1. Introduction: ecological and institutional constraints

The analysis of Spanish economic development has tended to focus more on reasons for its relative backwardness until about 1960 - with respect to other Western European countries - than on how it has finally completed, although more slowly, the process of modernization and economic growth.

In the debate on the causes of this slow development, agriculture has been viewed by some historians as the major factor. This perspective was concordant with views prevailing throughout most of the ‘60s and ‘70s, which considered the agricultural sector as the key to understanding industrialisation processes. However, during the final decades of the last century, a “revisionist” literature emerged which questioned the central role of agriculture in the modern economic growth of Western European countries.

From the beginning of the 1980s, efforts to reconstruct the principal macro magnitudes of the Spanish agricultural sector have permitted a reasonable quantitative basis for the evaluation of Spanish agricultural sector results over the long term.2

In recent years the ecological uniqueness of Spain within Europe has been emphasized as a means of understanding the evolution of Spanish agriculture and the possibility of its contributing to economic growth (Garrabou, 1994; Tortella, 1994). Two characteristics are of primary importance: the predominance of a Mediterranean

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type climate and the abruptness of its relief, with mountain ranges covering most of the country.

Medium level or extreme aridity is the climatic feature which most conditions Spanish agricultural possibilities (González de Molina, 2001; Garrabou and Naredo, 1999). In Colin Clark (1957), Spain was classified as the European country with the worst results: compared to the ratio of surface area useable for agriculture to overall surface area, which normally exceeded 90% in Western European countries (Germany, France, United Kingdom, Netherlands, Denmark.....), Spain achieved only 53.3%, with Switzerland the only other country in the continent with similar results.

The predominantly Mediterranean type climate leads to low and irregular yields in unirrigated areas and, in contrast, high productivity in irrigated areas due to the combination of sufficient water, high levels of sunshine and moderate temperatures. Logically, this difference in productivity has meant a constant effort, over hundreds of years, to bring irrigation to dry areas through the construction of costly infrastructures.

Furthermore, Spain’s high altitude and steep slopes make a large part of its territory virtually unusable for agricultural purposes, with only limited possibilities, compared to other European countries, for raising livestock, given that mountainous areas in Spain are largely in arid or semi-arid zones (Collantes, 2003). Switzerland is the only other country in Europe with worse conditions for agriculture in terms of heights and slopes. This rugged orography has historically involved high transport costs and slow, difficult communication between many areas. This, in a large, sparsely populated country such as Spain, posed serious obstacles to the development of commercialized agriculture and high production costs (Carmona y Simpson, 2003; Palafox, 2002).

Largely as a consequence of this low productive potential, the Spanish agricultural sector showed very low productivity at the beginning of the nineteenth century. The most mountainous regions had specialised in transhumant sheep rearing with large areas of land in the south and the east of the peninsula and in the Ebro Valley reserved for grazing. In areas more suited to agriculture low yield cereal crops were cultivated alongside olive trees and grapevines which provided larger incomes to areas specializing in them. Thus, in a European context, the Spanish agricultural sector was quite unusual at the beginning of the nineteenth century in terms of its relative
abundance of unfarmed land with low productive potential which could be farmed at low cost.

The role played by institutional factors on Spanish agricultural growth has also been an important consideration in many studies (Carmona and Simpson, 2003; Garrabou, 2003; Pinilla, 2004). From this perspective, we are going to concentrate on two major questions that seem to us the most relevant, due to their possible influence on agricultural development: the distribution of land ownership and the actions of the State.

The unequal distribution of land ownership, such as existed, above all, in the southern half of Spain, and the absence of an agrarian reform which might have been able to correct the situation, had a significant effect on the endowment, price and remuneration of the production factors of Spanish agriculture. The resulting impact on agricultural growth reinforced the lack of incentive to mechanise before the Spanish Civil War. On the one hand, farmers with very little land and no savings did not have the resources to finance the adoption of innovative techniques; on the other hand, landowners who had access to a large and cheap labour pool had no incentive to modernise and mechanise.

The unequal distribution of land also influenced the retardation of agricultural growth by creating a social structure with a very low capacity for saving. This discouraged the development of a modern financial network in rural areas, unlike what was happening in the cities. Consequently the fragmentation of credit markets, usury and specifically the difficulties and high cost of credit, presented significant problems for the financing of certain agricultural changes.

A third negative impact of unequal land distribution on Spanish economic growth had to do with the creation of a polarising demand for goods. This limited the demand of a large portion of the population for basic necessities (when these were not available in their own family). Meanwhile the upper strata focused on the acquisition of luxury goods (Hayami and Ruttan, 1989).

Regarding the possible influence of State policies, it has been noted that a key element in understanding the delayed development of Spanish agriculture was precisely the passive attitude of the government in promoting irrigation before the 1920s, thereby not taking advantage of every opportunity to achieve more rapid productivity growth.

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Public action was slow, as is seen in the rarity of public works completed before the 1950s and their concentration in the area of the Ebro Valley (Pinilla, 2006). This is understandable if we take into account the small amount of the budget allocated to hydraulic projects. A major government initiative in the area of hydraulic works would have produced significant effects in agricultural productivity, to the extent that it is reasonable to state that the total production per hectare in affected areas would have at least tripled.

In terms of State support for agronomic research, innovation, and extension it can be said that the results are uneven. The most positive were cases in which State support was key to the development of important processes of change. The negative effect stems from the localised character of these initiatives, the scant budgetary attention that was paid to them, and the lack of continuity experienced by some of the most innovative sectors of Spanish agriculture.

Exporters received significant help through the negotiation of trade treaties. The opening of external markets for agricultural exports was avidly pursued, even at the cost of having to reciprocate by opening the Spanish market to manufactured products from more advanced countries (Serrano, 1987). As for tariff policy, the emphasis has been placed above all on the supposedly negative impact of protection of wheat, maintaining an inefficient industry resistant to change. Some recent research has clarified the impact of trade policy, underlining the tendency to support the agrifood industry and has characterised the protectionist policy towards wheat as an incomes policy (Gallego, 2003). In addition, Simpson (1997) emphasised that the scarcity of alternatives to grains on arid land also limited the impact of protection.


