

The Margins of Spanish Trade: The Import Side, 1880-1914

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Objective and motivation

This paper proposes another look at an old chestnut in economic history: what framework best fits international trade before 1914? At first pass, the great specialization in trade—New World resources for Old World manufacture— precipitated by the period’s decline in transport costs, and resulting in the convergence in factor prices, would seem to give comfort to the Heckscher-Ohlin model. Still, attempts (Estevadeordal and Taylor 2002) to pin down the relation between factor content and trade have produced mixed results. An issue is that the European core was not only the major exporter of manufacturing goods, but it was also the main importer during the period as well. It would be premature to conclude, however, that new trade theory provides a better fit of the data, since these models generally predict that prices vary inversely with productivity, and this not square with the evidence on terms of trade and export prices we introduce in this paper.¹

We analyze the nature of trade through the prism of Spanish imports of cotton textiles during the first wave of globalization. We find that *across* broadly defined product categories, factor-endowment specialization was a weak predictor of trade. In contrast, *within* product categories capital and skill-abundant countries exported products consistent with their endowment advantage, shipping products of superior quality which commanded higher prices, while poor countries sold goods of lower quality. Although Heckscher-Ohlin cannot be rejected, our findings point to a more nuanced or eclectic approach based on heterogeneous models of trade which combines elements of interindustry (comparative advantage) and intraindustry (product differentiation) trade. These models start with the observation that participation in foreign trade is far from random. Compared to non-trading firms, exporters are larger, more productive and capital intensive, employing a more skilled labour force, and paying higher wages. There is a cutoff point below which less productive firms do not engage in trade. A fall in trade costs causes new firms—represented in our case by country-products—to commence shipping goods. Increased competition promotes the sorting and shuffling of goods and producers. Comparative advantage does not exclusively assure success as firm characteristics have a role to play too.

¹ After a long period of decline, prices of manufacturing goods began to move upwards in the late nineteenth century (Kindleberger 1956; Kuznets 1967).

Using highly disaggregated data and drawing on recent conceptual insights in international trade, we decompose the value of imports of cotton textiles into intensive and extensive components or margins. We find that falling trade costs did lead to increased competition from emerging countries, but that the fixed costs of trade were substantial.² Along the lines of Hummels and Klenow (2005), big and rich countries exploited their natural advantages of size, shipping larger volumes of each good (the intensive margin), and a wider set of goods (the extensive margin). Confronted by unanticipated changes in foreign commercial policy, big countries responded by shipping goods of better quality commensurate with levels of human capital and productivity. This advantage was not available to emerging producers in the industry.

These results shed light on the effects of globalization on worker well-being—in the past as well as today. If rich and poor countries manufactured similar goods, the decline in trade costs or the opening up of production facilities in low-wage countries, would have put downward pressure on wages everywhere. But if rich and poor countries produced distinctly different items, these types of pressures were moderated. The question is how quickly and effectively rich countries attenuated these pressures by moving up the quality and product ladder. This type of specialization and the increase in variety have been detected in trade patterns in the current wave of globalization (Schott 2004). Our project asks whether this was also the case in the earlier wave.

Why cotton textiles? In the period's iconic world industry, technology was public and competition across broad categories (yarn or woven goods, for instance) was fierce. Because of improvements in ring-spinning machinery, low-wage emerging countries competed head on against industries in developed countries operating mainly spinning mules and paying high wages. Our approach provides a framework to study how industries in the European core responded to competition from emerging economies (and vice versa), and whether or not large and rich countries had a built-in advantage in responding to unanticipated shocks.

Why Spain? Spain was a representative middle-income country with a large domestic market, and, again typically, its industry had some degree of tariff protection.

² The intuition here is that lower trade costs reduced the cutoff point below which firms cannot export successfully. Large and rich countries had more export firms above this cutoff point.

While the country had a sizeable and growing textile industry of its own, it was not landlocked, the industry's fortunes being tied to the international context (Sudrià 1983). To be sure, textile imports comprised a small fraction of the value of all Spanish imports, but outcomes are not the same as processes and it does not follow that the domestic market was insulated from international competition. The opposite was also the case.³

The paper is organized in four sections. We begin with an overview of developments in the world and Spanish textile industries. We then introduce our data source and report basic results on trading partners, and the number of products imported and their prices. Next, we estimate the contributions of the intensive and extensive margins to trade. We conclude with some implications of our findings for the history of international trade before 1914.

