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# Meat consumption and trade in historical perspective

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**ABSTRACT:** *This dissertation analyses the historical evolution of meat consumption and trade, focusing on Spain from the mid-20th century to the present while dedicating a chapter to a global perspective during the first globalization. Initially shaped by a Mediterranean diet and low meat intake, Spain underwent rapid economic growth in the 1960s, fuelling an increase in meat consumption and the adoption of intensive livestock systems. By the 1980s–1990s, per capita consumption was higher than in most European countries. The thesis aims to show the role of prices, income, and preferences in the evolution of meat consumption during this period. Inequalities disappeared in the 1980s but re-emerged later due to the consumption of more expensive processed meats. The global chapter highlights the role of England as the world's main importer and the peculiarities of meat in trade during the first globalization. During the second globalization, Spain evolved into a leading pork exporter, boosted by the Home Market Effect, EU accession, and new demand from markets such as China. (JEL CODES: N50, Q17, D12, N70)*

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## 1. Introduction

The consumption and trade of meat have been extensively studied in economic history (Perrin, 2006). The study of both perspectives makes it possible to observe two connotations (or implications) in the long term regarding meat. The first is clearly positive. Namely, from pre-industrial times until well into the 20th century, higher meat consumption implied greater well-being (for example, from an anthropometric perspective), and the global trade in meat expanded through the invention and diffusion of mechanical refrigeration (that is, a technological innovation). The second is negative: starting from the latter half of the 20th century, excessive meat intake became linked to health issues—such as cardiovascular disease, obesity, and diabetes—and the rapid expansion of meat production, driven by intensive livestock farming, provoked environmental concerns. Spain is a good example of both perspectives. Historically, it had a relatively low level of meat consumption, grounded in a Mediterranean-style diet (bread, legumes, fish, and some fruits and vegetables) but malnutrition was widespread in the early 20th century (Medina-Albaladejo, Martínez-Carrión and Calatayud, 2023). From the 1960s onward, the country's economic transformation fuelled a surge in meat intake, pushing the diet toward more Westernized patterns. By the 1980s and 1990s, meat consumption often exceeded recommended levels, contributing to diseases related to the epidemiological transition (Moreno, Sarría and Popkin, 2002). Initially, Spain's modest meat demand limited production and exports, but once demand began to climb, the sector shifted toward an agro-industrial model featuring imported feed, higher-yielding breeds, and sizable economies of scale through integration and business concentration in the sector (Clar, 2008). Membership in the European Union and the eradication of swine fever then facilitated a rapid expansion of exports, transforming Spain into the world's leading pork exporter by 2020, despite significant environmental impacts along the way. While one chapter takes a broader international view from the 19th century to World War II, most of the research focuses on Spain from the second half of the 20th century to the present. This timeframe captures how a country with relatively low meat consumption and net imports in the 1950s became one of Europe's top consumers by the late 20th century, and eventually the world's leading exporter of pork.

The first three chapters concentrate on meat consumption in Spain. They describe how intake levels evolved nationally using multiple sources, how income and regional disparities shifted, and how rising incomes, price changes, and shifting preferences shaped the “massification” of meat. The last two chapters focus on the trade of meat, first reviewing the formation of a global meat market between the 19th century and World War II, and then assessing the determinants of Spanish meat exports since the late 20th century. In these last two chapters, two major phases of globalization unfold. The first, dominated by Britain's role as a massive meat importer, exemplifies the “Great Specialisation”: the production and export of industrial goods from the industrial core in exchange for food from the periphery (O'Rourke and Findlay, 2007). The second, in which Spain rose to prominence as an exporter, highlights how developed nations also trade primary products (meat) among themselves and toward emerging markets like China, where nutritional transition is still underway.

## 2. Framework and methodology

This thesis adopts both descriptive and causal approaches to investigate consumption and trade in meat. The initial part focuses on consumption in Spain from the 1950s to the present and draws on data from Household Budget Surveys, the Food Consumption Panel, and FAO statistics. These sources allow for an examination of total and disaggregated intake (beef, lamb, chicken, pork, fresh, frozen, processed), revealing significant trends and a divergence in estimates depending on the source used. Reconciling these perspectives underscores the distinction between actual consumption—more closely tied to health impacts—and food availability, which has implications for environmental studies.

Additionally, to understand the underlying factors of meat consumption, the growth in purchasing power is decomposed into income and price effects, and the Response Factor is calculated (Collantes, 2019). The latter calculates how meat consumption changes in relation to changes in its purchasing power. This makes it possible to observe that rising household incomes mattered greatly, but intensifying livestock production, facilitated by lower costs, also allowed large segments of the population to consume animal proteins regularly. Rural-urban migration, historical dietary habits, and the introduction of standardized products—particularly chicken and pork—played a part in shifting consumer preferences. A parallel comparison with dairy consumption highlights both similarities and differences in the underlying factors behind consumption. This combined analysis illuminates the underpinnings of Spain's broader nutritional transition from mostly plant-based diets to patterns characterized by higher animal product consumption.

