Spanish agriculture: the long Siesta, 1765–1965

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Introduction

> One point emerges very clearly from the diversity of experience of the developing countries: rapid growth in agriculture and in GDP go together. Where the pursuit of industrialization – the favored targets of planners in the 1950s and 1960s – has been successful, agricultural progress has not been sacrificed. Success in agriculture strengthens and helps sustain the momentum of the whole economy.[1]

> ... there are no basic reasons why the agricultural sector of any country cannot contribute substantially to economic growth. True, agriculture using only traditional factors cannot do it, but modernized agriculture is capable of making a large contribution. ... Once there are investment opportunities and efficient incentives, farmers will turn sand to gold.[2]

In their seminal article of 1961, Johnson and Mellor outlined five areas where agriculture could contribute to economic development, namely by increasing food supply in pace with domestic demand, obtaining foreign exchange through exports, transferring labour to 'manufacturing' and 'other expanding sectors of the economy', making a net contribution to the capital required for overhead and industrial investment and finally, providing a market for consumer goods for the emerging industrial sector.[3] With Kuznets, the development process is viewed as one of structural transformation, where agriculture's share of GDP and of the active labour force declines. However, structural transformation in itself depended on improving agriculture's performance, and in all cases of successful economic development, labour productivity in agriculture has needed to increase significantly. This can be illustrated by three very different historical cases, those of England, the United States and Japan.

For many historians, the role of agriculture is considered crucial in the success of the Industrial Revolution in England, even if the timing

[1] World Bank (1982, p. 4).
[2] Schultz (1964, p. 5).
[3] Johnson and Mellor (1961, pp. 571–81).

of the changes is highly controversial. In particular, labour flowed out of domestic agriculture to such an extent that by 1840 only 28.6 per cent of male labour was employed in the sector. The changes normally associated with the agrarian revolution in England, namely new crops, more intensive rotations and more efficient agrarian institutions (enclosures and an efficient tenurial system) produced a growth in total factor-productivity in the sector which, according to one author, 'at times exceeded that of manufacturing and the rest of the economy – most notably during 1800–31'. As a result, by 1840 there was no productivity gap between agriculture and the rest of the economy.[4]

In the United States, the role of agriculture in the development process was somewhat different. Employment in the sector did not peak in absolute terms until 1907, when it still accounted for 35 per cent of the active population.[5] However as the urban population of America grew from 10 million in 1870 to 42 million in 1913, farmers not only proved capable of feeding them, but also contributed about half of all the nation's exports.[6] Furthermore, agriculture created important backward and forward linkages with the rest of the economy (agricultural machinery, fertilisers and meat-packing, flour milling, tobacco processing). These changes are reflected in labour productivity in agriculture, which grew by between 0.5 and 0.7 per cent a year over the nineteenth century, with the second half of the century witnessing an annual growth of between 0.8 and 1.2 per cent.[7]

Japan has traditionally been seen as the classic example of agriculture contributing to economic development through the transfer of savings, taxes and labour. Indeed, in their pioneering article, Johnson and Mellor referred to Japan as 'probably the clearest example of a country where agriculture contributed significantly to the financing of development'.[8] Rising output and a stagnant workforce led to an average per capita growth in labour productivity of 1.8 per cent between 1880 and 1935.[9] However, Franks has argued that the process of structural transformation and resource transfer was more complex, and less strictly unidirectional than is usually portrayed.[10] As in the United States, growing

[4] Crafts (1985, p. 115 and table 3.4). For criticism of Crafts' estimates and conclusions, see especially Mokyr (1989, pp. 305–12) and Allen (1992, chapter 13; 1994, pp. 119–22).
[5] US Bureau of the Census (1975, DC Series D1–10).
[6] Ibid, (Series A57–72).
[7] Weiss (1993, tables 2 and 3).
[8] Johnson and Mellor (1961, pp. 577–8)
[9] Hayami (1975, p. 30).
[10] Franks (1992, p. 103).

agricultural output became increasingly dependent on industrially produced inputs and urban demand. Furthermore, in the case of Japan, rural households frequently turned to manufacturing employment during periods of low demand in agriculture. Farmers therefore were 'responding to, and themselves affecting, changes in market conditions for labour and goods, in available technology, and in the institutional organisation of industry and commerce'.[11]