The Background: The Spanish Foreign Sector and the World Textile Industry

Measured as the trade content of GDP, Spain's degree of openness doubled between 1870 and 1914, much of the increase occurring in the first half of this period which was then followed by a period of levelling off. The depreciation of the peseta between 1890 and 1905 seems to have had little effect on exports. The adoption of tariffs in 1891 and 1906 was a protectionist backlash whose effects were ambiguous. The 1891 tariff increase was general; that of 1906 more selective in its protection of high-value goods (Sabaté 1995). These decades experienced relatively lower GDP growth, mainly a result of a drop in TFP (Prados de la Escosura and Rosés 2009). Despite the rise in trade costs in the years before 1914, Tena Junguito (2007) reports an "accelerating" rise in imports, the terms of trade moving against the country as well. Spain was clearly not immune from changes in the international economy.

The history of the Spanish textile industry was part and parcel of the development of the global industry, the main lines of which are well known to economic historians. The U.K. industry benefited from economies of scale connected to the agglomeration of skilled labour, merchants, bankers, insurance agents, and satellite industries collected in Lancashire. Into the 1880s, the British maintained their export share on the continent and

³ Finally, our approach allows us to go beyond traditional measures of the cost of the tariff, because in isolating changes in product variety, we are implicitly describing consumer and producer gains of trade and welfare losses associated with the imposition of higher tariffs. We leave this for future research.

elsewhere, shipping brand items at both low and high ends. Initially, continental producers, like those in France and Germany, did not pose a threat to British dominance, but by the turn of the century they had begun exploiting market niches for their own specialty items (Brown 1995). With the exception of the British, intra-European trade was the mainstay of continental producers. Typically, the Spanish market, according to the U.S. trade representative (Odell 1911, p. 12) in the region, was divided by specialty. “England predominates in the trade in cotton fabrics and yarns, Germany in velvets, ribbons, and knit goods, and Switzerland in tulle and laces.”

All producers faced high fixed costs of exporting, but big countries had a distinct advantage. For instance, German industry benefited from agents in the field or commercial travellers. Employed by groups of export firms, these agents who had “thorough knowledge of Spanish were sent to all parts of the country (Odell 1911, p. 14),” taking special orders often considered too small by Lancashire standards (Brown 1995, p. 512). They also provided lines of credit, an exorbitant privilege unavailable to other producers. “Splendid banking facilities enable the country to offer long credits in competition with England and other nations (Odell 1911, p. 14).”

Market share was not unchallenged, however, because of the public nature of technology and because of competition from close and not always perfect substitutes. Beginning in the 1880s, low-wage producers began to cast a long-term shadow on industry in the European core. Ring and mule spinning technologies improved, enabling greater overlap and flexibility in types of yarn spun. Although quality was a continuous source of contention, these near-goods were price competitive, and producers, from Italy to Japan, began to encroach on markets previously beyond reach (Saxonhouse and Wright 2004, 2010). For instance, Brazil was able to capture most of its home market by the early twentieth century. With the fall in transport costs, factor abundance increasingly had a role in the location of the industry. This wave of competition was supported by machinery exports from Lancashire and the complementary displacement of British engineers, millwrights, and foremen around the world.

The development of the Spanish industry was in many ways not untypical of low-wage producers. The industry, which was highly concentrated in and around Barcelona, was composed of integrated spinning and weaving mills, many of which were small,