In the analysis of trends in the evolution of Spanish agriculture over the long term, there clearly emerges a first stage which extends from the beginning of the nineteenth century to the start of the agricultural depression, near the end of that same century. This stage was characterised by slow productivity growth, stagnation in crop

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5 Based on the differences in total production per hectare after the Civil War, between arid and irrigated land in Aragón. (Ibarra and Pinilla, 1999).
yields and a tremendous increase in cultivated land and production. The latter made it possible to serve the nutritional requirements of a growing population with limited recourse to imports. In addition, there was an appreciable increase in the export of Spanish food products to international markets. Without an understanding of the profound institutional changes that preceded the increase in production, (known as liberal agrarian reform), it is impossible to understand this process.

In this period, one of the keys to understanding the evolution of the Spanish agricultural sector was its inability to adapt to the available supply of technological change, given the environmental conditions that existed over much of the Iberian Peninsula. It is logical to think that if the point of departure was from relatively low levels of agricultural productivity, the gap between Spanish productivity and the elevated levels found in other European countries could only widen.

This type of growth took place in an economic context where agriculture was still the principal productive sector, employing over 60% of the working population and accounting for 40% of output (Graph 1). This remained the case until the end of the 1870s. Industrialisation in Spain, which had begun towards the end of the 1830s, was a slow process, with a high degree of geographical concentration.

![Figure 1. Shares of Agricultural Output and Active Population over GDP and Total Active Population](source: Prados de la Escosura (2003))

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7 The increase in cultivated land during the 19th century was approximately six million hectares. Bringas (2000) and Gallego (2001).
From the start of the agricultural depression at the end of the century, important changes began to occur. In the last decades of the nineteenth century, Spanish agricultural productivity improved; initially in the land itself and, after World War I, in labour productivity (Bringas, 2000) (see Graph 2). This change in the Spanish agricultural sector paralleled similar developments in other European countries. The Spanish “exception” would be, once again, an increase in cultivated area, which - given the still relatively low price of land in Spain - weakened the incentive to adopt modern fertilisers. This tendency was common in countries of Eastern Europe characterised, like Spain, by their low demographic pressure. (Van Zanden, 1991). In spite of the delay in adopting these fertilisers, consumption grew remarkably in these years, so that levels of use quadrupled between 1907 and 1935. Despite the fact that Spain’s rate of increase in the use of fertilisers surpassed that of a good number of western European countries, consumption per hectare in Spanish agriculture was still only 82% of the Italian, 65% of the French and 20% of the German (Gallego, 1986).

Alternative technology suitable for the Spanish environment, the American “dry farming” method, had begun to be introduced around the middle of the nineteenth century on the great plains of the United States. Its key element was agricultural mechanisation, which would become important in Europe only after 1870 and especially after World War I (Van Zanden, 1991). However, not until after World War I, when real wages began to increase in an appreciable way, was there an incentive to substitute capital investment for labour (Gallego, 2001).

The relatively cheap cost of labour and its abundance in rural areas was due to the low mobility of the population. This lack of mobility was the result of the inability of cities and areas undergoing industrialisation to attract rural workers8. Once these areas began to generate attractive economic opportunities, the migratory valve opened wider. The delayed beginning of foreign emigration had to do mostly with the poverty of the Spanish countryside, which made it difficult for an individual to bear the cost of the journey and settlement in his new home (Sánchez-Alonso, 2000).

8 This theory is stated in Meier and Baldwin (1964), p. 196. The case of Mediterranean countries in O’Brien and Prados (1992). Regarding Spain in Silvestre (2005) it is empirically shown how internal migration, up to the Civil War, was predominantly affected by attraction to certain areas rather than expulsion from them. The persistence of temporary migration (rural-urban or rural-rural) also delayed the rural exodus in Spain, Silvestre (2006).
TABLE 1. SPANISH AGRICULTURAL OUTPUT (percentage)

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Cereals &amp; pulses</td>
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<td>30.3</td>
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<td>6.7</td>
<td>7.2</td>
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<td>6.7</td>
<td>3.5</td>
<td>3.4</td>
<td>6.6</td>
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<tr>
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<td>6.0</td>
<td>10.5</td>
<td>9.7</td>
<td>5.3</td>
<td></td>
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<tr>
<td>Olives trees</td>
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<td>4.7</td>
<td>5.8</td>
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<td>7.8</td>
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<td>8.0</td>
<td>5.7</td>
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<td>Vegetables</td>
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<td>4.6</td>
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<td>17.0</td>
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<td>6.0</td>
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<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Crops</td>
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<td>81.0</td>
<td>77.0</td>
<td>76.6</td>
<td>76.2</td>
<td>72.4</td>
<td>80.5</td>
<td>73.0</td>
<td>65.6</td>
</tr>
<tr>
<td>Cattle</td>
<td>20.3</td>
<td>19.0</td>
<td>23.0</td>
<td>23.4</td>
<td>23.8</td>
<td>27.5</td>
<td>19.4</td>
<td>26.9</td>
<td>34.4</td>
</tr>
</tbody>
</table>

Average of the annual data for the corresponding years. 1900, 1910, 1922 and 1931 are five years averages
Calculated at current prices.
Source: 1891=1932: Grupo de Estudios de Historia Rural (2005); 1940-1975: Own calculations on the basis of Anuarios Estadisticos de la Produccion Agraria.

Because of this, and in spite of the delayed implementation of the mechanisation of Spanish agriculture, the pace of growth in labour productivity during the period between World War I and the Spanish Civil War was significant (Graph 2). Even so, this approached only the Italian level and was substantially inferior to the British, French and German levels. This was decisively affected by environmental conditions, since it is above all in the output per hectare where significant differences existed compared to countries of northern or central Europe. While the amount of available land per worker was relatively favourable, it wasn’t sufficient, as in the United States, to compensate for the differences in output per hectare. (O’Brien y Prados, 1992).