The problem facing developing economies is not, therefore, one of simply transferring resources from agriculture to other sectors, but also one of raising agricultural output and productivity. If this was achieved to a greater or lesser extent in the three countries discussed above, the story in many of the more backward European countries, not to mention those of the Third World, is that agricultural output often struggled to grow faster than population growth until well into the twentieth century. Furthermore, farmers rarely adopted immediately the new technologies made available to them by industrialisation, labour did not leave the countryside for the cities or emigrate in sufficient numbers to reduce the farming populations, and agriculture performed few of the functions outlined by Johnston and Mellor. Spain is a case in point. Nadal, in his classic study of Spain's failure to industrialise prior to 1913, noted that low agricultural productivity resulted in costly food and weak domestic markets for manufactured goods. Industry was starved of capital as the wealthy diverted their capital to the purchase of land, and if a cheap and abundant workforce existed in the cities, this was not in itself sufficient for industrialisation.[12] Another leading Spanish historian, Tortella, has written of the 'serious retardation of Spanish agriculture, especially until around 1900', being reflected in its low productivity.[13] He argues that the agricultural sector was weak in its demand for consumer goods, achieved only modest transfers of labour and capital to the urban sector and, in particular, failed as a market for industrial inputs.[14]

If a number of historians have recently questioned whether labour productivity in Spanish agriculture was actually as low as suggested in the works of such authors as Nadal or Tortella, and if the industrial sector itself has also been partly blamed for the country's slow development, few would question the fact that Spanish agriculture's contribution was weak over most of the two centuries between 1765 and

[11] Ibid. (p. 111).
[12] Nadal (1984, pp. 82–6).
[13] Tortella (1987, p. 42).
[14] Tortella concludes that 'agricultural stagnation explains to a large extent the relative retardation of the Spanish economy during the period under study [1830–1930]' (1987, pp. 55–9).

1965.[15] However, this book is not about 'backward' peasants who allocated resources inefficiently and failed to respond to market opportunities. Rather, it is about the difficulties in raising labour productivity faster in traditional agriculture. The book starts in 1765 when Spain's growing population, as elsewhere in Europe, was beginning to put pressure on resources to an extent which had not been experienced since the sixteenth century. Significantly, it is also the year when the *tasa*, or maximum price at which wheat could be sold, was abolished in Castilla. The books ends with the situation in the mid-1960s – a time when traditional agriculture was beginning to change rapidly, producing a significant growth in both labour productivity and transfers of resources to other sectors of the economy. I argue that although natural resources were not especially favourable for agriculture in Spain, this is not enough in itself to explain the slow growth of the sector. Also to blame were government policies, the weakness of urban demand for farm products and in attracting agricultural labour, the difficulties in achieving export-led growth, and the technical restrictions to both improving yields in dry-farming and introducing more labour-intensive crops.

The book is divided into five parts. In the first part (chapters 1 and 2), I present new estimates of agricultural output and productivity. These challenge the findings of some recent research which sees Spain's agricultural sector as having changed significantly from the mid-nineteenth century. Instead, I argue that although population pressure and institutional reforms had stimulated changes in the nation's agriculture, until the turn of the twentieth century agricultural output grew little faster than population growth. In the early twentieth century, the speed of change quickened and labour productivity increased, but most of these gains were subsequently lost in the 1930s and 1940s. Only from the mid-1950s was the process of modernisation of traditional agriculture renewed, leading to a rapid growth in productivity and major structural changes in the Spanish economy.

The second chapter shows the considerable diversity in Spanish agriculture implying that no single factor can adequately explain the slow growth of the sector. Four major regions are established, with labour productivity being higher in the North and Mediterranean than in the Interior and Andalucía. Agriculture in the North was based on very small farms, with adequate rainfall permitting labour-intensive systems of mixed husbandry. Although the population was adequately fed, the

[15] For more optimistic visions of agricultural productivity, see GEHR (1983a) and Prados de la Escosura (1988, ch. 3).

low level of integration in product markets produced low disposable incomes. By contrast, irrigation helped the Mediterranean farmers specialise in high-value fruits, nuts and vegetables for urban and international markets. Both Andalucía and the Interior, which accounted for four-fifths of the nation's agricultural area, suffered from summer droughts. In Andalucía agriculture was dominated by large estates and extensive farming systems based on cereals and olives, whilst in the Interior farms were small with a very high dependence on dry-farming and cereals. The problems facing Spanish farmers were therefore very different, and the speed of change in traditional agriculture would vary significantly according to the region.