operating a mix of mules and rings, and employing a high proportion of women. Plagued by high-energy costs, low speeds of operation, and overstaffing (Clark 1987), the industry produced relatively coarse yarns, with the ring becoming the dominant technology from the 1880s onward (Domenech 2008, p. 6). The local industry received hefty tariff protection, at least nominally. As depicted in Figure 1, the 1891 tariff cut into imports; that of 1906 had more mixed results. Rates were fixed by weight, amounting to as much as 30 percent before the war, but their effectiveness fluctuated with price changes at home and abroad, and duties were also imposed on raw cotton imports. The tariff encouraged mills to manufacture a wide range of goods on short production runs (Odell 1911, p. 22). The overall picture given in Figure 1 is one of moderate growth, with the industry claiming an increasing share of the domestic market in low-end items. Nonetheless, throughout the period, Spain like other European producers was both an exporter and importer of cotton goods. Exports (Table 1) consisted mainly of white or unbleached goods, the principal destinations being the Spanish colonies, although European outlets were not unknown (Figures 2.1 and 2.2). The Spanish-American War was detrimental to the export trade, but producers were able to rebound from the fall in sales to the Philippines and Europe, and develop new markets in Argentina. Imports were already on the decline before 1898, but they too made up lost ground despite the tariff changes of 1906. We return to this puzzle in a later section of the paper.

Figures 3.1 and 3.2 present a comparative picture of the Spanish and world industries based on purchases of cotton-spinning machinery. Across major producers in the industry, businesses bought mules to spin medium, and, increasingly, fine-yarn counts or numbers. The Spanish industry purchased mules to manufacture medium counts. The fineness of yarn actually declined in the late 1890s, rising after the adoption of the 1906 tariff. The Spanish ring sector mirrored developments elsewhere in the world, but showed a sharp increase in count spun after the later tariff changes. The implication is that the restrictive commercial policy gave Catalan producers some leeway in the home market and they began to encroach on foreign competitors. The U.S. trade representative (Odell 1911, p. 11) explained the strategy:

A close comparison of these [foreign] goods and the native zephyrs does not reveal any great difference as regards quality, weave, texture, and finish. In fact, many of the goods advertised as English zephyrs are made in Spanish mills. In one I found

Spanish-made cotton goods stamped in English, “Cambric, Superior Quality,” and attached to the piece was a tag made in imitation of the kind used by the customhouse on imported goods. Any existing preference for foreign goods would seem to be founded on prejudice and a feeling that articles from abroad possess a particular excellence rather than on any real difference in quality.

This may have been an optimistic assessment, because labour productivity remained low, if not stagnated in the Belle Époque (Domenech 2008, p. 20). There was also the response of foreign competitors to contend with. Returning to Figure 1, imports rose steadily from their low level in 1898, as competitors developed new market niches, mainly of high-end items. These developments were already in place before the tariff. The import price index (Tena Junguito 2007, pp. 34-35) doubled from 1890, the terms of trade moving decidedly against Spain. (Export prices rose by 60 percent in the same period.) We investigate these adjustments in more detail below.

Data and descriptive statistics

Our main data source is *Estadística de Comercio Exterior de España* which gives information on products traded, country of origin and shipping, and prices. Our work expands on that of Tena Junguito (2007). The product information corresponds approximately to the 5-digit level of the Standard International Trade Classification that we have fitted to the original data. For instance, we have recorded cotton gauze (SITC 65211), woven tufted textile fabrics, (65497), cotton pile (65214), and chenille woven fabrics (65215). For many items no direct correspondence existed, and so as not to lose information on product types we added new categories. The appendix gives full details on products and countries.

The data have two major flaws. First, before 1897, with the exception of the period from 1885 to 1889, authorities did not distinguish between the import good’s country of origin and country of shipping. Still we can derive useful information on product variety for this early period, and we can infer origin countries prior to 1897 since the ratio between shipping and origin country after this date was stable. Second, with the adoption of the 1906 tariff, the Spanish authorities added several new product categories and changed demarcations of older products. To address this problem, we have standardized classification across periods (pre and post 1906). All together, we have 90 potential import products and 40 potential trading partners. A complete listing of products and countries is

given in the appendix. The price data pose a different sort of problem. The custom officers recorded prices by products and not by countries. To estimate prices of exports by country, we use a weighted average of export values.