TABLE 2. DISTRIBUTION OF LAND USE IN SPAIN (%)

<table>
<thead>
<tr>
<th></th>
<th>1891-5</th>
<th>1900</th>
<th>1910</th>
<th>1922</th>
<th>1931</th>
<th>1944-6</th>
<th>1954-6</th>
<th>1964-6</th>
<th>1974-6</th>
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<tbody>
<tr>
<td>Cereals &amp; Pulses</td>
<td>41.0</td>
<td>41.7</td>
<td>42.0</td>
<td>45.5</td>
<td>44.8</td>
<td>45.8</td>
<td>44.3</td>
<td>41.3</td>
<td>39.6</td>
</tr>
<tr>
<td>Wheat</td>
<td>19.9</td>
<td>21.3</td>
<td>19.3</td>
<td>21.1</td>
<td>21.3</td>
<td>21.4</td>
<td>22.2</td>
<td>21.7</td>
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<tr>
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<td>7.8</td>
<td>7.4</td>
<td>8.6</td>
<td>8.8</td>
<td>9.1</td>
<td>8.2</td>
<td>7.1</td>
<td>15.7</td>
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<tr>
<td>Fallow</td>
<td>33.4</td>
<td>34.2</td>
<td>33.1</td>
<td>32.8</td>
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<td>26.8</td>
<td>27.3</td>
<td>28.5</td>
<td>25.2</td>
</tr>
<tr>
<td>Vineyards</td>
<td>9.2</td>
<td>8.0</td>
<td>7.1</td>
<td>6.7</td>
<td>7.2</td>
<td>7.7</td>
<td>7.8</td>
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<tr>
<td>Olives trees</td>
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<td>8.9</td>
<td>11.1</td>
<td>10.9</td>
<td>10.7</td>
<td>9.7</td>
</tr>
</tbody>
</table>
Spanish dry-land agriculture centred on three traditional crops, characteristic of most Mediterranean countries: grains, grapes, and olives (Table 1). These crops, and fallow, accounted for just over 90% of cultivated land in 1931 (Table 2). The low competitiveness of Spanish grain output, a consequence of poor yields per hectare from arid land, meant that most of it was directed to the national market. However, Spain was extraordinarily competitive in olive oil and wine. This was, therefore, a logical channel for the increased productivity of dry-land agriculture, redirecting its production from those crops which were relatively inefficient, like grains, to woody crops which were able to compete in international markets. From 1870, continuing along a path established since the middle of the century, Spanish production of wine and olive oil grew tremendously. Benefitting not only from the French phylloxera plague, but also from the integration of international markets for agricultural products, Spain was, at the beginning of the 1890s, the primary world exporter, in volume, of wine and second only to Italy of olive oil.

<table>
<thead>
<tr>
<th>Fruit trees</th>
<th>1.9</th>
<th>1.7</th>
<th>1.9</th>
<th>2.2</th>
<th>2.3</th>
<th>2.9</th>
<th>3.1</th>
<th>3.4</th>
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<tbody>
<tr>
<td>Roots</td>
<td>2.4</td>
<td>2.1</td>
<td>2.2</td>
<td>2.3</td>
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<tr>
<td>Raw materials</td>
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<td>3.8</td>
<td>0.7</td>
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<td>0.8</td>
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<td>2.2</td>
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</tr>
<tr>
<td>Vegetables</td>
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<td>0.6</td>
<td>0.4</td>
<td>0.6</td>
<td>0.8</td>
<td>0.9</td>
<td>1.5</td>
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<tr>
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<td>0.8</td>
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<td>1.0</td>
<td>1.1</td>
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</table>

Average of the annual data for the corresponding years. 1900, 1910 1922 and 1932 are also five years averages. Source: 1891=1932: Grupo de Estudios de Historia Rural (1983); 1940-1975: Own calculations on the basis of Anuarios Estadisticos de la Produccion Agraria.
Nevertheless, the promising future which was opening up for dry-farming Spanish agriculture was truncated. In both cases the difficulty of introducing either wine or olive oil into the diet of the European population was crucial, as these were not traditionally consumed (Pinilla and Ayuda, forthcoming). The recovery of the French wine industry might have provided simply a conjunctural problem for Spanish exporters, had it not been for the fact that French tariff policies discriminated against them in favor of the Algerian settlers. Finally, the emergence of protectionist policies in other traditional markets, anxious to promote their own national production, added to the range of problems already faced by Spanish exporters. (Pinilla and Ayuda, 2002).

In the case of olive oil, the discovery of a technique for refining oil eroded the Spanish competitive position vis-a-vis other exporters who were offering a product of inferior quality (Ramon, 2005).

A later direction in the development of Spanish agriculture consisted of increasing the production and export of fresh fruits and vegetables, products with which Spain had gained a growing international presence since the middle of the nineteenth century. However the development of these crops required the spread of irrigated land
to counteract the ecological effects of aridity. That was accomplished thanks largely to private initiatives, the protagonists in the expansion of irrigated land in areas most oriented toward export. This was a remarkable success, since increased production and exports were an unquestionable source of improvement and growth for Spanish agriculture (Pinilla and Ayuda, 2006).

From 1875, Spanish agricultural productivity began to improve - especially in the first third of the twentieth century. The only existing estimate of growth of the total productivity factor between 1800 and 1931 shows growth that accelerates progressively: comparatively slowly in a European context, between 1800 and 1857 (0.16% annually), and more rapidly, and in line with other countries, in the second half of the nineteenth century (0.95) and the first third of the twentieth century (1.13) (Bringas, 2000) (Table 3). Comparison of this data with that of Yamada and Ruttan (1989), for Germany, Denmark, France, the United Kingdom and the United States, shows that labour productivity in Spanish agriculture was what grew most between 1890 and 1930.