In Part II, the mechanics by which traditional agriculture was able to raise output until the late nineteenth century are discussed (chapters 3 and 4). Given Spain's initial low population density, outward movements in the demand curve caused by population growth from the second half of the eighteenth century were met by extending the area cultivated and using existing technology, rather than introducing more intensive cropping methods. The process was aided by changes in property rights, which both strengthened individual ownership through the abolition of institutions such as the Mesta, tithes and entail, and extended it through the sale of large areas of land to individuals – land that had belonged to the church and municipalities. Finally, commodity markets were also liberalised which, together with transport improvements, led to greater market integration and in turn, to an increase in farm specialisation.

The extension of the area cultivated and improvements in market integration between 1700 and 1900 allowed farmers not only to feed a population which virtually doubled in size, but also to meet the increasing international demand for products such as wine and olive oil. Yet there were also major limitations to agriculture's performance. There was, for example, little evidence of improvements in land or labour productivity. The large sale of church and municipal property, whilst far from reinforcing the structure of an independent peasantry such as existed in France, also failed to break fully the links that many had with the land, which might have speeded up rural outmigration, a process which in England had been stimulated by the Enclosures. The small improvements in living standards over the period were caused by events mainly outside agriculture, in transportation and the manufacturing sector.

By the late nineteenth century Europe's farmers were enjoying an increasing supply of new inputs, including chemical fertilisers, labour-

saving harvest machinery and improved irrigation technologies. Part III shows that the likely response by farmers to these new opportunities depended on market opportunities for the different crops and on factor prices. The fact that traditional farming methods often proved the most profitable implied that productivity growth would remain slow prior to the 1936–9 Civil War.

In northern Europe, artificial fertilisers removed the need to keep high densities of livestock to improve soil fertility. However, chapter 5 shows that the experience in Spain, as in other regions of the world where dry-farming was practised, was that existing cereal strains responded poorly to artificial fertilisers, and marginal physical returns to more intensive tillage were therefore low. Instead, farmers used fertilisers to bring into cultivation more land, and yields stagnated until improved seed strains were introduced on a large scale in the 1960s. By contrast, on irrigated land, crops were much more responsive to fertilisers, and Spanish farmers proved to be some of Europe's pioneers in their use.

About four-fifths of Spain's agricultural land suffered from seasonal droughts and low crop yields at the turn of the twentieth century. By contrast, the relatively high labour productivity in parts of the Mediterranean owed much to a combination of a warm climate, irrigation systems, artificial fertilisers and abundant labour which permitted the production of high value crops. The obvious contrast between Spain's *secano* (dry lands) and its irrigated market gardens and orchards was not lost on contemporaries, and many believed irrigation was the answer to the country's low productivity in agriculture. Chapter 6 shows, however, that the commercial success of new irrigation projects depended not only on the construction of reservoirs and canals, but also on the development of water management systems and the introduction of a wide range of complementary inputs, including new crops, scientifically selected and produced seeds, and artificial fertilisers. The chapter shows that, in spite of its potential, the contribution of irrigation-fed agriculture remained small before the 1936–9 Civil War.

Low cereal yields and the limited area irrigated implied that improved labour productivity in dry-farming areas could best be achieved through mechanisation. Chapter 7 shows that the diffusion of labour-saving machinery in Spanish cereals was slow, not so much on account of farmers' ignorance of the new equipment, but rather because, as 'rational' farmers, they were reluctant to mechanise at a time when they had a cheap labour supply, the price of draught energy was high, and the links between the agricultural and industrial sectors were still weak. By contrast, where new mechanical technologies offered real advantages to pro-

ducers, such as in olive oil processing, the diffusion of new techniques was rapid.