Figure 4 traces the evolution in exporting countries and products. There was a substantial increase in trading partners during the 1880s, from 11 to 23 countries, after which the number stabilized. By the date, Spain imported from a range of high and low income countries, which contemporaries interpreted as a sign that newly emerging and long established producers competed in the same market. The evidence is mixed on this score, however. Table 2 gives the relative share of foreign goods in the Spanish market. The U.K. was the leading exporter until 1908, when it was replaced by Germany. The rise of France's and Switzerland's share was dramatic. Big and rich countries exported higher volumes of each good, but not necessarily in proportion to their size. The U.K., Germany, France, and Switzerland shipped the most popular items, cotton yarn (categories 1-6 in the appendix) and cotton woven fabrics, printed and plain (categories 7-14).⁴

The number of products rose from 20 to 45 between 1880 and 1890, peaking in 1906. With the adoption of the 1906 tariff, the number declined from 50 to 30 in 1912. Big countries in Table 3 sold a greater number varieties, although, again, not always in proportion to their size. France exported the largest number of products. The number of categories exported by the U.K. and Italy declined; while those of Belgium and the Netherlands rose. We examine these changes as part of our discussion of the extensive margin below.

The relation between variety and level of development evolved over the period, giving credence to the view that emerging countries were in the process of accumulating the physical and human capital necessary to compete against established industries. Following Schott (2004), we divide exporting countries into low, middle, and high-income countries in Figure 5. Big and rich countries exported more types of goods, an outcome associated with the substantial fixed costs of doing business abroad. The implication, as discussed below, is that large countries could more easily adapt than smaller competitors to changes in Spanish commercial policy. Around 60 percent of all possible products ($N = 90$)

⁴ From 1905 on, imports of cotton gauze, tulle and laces were considerable (categories 39, 61, 69). France, Germany, and Switzerland were major exporters of these items.

were exported exclusively by high-income countries; about 25 percent of all products were exported by low, middle, and high-income countries; middle and high-income countries exported the remainder. Still, by the end of the period, there was greater overlap and less specialization in exports. Low, middle, and high-income countries exported 35 percent of products. Along the lines of Saxonhouse and Wright (2004, 2010), countries with different factor endowments were increasingly competing head on.

Not only did big countries sell a larger number of each item and a greater variety of products, they shipped goods of higher quality. This implied a degree specialization across narrow categories of goods. Figure 6 depicts that, corresponding to their skill and wage levels, Germany and France exported more expensive goods. These findings corroborate the picture of the world industry in Figure 3. Spinning fine counts on mules, the industries of France and Germany exhibited relatively high levels of productivity. Country product specialisation was not static. Belgium, which began as an exporter of cheap goods had by the eve of the world war began shipping items of better quality, the improvement in prices of about 30 percent resulting from the accumulation of skills in the industry (Huberman 2012). The contrast with Figure 7 is telling. Italy, Portugal, and the U.S. sold low quality goods whose value was about the same at the beginning and the end of the period. The outlier is the U.K. which despite its early start, or perhaps because of it, specialized in medium to low-value goods. New trade theory appears to fit the British case. Spinning on mules, Lancashire's success in shipping cheap and medium quality goods worldwide, and increasingly to India, was based on external economies of scale related to the benefits of agglomeration and to the high degree of skill of its labour force (Broadberry and Marrison 2002).

The margins of trade

In order to identify the advantages of size and income, and the general rise in quality of goods in line with the comparative advantage and other characteristics of exporters, we decompose the value of imports into intensive and extensive margins. We calculate margins across space and time.

The cross-sectional estimates in Table 4 for 1900 and 1910 follow Hummels and Klenow (2005).⁵ To start, define country j = exporter; k = all other exporters or the reference country; m = Spain; I is total available product categories; and I_{jm} the set of observable categories in which country j has positive exports to m . The ratio of country j to country k exports to m , or the share of country j exports to total exports to m , equals the product of the extensive and intensive margins.

The *extensive margin* gives us an idea of the relative importance of each exporter's good set. More precisely, it is the ratio of country k exports to country m in I_{jm} (or the set of observable categories of which country j has positive exports to m), relative to country k 's exports to m in I categories (or all available categories). In our case, the total number of available categories in 1910 is 48. The extensive margin is the weighted count of j 's categories relative to country k 's categories. The idea is that if all categories are of equal importance, the extensive margin is the fraction of categories in which j exports to m (Spain). The importance of this country's good set is the share of categories exported by country j of the total available (for all the exporters):

$$EM_{jm} = \frac{\sum_{i \in I_{jm}} p_{kmi} \cdot x_{kmi}}{\sum_{i \in I} p_{kmi} \cdot x_{kmi}}$$