In its examination of trade, the thesis first situates meat within the context of long-term global market integration, examining data from the International Institute of Agriculture and Britain's foreign trade records to show how mechanical refrigeration opened channels between production areas like Argentina, Uruguay, Australia, and New Zealand and European import centres. Britain acted almost as a monopsony until policy shifts in the interwar period realigned flows toward empire countries. The focus then turns to Spain's experience from the late 20th century, employing a gravity model of international trade with COMTRADE data to explain the spectacular expansion of Spanish pork exports. The model analyses whether a Home Market Effect arose—i.e., whether decades of strong domestic consumption generated economies of scale and how factors like the country's accession to the EU boosted trade.

## 3. Main findings

The findings indicate that Spanish meat consumption grew markedly between the 1950s and the 1990s, then showed signs of stabilizing or even declining slightly thereafter, although sources disagree about the exact trajectory beyond the 1990s. Therefore, a key finding is the use of the correct source to understand long-term consumption trajectories. Distinguishing between “actual consumption” and “available meat” is essential for understanding the heal-

th-related costs and the environmental costs associated with meat consumption. Income- and region-based inequalities in access to meat were initially high but nearly vanished by the final decades of the 20th century. The data show a resurgence of income-based inequalities in the last two decades, explained primarily by the consumption of more expensive processed meats. Another important outcome is the identification of two consumption models. In the first (1950–90), meat (and milk) consumption soared because of standardized, intensively produced chicken and pork (and processed milk); in the second, intake either plateaued or declined, yet more processed meat (and dairy products) took a growing share. Although rising incomes are important in explaining the increase in meat consumption during the massification phase, the role of falling prices in more industrialised meats (chicken and pork) is even more significant. Furthermore, the role of preferences for processed meat consumption is essential to understanding its rise since the 1990s, likely reinforced by marketing campaigns from the sector.

Turning to the global dimension, the first globalization did not integrate all agri-food products equally. Since the early 19th century, the international cereal market expanded and integrated, but exporting perishable goods like meat needed mechanical refrigeration. Once it spread in the early 20th century, the global meat trade became even more dynamic than that of cereals. This meant that countries with an strong comparative advantage for meat production and export captured an ever-increasing share of world exports. However, British protectionism and imperial preferences from 1931 onward showed how a single leading importer could upend global routes. Since the 1980s, Spain emerged as an industrialised exporter serving both wealthy neighbours (intra-European trade) and rising economies like China, displaying stylized facts typical of the second globalization. The gravity model demonstrates how domestic demand in the 1960s–1980s spurred economies of scale in the pork sector (Home Market Effect), thereby boosting exports. Furthermore, liberalisation of the sector following Spain's entry into the European Union played a crucial role in this process.

Overall, these results show how Spain's delayed, yet rapid nutritional transition coincided with the imports of high-output breeding systems, the massive imports of feed and foreign technology, together with the integration of the value chain in the pork sector, enabling it to transition from meeting local protein needs to capturing foreign markets. While this single-product focus offers clarity, it also leaves out broader dietary perspectives, including the role of fish or fruits and vegetables. Nonetheless, the thesis highlights how looking closely at one product can illuminate the drivers behind large-scale historical changes in the agri-food sector.

## 4. Concluding remarks

This dissertation has traced how meat consumption and trade developed from the 19th century through the early 21st century, concentrating on Spain but also examining global patterns. It shows that Spanish society undertook a rapid shift toward a meat-rich diet between the 1950s and 1990s, followed by a phase of relative saturation. Accompanying this dietary

transformation were expansions in production and a marked reduction in inequalities, though these re-emerged later due to the increase in processed meat consumption. On the global stage, mechanical refrigeration initially integrated markets by enabling distant exporters to meet European demand, notably Britain's. In the second globalization, Spain turned from a net importer into a leading pork exporter, propelled by the Home Market Effect, membership in the EU, and the economic growth of China.

By combining descriptive reconstruction of long-term trends with quantitative and qualitative methods, the thesis contributes fresh insights into how a single agricultural product can exemplify shifts in diet, technology, and trade. While focusing on meat necessarily leaves other parts of the Spanish diet less explored, it opens multiple future lines of research: investigations into other staple foods, more detailed international comparisons, and deeper inquiries into firm-level strategies in the meat sector. Indeed, the constant comparison of meat with dairy products allows us to observe differences in products that are often grouped together under "livestock products." In that sense, rather than offering the final word, this dissertation marks a starting point for further analysis of how new production methods, rising incomes, evolving consumer preferences, and trade policies intersect to shape the historical trajectories of key food products. These issues remain central to contemporary discussions about health, sustainability, and global market integration.

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