Part III argues, therefore, that farmers were responsive to changes in factor prices and new production opportunities when these proved profitable. Part IV links this notion of 'rational' farmers with Spain's low agricultural productivity and poverty on the eve of the 1936–9 Civil War by looking in greater detail at commodity markets, and the demands for institutional change. Chapter 8 argues that not only were Spanish diets poor in calories, but the consumption of meat and dairy products was significantly below the European norm. This was partly caused by weak urban demand – the relatively slow growth of cities in Spain reduced their ability to stimulate agricultural specialisation. However, demand was not the only problem for, whilst northern European farmers reacted to falling international prices of cereals in the late nineteenth century by shifting resources into livestock products, this was not a realistic option in most of Spain because of summer drought. By contrast, in the North – a region where natural resources were ideal for livestock production – the small scale of many herds and the weak integration of markets limited specialisation. In general, labour was slow to leave agriculture prior to the twentieth century, and this can be explained by the capacity of agriculture to absorb the growing rural population. Only with the reorganisation of Spanish viticulture after phylloxera, and with growing urban wages, would labourers begin to leave agriculture in significant numbers.

Although by the late nineteenth century Spain was uncompetitive in the production of cereals and livestock produce, conditions on large areas of the *secano* were ideal for vines and olives. In chapter 9 I argue that a number of barriers existed to export-led growth in these commodities. International markets were limited to areas of production, or those with large numbers of Mediterranean immigrants. Producers of both crops suffered from product adulteration and cheap substitutes. These limits to demand have to be contrasted with supply which was more elastic, given the abundant supplies of suitable land, cheap labour and low entry costs for producers, both in Spain and elsewhere in the Mediterranean. Already by the turn of the twentieth century, international wine markets were suffering from overproduction. If the situation was better for olive oil producers, the limitations of the international market were clearly present by the late 1920s. Consequently, the incentive to shift resources out of cereals and into vines and olives was limited during the first half of the twentieth century.

Given the low productivity of much of Spain's dry lands and the limited possibilities for changing the crop mix, chapter 10 looks at the role

of government in helping farmers and influencing production decisions in the half century prior to the Civil War. With cereals, government policy was directed towards tariff and price intervention – policies which benefited the larger farmers but which led to high consumer prices and did not significantly improve the incomes of many small producers. Cooperatives, which might have helped the smaller farmer, were not encouraged, in marked contrast to countries such as France where the family farm was politically much more powerful. Therefore, whilst discouraging rural outmigration and appearing to encourage the family farm, successive governments did little to improve the lot of those who chose to remain. Finally, I argue that the ill-fated agrarian reform of the 1930s, which aimed at dividing up large estates, would have provided only a temporary solution to low rural incomes and would not have improved labour productivity.

With technical change leading to modest productivity gains, wider economic growth and development was also taking place within Spain during the first three decades of the twentieth century. However, the limits to productivity growth in agriculture were clearly visible. If farmers were efficient in their allocation of resources, labour productivity remained low over large areas of the country, and consumers faced some of Europe's highest food prices – and some of Europe's poorest diets.

The limited changes in agriculture from the early twentieth century were halted and then reversed during the 1930s and 1940s. The widespread shortages of commercial fertilisers and machinery in Spain after the 1936–9 Civil War resulted in many farmers reverting to traditional techniques. However, from the mid-1950s, agriculture began to change beyond all recognition. Part V looks at these changing fortunes and, in particular, considers how the three key bottlenecks to increased agricultural output – legacies of the earlier period – were eventually overcome. First, the rural exodus to the cities and northern Europe created labour shortages in the countryside, leading to an increase in real wages, and was a stimulus to mechanisation. Furthermore, for cereal farmers the backlog of technology that had built up by the early 1950s was such that its subsequent introduction protected farm profits and at the same time permitted the government to reduce the real price of wheat. Second, major international changes in poultry and pig-farming technologies allowed a rapid growth in domestic output and a doubling of per capita meat consumption between 1955 and 1965. Improvements in breeding and feeding led to higher beef yields, which partly offset the limits imposed by summer droughts and the small production units of the North. Finally, the growing attractions of hydro-electric power, together with improvements in construction technologies, greatly

increased the supply of water for Spain's irrigation needs. As a result, whilst labour productivity increased by about a third between 1900 and 1950, it tripled between 1950 and 1970. Although Spanish agriculture was still poor in comparison with other western European nations, its Siesta had ended.