Table 3. Spanish Agriculture. Total Factor Productivity, 1800-1931 (annual rate of growth)

<table>
<thead>
<tr>
<th>Period</th>
<th>Growth Rate</th>
</tr>
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<tr>
<td>1800-1857</td>
<td>0.16</td>
</tr>
<tr>
<td>1857-1905</td>
<td>0.95</td>
</tr>
<tr>
<td>1905-1931</td>
<td>1.13</td>
</tr>
</tbody>
</table>

Source: Bringas (2000), p. 149

The principal obstacles to a more rapid increase in productivity came primarily from the prices of production factors which did not provide the incentive for change in the appropriate direction even though, from the end of the nineteenth century, the available technology was adapted to environmental conditions. In Spain, the drama of the Spanish countryside was not only its own poverty but also that of the rest of the country. There was insufficient development of urban and industrial activities that would have generated stronger incentives for labour mobility and a higher level of urban demand for agricultural products. The high price of capital and the low cost of

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9 A similar theme regarding Italy in O’Brien and Toniolo (1991).
labour thus constituted the main obstacle to more rapid change, a situation characteristic of backward economies\textsuperscript{10}. We are not saying that Spanish agriculture was caught in a vicious circle of underdevelopment from which it was almost impossible to break out. On the contrary, as Gallego (2001) has highlighted, changes were taking place, but not at a rate that would have permitted a more profound transformation before the Civil War. These changes are, however, perfectly visible. From about 1880 onwards, the relative importance of agriculture in the Spanish economy was greatly diminished. It accounted for only 18% of the GNP in 1935, half of what it was 55 years earlier, and the labour force employed in this sector had fallen from 64% in 1880 to 41% in 1935 (Graph 1).

### Table 4. Land Productivity growth in Spanish Agriculture

<table>
<thead>
<tr>
<th>Year</th>
<th>1897/01</th>
<th>1909/13</th>
<th>1929/31</th>
<th>1945</th>
<th>1955</th>
<th>1965</th>
<th>1975</th>
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<tr>
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<td>109</td>
<td>131</td>
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<td>1945=100</td>
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<td></td>
<td></td>
<td>100</td>
<td>94</td>
<td>137</td>
<td>174</td>
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</table>

Source: 1900-1931: Simpson (1994); 1945-1975: Own calculations on the basis of Anuarios Estadísticos de la Producción Agraria

3. The Spanish agricultural sector during the time of Franco: back to the past and rapid modernization.

The outcome of the Spanish Civil War (1936-39) brought with it three and a half decades of military dictatorship and profound economic and social changes, which had a great impact on the agricultural sector. However, the period between 1939 and the end of General Franco’s regime, with his death in 1975, does not constitute a uniform stage. It is traditionally divided rather into various periods, with 1959 being the turning point in the country’s economic evolution. The 1960s saw the culmination of an industrialization process which had gradually relegated agriculture to a position of ever decreasing importance as an economic sector contributing to economic output. In 1973 the agricultural sector represented 11% of the GNP and 24% of total employment (Graph 1). This decline continued until, in 2000, it reached only 4% of output or 7% of total employment.

\textsuperscript{10} Such was the case in Italy, for example, Cohen and Federico (2001).
The twenty years between the end of the civil war and the implementation of the so-called “Stabilisation Plan” in 1959, are known as the “primer franquismo” (the first stage of the Franco regime). This period has in turn, been divided into two decades owing to the considerable differences between them.

The 1940s prolonged and accentuated the terrible aftermath of the civil war, with the second World War being waged abroad and the regime in Spain causing the country to become internationally isolated. The authoritarian economic concept of Franco’s regime did nothing to improve home affairs either. It was marked by inflexible and extensive market intervention and the autarkic pursuit of complete self-sufficiency, these being ideological principles of the regime. Such policies were also made necessary by serious shortages of products and essential inputs as well as the currency needed to import them.

The state of emergency of the Spanish economy resulted in extremely inefficient markets. This led both public and private agents towards “deviant” behaviour, resulting in the illegal traffic of goods, the proliferation of discriminatory treatment (concession of import licences), and monopolistic practices. All of this served to put a halt to the economic growth established during the first thirty years of the century, and widened the gap between Spain and its European neighbours, especially after 1945 (García Delgado and Jiménez, 2001).

Although the fascist leanings of Franco’s economic policy placed the peasant at the heart of society, the main aim of the regime, to which everyone was subject, was to prepare the country for a possible invasion or conflict abroad (Catalán, 1995). Thus agriculture, still the largest economic sector, was subordinated to the development of war-related industry, contributing to it by means of cheap foodstuffs (“pan barato”) in order to avoid increases in the salary costs of industry\(^\text{11}\). Meanwhile real wages in the agricultural sector dropped as a result of a surplus in the labour force provoked by an increase in the rural population after the Civil War. This workforce lacked the unions or workers movements which had been present during the democratic phase previous to the war but which were banned and eliminated by the regime.

In the face of the overwhelming shortages threatening the country, ration books were introduced to ensure a minimum of basic consumer goods to the entire population.
State run institutions such as the National Wheat Service (Servicio Nacional del Trigo), set up to deal with rationing, controlled the supply of essential goods by assigning obligatory production quotas to each producer which were then bought at low fixed prices. In this way the industrial objective of not increasing the price of foodstuffs and raw materials was also met. However, this centralized allocation of resources suffered from the administrative inadequacies of the regime and the corruption of an undemocratic system. The ensuing reduction in cultivated surface area, production and yields\(^{12}\), combined with an inefficient distribution of limited resources, lead the Spanish population to a generalized situation of sub standard consumption and hunger.

The lack of basic foodstuffs meant that grain was occasionally imported, although by far the greatest part of limited available currency was used to finance industrial acquisitions. The ideology of the regime, against foreign debt, met with an unfavourable international scenario making recourse to importation difficult. Export demand for Spanish agriculture, traditionally Spain’s primary source of currency, decreased as its main customers were immersed in the Second World War (Catalán, 1995).