The *intensive margin* compares the nominal trade values of j and k , defined as the ratio of j 's nominal exports relative to k 's exports in the categories in which j exports to country m (I_{jm}):

$$IM_{jm} = \frac{\sum_{i \in I_{jm}} p_{jmi} \cdot x_{jmi}}{\sum_{i \in I_{jm}} p_{kmi} \cdot x_{kmi}}$$

The share of country j exports to k , or total exports to m , is the product of both margins:

$$EM_{jm} \cdot IM_{jm} = \frac{\sum_{i=1}^I p_{jmi} \cdot x_{kmi}}{\sum_{i=1}^I p_{kmi} \cdot x_{kmi}}$$

Consider the following example. Before the war, Germany's overall share of trade with Spain is 2.11 as large as Switzerland's (36 vs 17 percent). As befitting its size, some

⁵ We have calculated margins on a five year basis from 1885. The results are similar to those reported in Table 4.

of this difference originates with the greater number of categories Germany exported. In 1910, Germany shipped $37/48 = 77$ percent of all categories, and Switzerland $26/48 = 54$ percent. If all categories were of equal weight, the extensive margin of Germany would be 1.42 times greater, resulting in an intensive margin (exports per product) for Germany 1.48 ($= 2,11/1.42$) times larger than Switzerland. But not all categories are of equal weight, Switzerland shipped in categories that comprised a larger share of all countries' exports to Spain. After adjustment, Germany's extensive margin is therefore only 1.05 greater than Switzerland's, and its intensive margin 2.05 times larger as a result.

Interestingly, the results in Table 4 are of the same order of magnitude as Hummels and Klenow (2005) calculated for 1995. For the entire sample of countries, the contribution of the extensive margin was about five times greater than the intensive margin. Big and rich countries had a relatively larger extensive margin than producers in the European periphery, in the order of between 2 and 3 to 1, a finding consistent with the claim that the fixed costs of trade were a barrier to emerging countries. The intensive margins of core producers are considerably larger as well. We would expect to find an important role for this margin because long-established producers like Germany had developed a high degree of related-party trade with Spanish customers. Newly emerging countries did not have this luxury, a point that emerges below in our discussion of the changes in margins over time.

How did the nature of trade change over time, and, specifically, did established producers exhibit more resilience in the face of trade shocks than new exporters? We follow Bernard et al. (2009) in calculating the extensive margin as the change in trade due to the net entry of countries and the net addition in products for countries continuing in trade, and the net intensive margin as the increase in trade due to the contribution of previously established countries and products,

Define Δx_t as the change in Spanish trade between period $t-1$ and t . We decompose the change into the increase due to the entry of new trading countries, the exit of existing trading countries, and the change due to the increase or decrease in trade of continuing countries:

$$\Delta x_t = \sum_{c \in N} x_{ct} - \sum_{c \in E} x_{ct-1} + \sum_{c \in C} \Delta x_{ct}$$

Where c refers to countries, N is the set of new countries entering to trade, E is the set of countries exiting trade, and C is the set of countries continuing to trade. The change in trade of continuing countries is further decomposed into changes due to adding and dropping of products, and the growth and decline of continuing country and products:

$$\Delta x_{ct} = \sum_{j \in A_c} x_{cjt} - \sum_{j \in D_c} x_{cjt-1} + \sum_{j \in G_c} \Delta x_{cjt} + \sum_{j \in F_c} \Delta X_{ct}$$

Where j refers to products, A_c is the set of products added by continuing country c , D_c is the set of products having been dropped by continuing country c , and G_c is the set of continuing country-products with growing trade and F_c with falling trade.

In Table 5, lines 12 and 13 report the two extensive margins, the net entry of countries and the net entry of products by continuing countries in trade; line 14 gives the intensive margin, the net increase in trade by continuing countries and products in trade. The intensive margin dominates in the short-run, the average for the three sub-periods in the Table being in the order of 100 percent. The corresponding average contribution for new countries is about 8 percent, much of it occurring in the first sub-period. A prominent feature of short-run fluctuations is the difference between gross vs net entry of products (lines 4 and 5), exactly what we expect to find in a model of heterogeneous firms. New countries often shipped untested goods, some of them finding markets, others disappearing. Once related-party trade was established, product-country changes became paramount. In contrast, over the long period 1885-1913 (the last column in Table 5), the relative importance of the extensive margin was considerable. There was a lot of shuffling in products per country. Again our findings approximate those for the most recent wave of globalization in which the extensive margin figures strongly over the long haul (Haddad, Harrison, and Hausman 2010; Schott 2009).

