southern Europe, 1500-1750

	Real wages (Strasbourg basket of prices 1745-54 = 1.0)		GDP per capita (Britain 1820 = 100)	
	NW	South	NW	South
	1500	10.2	9.2	46
1750	9.3	6.3	80	53
1500-1750 (% per annum)	- 0.04	- 0.15	0.22	- 0.04

**Sources:** Allen, 'Progress and poverty', pp.436-37; and van Zanden, 'Cobb-Douglas', Table 3.

**Note:** NW (north-western Europe) is an average of Belgium, Britain and the Netherlands, while South (southern Europe) is an average of Italy and Spain. All averages are weighted by population.

Table 2. Real wages and per capita output in Japan, 1700-1870

	Real wages	Per capita output	
	index	Farm output	Maddison's GDP estimates
	(1700=100)	(kg)	(1990 dollars)
1700	100	169	570
1870/2	118	201	737
1700-1870 (% per annum)	0.10	0.10	0.15

**Sources:** Saito, 'Wages', Table 3.1, and Maddison, *World economy*, pp.255, 264.

**Note:** The real wage index is calculated with the assumption that the average countrywide rate of change 1700-1820 was the same as the weighted average of skilled and unskilled wages for the rural Kinai, 1727-1820 (0.6 per cent per annum), and the 1820-70 rate the same as for the Choshi composite series 1820-67 (-1.1 per cent per annum). Per capita farm output figures for 1700 and 1872 are expressed in rice equivalents estimated by Satoru Nakamura, converted with 1 rice *koku* = 150 kg. Maddison's per-capita GDP estimates are in 1990 international dollars.

Table 3. Income distribution and family income in England, 1688, and Tokugawa Japan; hypothetical comparisons

	Income share (%)			Family income (English and Japanese bottom 40% = 100)
	Top 10%	Middle 50%	Bottom 40%	
England 1688	44	45	11	340
Tokugawa Japan				
Level of inequality:				
Exceptionally low	25	45	30	133
Very low	30	45	25	160
Low	35	45	20	200

**Source:** English figures are from Lindert and Williamson, 'Britain's social tables', p.102. Japanese percentages are all hypothetical.

**Note:** In order to calculate family incomes, relative to that of English families in the bottom 40 per cent group, an assumption is made that the standard of living was at the same level for the bottom 40 per cent groups in both England and Japan.



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