Thus, the agricultural depression suffered by Spain in the 1940s was the result of a combination of unfavourable external circumstances and political options that were not conducive to a rapid recovery in production. The gradual capitalisation that improved output during the first third of the century was detained, organic type agriculture was increased and an incipient move into cattle rearing was broken off. This backward step from the agricultural change taking place before the civil war is reflected in a fall in labour productivity (in 1950 it was only 60 % of that of 1935) and production (79%) (Graphs 2 and 3).

Table 5. Stock of Tractors and Consumption of Chemical Fertilizers in Spain

<table>
<thead>
<tr>
<th>Year</th>
<th>Consumption of Chemical Fertilizers (Kgrs./Ha.)</th>
<th>Tractors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>P(_2)O(_3)</td>
</tr>
<tr>
<td>1907</td>
<td>0.8</td>
<td>3.5</td>
</tr>
<tr>
<td>1919</td>
<td>1.5</td>
<td>3.9</td>
</tr>
<tr>
<td>1925</td>
<td>1,873</td>
<td></td>
</tr>
<tr>
<td>1928</td>
<td>2.9</td>
<td>9.6</td>
</tr>
</tbody>
</table>

\(^{11}\) Contrary to the rest of western Europe, the agricultural sector increased its participation in the GNP by 5 percentage points and by 7 points in employment between 1935 and 1950.

\(^{12}\) Especially wheat, whose surface area fell as part was diverted to unregulated crops.
The use of fertilizers fell from the end of the Civil War until 1950 when its recovery coincided with pre-war productivity levels (Table 5). Reduced national production, and especially international trade in this area considerably reduced due to the war, brought the importation of chemical fertilizers to a halt (Christiansen, 2001). Moreover, the industrial policy of the Franco regime itself put a stop to these importations (and rationed the use of fertilizers), as well as others such as machinery and fuel which, subjected to quotas and administrative licences, provoked large scale decapitalization in rural Spain (Barciela and López, 2003).

In addition, the urgent need to increase production of basic foodstuffs via “natural” agriculture, meant that the livestock sector was given up; the area of pasture and forage land was reduced; feed import was suspended and the use of cereal for cattle fodder was forbidden. The decline in livestock and cattle rearing meant the end of manure supplies, still a key natural fertilizer, which in turn meant even poorer agricultural yields (Gallego, 1986). All in all, the sacrifice of the agricultural sector to industry meant in turn the sacrifice of the livestock sector to agriculture, breaking the cycle, beneficial to both, set in motion during the first thirty years of the twentieth century (Table 1).

Finally, severe cuts resulting from technological policies contributed to the drop in production and agricultural yields, as did the political and budgetary interruption of educational programmes offered by agronomic centers (Pan-Montojo, 2000).

Low production levels, helped little by official prices, found a demand exceedingly dissatisfied with the quantities established by rationing. This led many producers to divert produce to illegal markets where prices were much higher. Whoever could, took the risk of selling on the black market as profits made there compensated in

<table>
<thead>
<tr>
<th>Year</th>
<th>Fertilizers</th>
<th>Manure</th>
<th>Machine</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1932</td>
<td>4.8</td>
<td>9.6</td>
<td>1.5</td>
<td>4,084</td>
</tr>
<tr>
<td>1940</td>
<td></td>
<td></td>
<td></td>
<td>3,529</td>
</tr>
<tr>
<td>1945</td>
<td>0.7</td>
<td>5.2</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>1950</td>
<td>4.6</td>
<td>10.0</td>
<td>2.7</td>
<td>12,798</td>
</tr>
<tr>
<td>1955</td>
<td>11.0</td>
<td>15.0</td>
<td>3.4</td>
<td>27,671</td>
</tr>
<tr>
<td>1960</td>
<td>14.9</td>
<td>17.7</td>
<td>5.4</td>
<td>56,845</td>
</tr>
<tr>
<td>1965</td>
<td>24.7</td>
<td>20.4</td>
<td>6.5</td>
<td>147,884</td>
</tr>
<tr>
<td>1970</td>
<td>36.2</td>
<td>23.5</td>
<td>12.4</td>
<td>259,819</td>
</tr>
<tr>
<td>1975</td>
<td>43.7</td>
<td>28.4</td>
<td>15.3</td>
<td>379,070</td>
</tr>
</tbody>
</table>

Source: Barciela and López (2005)
most cases for possible punishment. In general, large landowners made more profit as they had a greater capacity for diverting produce, while other producers participated in the black market according to their means. Even so, the regime, which came down hard on the illegal traffic of merchandise, appears to have gradually become more lenient, relaxing controls and applying sanctions with a certain flexibility (Christiansen, 2005). The outlet provided by the black market was the only thing that made the efforts demanded of agriculture to support industrial development, bearable. At the same time the black market exerted a political redistribution of agricultural income; the closer the connection with the regime, the larger the profits (Pan-Montojo, 2000). The accumulation of capital resulting from this situation served largely to finance rapid growth in the industrial and building sectors.

In any case, interventionist policies and the prioritisation of industry were detrimental to most owners who, unlike large landowners, were scarcely able to participate in the black market and whose small, family-run farms were relatively unaffected by existing low agricultural wages.

This group, which formed a large social base of the regime, strove for greater agricultural liberalisation and fought administrative institutions to adjust obligatory quotas to its real production capacity, even gaining support from local authorities (Christiansen, 1999).

In this largely unsatisfactory context, with participation in the black market increasing (the figures for wheat being the highest at over 35% of total production) (Barciela and González, 1986), Franco’s regime was forced to introduce a parallel legal market where producers were able to sell all the wheat that exceeded their obligatory quotas at free prices (Christiansen, 2001). This measure reduced the dimensions of the black market and favoured the extension of cultivated land area which, together with a greater availability of fertilizers from abroad after 1950, permitted a recovery in production (see Graph 3). This recovery produced, among other things, a smaller increase in agricultural prices as compared to those of industry, because of the black market. The recovery of industrial development meant an increasing subordination of agricultural production to agro-industrial companies, and of land exploitation to unavoidable industrial expenses, and a decrease in relative agricultural prices (Langreo and Sumpsí, 1993). The reduction in agricultural income drove small and medium sized producers with low yields to overexploitation and debt, while the largest landowners
increased their investments in capital as the only means to compensate for the unfavourable behaviour of agricultural prices (García, 1957). All producers demanded changes in agricultural policy from the government in tune with some voices within the regime.

Likewise, workers strikes in 1951, brought about by the increase in the cost of living (23% in only that year), showed that the autarkic system, set up in 1939, had worn itself out, as had the prevailing agricultural policy. Firstly, agricultural prices were liberated, changing the means by which cheap foodstuffs were supplied to the urban and industrial populations. Secondly, although wheat continued to be regulated by the administration, the official fixed purchasing prices were increased in order to support even the worst affected producers’ incomes, to provide producers with security (importation was still uncommon), and to concentrate all production in one legal market. Finally, a strategy was embarked upon to maximize production by means of decisive agricultural capitalisation, translated into a rapid and significant increase in the

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13 Wheat was by far the most common crop in Spain, and the livelihood of most farmers. Tables 1 and 2.
number of tractors in the country from 1951, while an ever increasing rural migration was unleashed (see table 5)\textsuperscript{14}.

While the autarkic, interventionist system was not abandoned completely, the 1950s saw a gradual economic liberalization as well as a certain opening up abroad favoured by a new world context. The “cold war” brought the United Status closer to Franco’s regime and military and economic agreements were signed in 1953. The end of international isolation and the start of American aid allowed the Spanish economy to increase its imports of products and inputs. Rationing ceased in this same year and general modernisation was accelerated, as it was in agriculture too (Barciela and López, 2003).

Mechanisation, a primordial means of reducing unitary production costs, spread from large farms, first displacing thousands of landless workers who were forced to emigrate\textsuperscript{15}. Rural migration raised agricultural wages, providing a greater incentive to substitute machinery for workers in farms of a certain size. In family-run farms, debts incurred in order to face growing exploitation costs were ultimately translated into the departure of the younger family members\textsuperscript{16}. Industrial and inner city growth, added to the demand for labour in some European countries, made this demographic transfer possible.

The increase in direct land cultivation, a consequence as much of market dynamics as of the regime’s policies, also added to this exodus from rural areas (Pan-Montojo, 2000). Given that according to the Franco regime’s logic, agrarian reform did not imply the distribution of land but rather the consolidation and modernization of property, legislation did not favour tenants and sharecroppers but instead evicted them and radically increased the rents they had to pay. This logic also focused on increasing the amount of irrigated land to be able to attain production levels necessary for self sufficiency. Although increased irrigation also included settlements of tenant farmers, it did not produce many new tenants, even during the 1950s, when prewar hydraulic Works were completed and irrigated land area increased more than a million hectares. And so longstanding landowners who brought irrigation to their drylands were the main beneficiaries, and direct cultivation was further encouraged.

\textsuperscript{14}To which the recovery of internal industrial production contributed greatly. (Martínez Ruiz, 2000).
\textsuperscript{15}Langreo and Sumpsi (1995); Barciela, and López (2003).
\textsuperscript{16}García (1957) and Pan-Montojo (2001).
Around 1956, industrial and urban development was progressing as rapidly as the economic weight of agriculture was declining, and migration continued. Advances in per capita income and urban growth were creating growing preferences for goods with a higher income elasticity (meat, milk). However, livestock supply did not take off as its development was impeded by the importance given to traditional overdimensioned crops (Barciela et al., 2001). The inevitable disparity between supply and demand played a considerable part in large inflationary outbreaks, bringing about yet more urban strikes and protests at the fall in real wages. Imports did not alleviate either direct (meat) or indirect (feed) livestock needs with the continuing prioritization of industry in a foreign sector still lacking in currency. Moreover, the existence of multiple exchange types (according to product) and an overvalued peseta were also detrimental to Spain’s, still basically agricultural, exportation, causing the foreign trade deficit to soar.

The need for internal stability and the normalization of foreign relations led the government to change its economic policy as from 1957. But the external threat of suspension of payments added to the fact that Spain had belonged to the IMF and the OECE since 1958, imposed important economic adjustments, and the regime abandoned its interventionist and autarkic principles in exchange for survival. Thus, the 1959 Stabilisation and Liberalisation Plan for the Spanish economy completely changed the country’s economic evolution, bringing it in line with the neighbouring international scenario. Industrial development had already moved a long way from the direction of the agricultural sector whose declining contribution to the economy was inevitable, and which had gone from financing other sectors to requiring capital in order to maintain profitability, while industry and services offered better perspectives for the future.

Following liberalisation measures, the Spanish economy took advantage of the expansion of international markets in the 1960s in order to obtain important financing sources as much through export as by other means (transfer of emigrants, tourism and foreign investment). The industrial sector set in motion a marked increase in per capita income, higher than that of countries such as Italy or West Germany. And, although liberalisation lost strength during this decade, the economic impact was so great that very profound structural changes were produced (Garcia Delgado and Jiménez, 2001).

The notable improvement in personal income, together with spectacular urban expansion, worsened the imbalance between the supply and demand of certain foodstuffs, making prices rocket, and negatively affecting results on the agricultural
trade balance. Wheat production, artificially sustained by official pricing, began to generate surpluses, while the need for feed grain grew as did imports to satisfy the demand.

While the agricultural trade balance went into deficit and inflation rose, a report published by FAO (1966) about the Spanish agricultural situation identified wheat protectionism as the main obstacle to the development of feed and fodder grains necessary to livestock expansion. Between 1967 and 1971 agricultural policy encouraged, mainly through pricing, an intensive substitution of wheat by barley (Table 2). This was accompanied by spectacular growth in other products such as corn, alfalfa and sunflower seed. These crops powered the speedy development of intensive livestock rearing that successfully provided meat at affordable prices in a mass consumption market. In this way, between 1965 and 1973, livestock, and especially meat, substantially increased its contribution to agricultural output, balancing its participation in a sector previously dominated by agriculture\(^\text{17}\) (Clar, 2005) (Table 1).

In one way, this more complementary relationship between agriculture and livestock rearing was also instrumental to substituting imports and reducing the agricultural foreign deficit, although the seriousness of this deficit was minimised, in comparison with the situation twenty years before, by the presence of non agricultural external financing sources\(^\text{18}\).

The Agricultural sector lost importance between 1960 and 1970, not only in its contribution to total exports but also in its percentage of the active workforce and its participation in GNP with figures halved (20 and 10% respectively in 1970) (see Graph 1). On the other hand, the increase in agricultural productivity was very intense, with growth rates higher than any other developed country, the result of exceedingly intense capitalisation and a massive rural exodus\(^\text{19}\).

The opening up of Spain to other countries and internal industrial development provided agriculture with energetic, continuous and cheap supply, as well as with the technology offered by the “green revolution”, helping it to advance rapidly in the agricultural capitalization begun in the 1950s. Meanwhile, rural migration reached an

\(^{17}\) Spanish percentages for crops share in the agricultural sector exceeded even those of Portugal and Italy.

\(^{18}\) For example, industrial exports, while the share of agricultural exports fell from 54% in 1964 to 25% in 1973.
all time high with two million displaced people between 1960 and 1970. The steady decrease in agricultural income was added to the growing attraction of the industry and services sectors. This led the worst affected landowners first to divide their time between agriculture and more lucrative activities (commerce, industry), and then finally to abandon agriculture (Naredo, 1971).

The migration of thousands of smallholders reduced farm numbers considerably while their average size increased. The land market and certain agricultural policies consolidated the predominance of cultivation by landowners begun in 1940. Among these policies, the expansion of irrigated land reached its peak between 1961 and 1971, benefiting landowners almost exclusively, while the original plans to set up colonies of tenant farmers in irrigated areas were abandoned little by little.

The new agricultural objective, set down since 1964 in three successive four-year Development Plans, was to diversify production, substituting imports (grain, feed, fodder) and fomenting products for export (fruit) as well as for more flexible income internal consumption (vegetables, livestock products). At the same time the setting up of more viable properties was intensified through a policy of concentrating the plots of land existing each farm (Barciela et al., 2001).

In conclusion, the period from 1960 to 1973 continued, in depth and with great vigor, with the processes initiated in the 1950s (capitalization, rural exodus, irrigation expansion), but in a new context where agriculture was no longer the major economic sector. Increasingly subordinated to progress in other sectors, the land became essentially a supplier of labour and a market for industrial products and investors, given its growing need for financing.


The role of agriculture in modern economic development has been intensively explored, as much by development and economic growth theorists as by successive generations of economic historians. Giovanni Federico has quite recently reviewed this

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19 Between 1960 and 1970, Spain grew 119% in wheat units produced per male agricultural worker, while its closest rivals, Italy and Belgium, grew 107% (calculated from Hayami y Ruttan, 1989, p. 500).
research up to the present day, and concluded that “It seems likely that agricultural growth did contribute to modern economic growth, but the exact mechanism of this contribution is still uncertain.” (Federico, 2005, 231). Therefore, the conventional three-pronged-role framework, posited first by Johnston and Mellor (1961), can be useful as we consider the relationship between agricultural and economic development in Spain, if we keep in mind that Johnston and Mellor did not consider the fulfilment of these functions to be prerequisites for modern economic growth, nor that they could develop equally strongly in every country. In line with this contribution and that of Mellor (1970), the relationship of agriculture to development varies from country to country, depending on environmental conditions, human capital, and the historical experiences that have shaped very diverse economic, cultural, institutional and physical environments. In the same way, the level of revenue in the agricultural sector at the beginning of the development process is crucial to understanding the contribution of agriculture.

In Spain’s case, pre-conditions did not encourage the onset of the industrialisation process, and agriculture forms a significant part of this dynamic. Not only was it impossible to adopt the technical changes that were transforming the agricultural sectors of northwestern Europe but, in the eighteenth century, due to institutional constraints – of which Mesta is the best example – opportunities to expand cultivated land were not fully grasped (Llopis, 2004). All of this contributed to shape the endowment and price of production factors which would later unfavourably influence the potential for growth. At the same time, the scant development of urban sectors or non-agricultural rural activities, in the pre-industrial period, did not promote a great degree of agricultural progress.

If we begin with the ‘product role’, that is, the supply of foodstuffs to the population (and raw materials to industry) and to earn foreign currency, Spanish agriculture was capable, at least until 1936, of expanding its production at a faster rate than the population growth. It had already achieved this during the nineteenth century, and, after the depression at the end of the century, the growth in production vis a vis that of the population was even more pronounced.

Enough productive capacity was generated to make the country a net exporter of agricultural products and foodstuffs. These constituted a very substantial portion of total exports and caused the country to become one of the primary world exporters of
Mediterranean products (fresh fruits and vegetables, wine and olive oil). Without the contribution of this foreign income, the financing of necessary imports to the country’s industrial development would have been problematic.

After the civil war, and paradoxically at the peak of the industrialisation process, significant problems arose which were summed up by an insufficient supply of basic foodstuffs in the 1940s. In the following decade, although these problems had been overcome, there was a growing imbalance between supply and demand. This generated a simultaneous surplus of low-income elasticity products and a scarcity of high-income elasticity products like meat, as well as the necessary inputs to produce them. It was necessary to resort to extensive imports to solve this problem. To a great extent, as a consequence of this, the commercial agricultural balance in Spain turned into a deficit from the end of the 1950s and for more than a decade following. Thus, agriculture ceased to be the principal source of foreign currency, being replaced by increasing income from tourism and funds from emigrants.

The data show that terms of trade levels of agricultural products against manufactured goods as a possible way of transferring resources through their deterioration only took place in a significant way after 1966. Until then, from 1890 onward, a marked stability predominated (Prados de la Escosura, 2004)\(^\text{20}\).

Continuing with the ‘market’ role, i.e. the purchase of manufactured goods, from the end of the nineteenth century until 1935, the progressive capitalisation of Spanish agriculture wasn’t strong enough to fulfil the role of extending the market for agricultural industrial products\(^\text{21}\). Regarding the consumption of other manufactured goods, the countryside began to be a growth market for industry, although perhaps with a relatively weak demand given the reduced purchasing power by the majority of the rural population, and in spite of the reserve of the national market that it enjoyed through tariff protection.

The introduction of chemical fertilisers and machinery did not give a strong impetus to the interior industrial production because of the reduced Spanish market. Its growth was better served by the mass production of large foreign companies. Only in

\(^{20}\) This tendency concords in general with international trends (Federico, 2005).

\(^{21}\) In the Johnston and Mellor role framework the country is assumed to be a closed economy (with the exports of agricultural products exception). In a more realistic open economy framework it is necessary to take in account imports of goods (food), labour and capital and exports of manufactures. See Nichols (1964) and Federico (2005)
certain cases was it possible to monopolise the national market with the help of protectionism.

During the 1940s, the large number of farm labourers, low wages and difficulties in importing the necessary manufacturing components, depressed even more the role of agriculture as a market for industry. This situation changed markedly at the beginning of the following decade when the return to a capitalised agriculture and an improvement in the industrial climate progressively created a market for national businesses. There was a strong expansion of internal industrial production of agricultural inputs from 1960 onward, due to the spread of agricultural capitalisation. On the other hand, the great migration from rural areas that took place from 1950 raised agricultural wages, allowing an increased demand for manufactured products from those who remained in the countryside.

A final word about the ‘factor’ role; the supply of a work force to industry or to the new economic activities that developed in the expanding cities took shape in a very elastic way. The slow movement of population from the rural areas of Spain until the end of the nineteenth century, was primarily due to the lack of urban demand for workers as a consequence of the weakness of the industrialization process. The income constraints in the case of reduced migration outside the country was also a causal factor for this low mobility.

Progressively overcoming both obstacles, Spain began to participate in large numbers in transatlantic emigration at the end of the nineteenth century. Internal migration also increased after 1910 - in a very special way during the 1920s. This exodus of the population gave an incentive to greater agricultural mechanisation in the areas of greatest migration, and provided workers for the growth of the main industrial areas in the northeast of the country and Madrid. In the south, the weakness of the rural exodus favoured fewer changes and the scant development of linkages between sectors.

Once again, the decade of the 1940s saw a brief slow-down in this process. Regaining force after 1950 with spectacular growth in internal migration, it reached its peak in the 1960s, a time when the urban and industrial demand for workers reached its height. The elevated elasticity in the supply of labour, when the Spanish economy grew at the greatest rate in the world, avoided the undermining of development possibilities in industry by tensions over wages. However, the Spanish countryside did not only supply the internal demand, but also saw an intense revival of emigration, to Latin
America in the 1940s and from 1950, to the more developed European countries. This large exodus from rural areas resulted in increased wages and a scarcity of work. This provided the incentive to rapidly increase the mechanisation of the farming sector from then on.

If we focus now on the supply of capital from the agricultural sector, we do not rely on studies that permit us to point clearly to its role until 1936, especially with regard to direct investment or through the financial system. In those years, capital was transferred from agriculture to other sectors through the greater tax burden borne by the agricultural sector. Nevertheless, the tax burden experienced by agriculture was not very strong. The system was clearly regressive and not at all fair, since the small farmers bore a much higher fiscal burden than large landowners (Comín, 1988; Vallejo, 2001).

It was, without a doubt, the decade of the 1940s in which the agricultural sector played a more important role as a source of capital accumulation and finance, due in large part to a context of political and economic exceptions during the early Franco years. The important benefits generated by the black market, especially for the large producers, and the higher increase in agricultural prices compared to industrial prices, brought about a capacity for financing which, faced with strong administrative restrictions on the capitalisation of farming, and the presence of a large number of workers served to aid other sectors. The same Francoist system of financing also enabled the transfer of capital between sectors, since the banks also acted as basic investment institutions, collecting funds generated in the rural environment and using them to finance industry and construction. In addition to the growth of the black market, bank deposits in the countryside grew substantially with the purchase of crops by official organisations who used the banks as intermediaries to pay the producers.

In the first half of the fifties, the end of the black market, the rising costs of the agricultural labour force, and the requirement to incur additional expense in order to benefit from the cultivation of the land, led to a significant diminishing of profits, while the relationship between agricultural and industrial prices reversed, causing the agricultural sector to transfer resources to industry, since prices paid by farmers grew more than the ones received. Between 1955 and 1958, agricultural prices once again rose above those of industry, recovering for the moment the capacity for agricultural financing. However, from the sixties, agriculture’s financial needs grew so fast that not even price increases could compensate. This, in turn, had an impact on agricultural
savings and the capacity for financing that agriculture possessed. Investments in farming continued to rise, converting the agricultural sector into a new importer of capital from the middle of the 1960s.

In short, we have tried to evaluate the different channels of influence on agriculture in the economic development of Spain, considering the lack of a solid theoretical framework which would permit us to quantify that contribution. In this sense, Federico (2005) concluded, as a possible approximation that might be considered, that “the faster the TFP growth in agriculture, the higher its contribution to modern economic growth” (p. 230), although such a result might not be conclusive either. The data on international comparisons compiled by Federico shows a rate of growth of TFP in Spain between 1870 and 1938 very similar to that of the majority of western European countries. Figures after 1960 show an even faster growth of the Spanish TFP in the European context, although the inclusion of the decades of the forties and the fifties undoubtedly worsened the result, moving it closer to the average.

In short we can conclude that the agrarian sector was characterised by two counter-vailing themes: it was not, in itself, dynamic enough to give momentum to the process of industrialisation; but nor was it so static as to be the causal factor in the slow pace of industrial development in Spain.

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