The decomposition in Table 5 extends our previous discussion on the responses of countries to changes in commercial policy. The 1891 general tariff resulted in across the broad contraction in demand for items traded, the intensive margin. The selective 1906 tariff which aimed to curtail imports of more expensive items had ramifications for the extensive margin. To be sure, producers in rich and poor countries alike suffered from a considerable decline in demand (product-country decreases). But at the same time, certain

countries retained established markets, probably in continuing high-quality items (product-country increases). The extensive margin was robust. Because of their comparative advantage, large countries fared better than smaller ones. There was some country exit, presumably of small and poor countries, but there was also the shipping by established countries of new products, presumably of high-end items, exactly the type of goods large and rich countries in the European core specialized in.

Implications

The evidence we have collected on endowment-driven specialization in the world textile industry is mixed. Across broad categories of goods, countries with different endowments competed head on. Within narrow categories, countries shipped goods that embodied the skill levels of their workforces. Imports, which from 1900 on showed modest gains, reflected increased specialization in line with factor endowments. Contrary to new trade theory, goods of high-productivity countries were not sold at prices lower than of low-productivity countries. Unit values increased with levels of development, rich countries exporting goods of higher quality than their poorer rivals.

That said, more detailed price and product information within narrow groups of countries may well overturn these results. But if this is the case, trade models with heterogeneous firms, as Schott (2004) concludes, may prove to be a more fruitful conceptual framework. Our decomposition of imports into internal and external margins is a first step in this direction. Along the lines of this model, we have found that the fixed costs of trade in cotton textiles were substantial. As trade costs fell, producers in emerging countries began to export goods. But firms in big and rich countries were more productive, shipping the most popular products, a wider variety of products, and more expensive items. While all countries saw a contraction in demand (the intensive margin) as Spain adopted higher tariffs, established producers responded by shipping new products of higher quality. There was considerable degree of entry and exit of products, but the overall change in the extensive margin was greater for rich countries, poor countries restricting exports to a narrow range of low-value items. New, ongoing research of the margins of trade for other countries may give different results.⁶ Still, the vexing question remains why our findings

⁶ David Jacks, Chris Meissner and others are engaged in a project along these lines.

approximate those reported for the recent wave of globalization. Perhaps this is only further proof of the importance of studying the present through the lens of the past.

Appendix

List of products and SITC classification

Num.	SITC Classification
1	65122 Cotton sewing thread, packaged for retail sale
2	65133 Cotton yarn (other than sewing thread) not under 85% cotton by weight, not packaged for retail sale
3	65133 Cotton yarn (other than sewing thread) not under 85% cotton by weight, not packaged for retail sale
4	65133 Cotton yarn (other than sewing thread) not under 85% cotton by weight, not packaged for retail sale
5	65133 Cotton yarn (other than sewing thread) not under 85% cotton by weight, not packaged for retail sale
6	65133 Cotton yarn (other than sewing thread) not under 85% cotton by weight, not packaged for retail sale
7	65221, 65231, 65232, 65233 Cotton woven fabrics, unbleached, bleached, dyed, of yarns of different colours, not under 85% cotton, weighing not over 200 g/m ²
8	65221, 65231, 65232, 65233 ... embroidered
9	65221, 65231, 65232, 65233 ... clothing or finished
10	65221, 65231, 65232, 65233 ... embroidered and clothing
11	65221, 65231, 65232, 65233 ... embroidered with mixture of metal
12	65221, 65231, 65232, 65233 ... embroidered in chain stitched
13	65221, 65231, 65232, 65233 ... embroidered in relief
14	65221, 65231, 65232, 65233 ... embroidered and clothing with mixture of metal
15	65222, 65241, 65242, 65244 Cotton woven fabrics, unbleached, bleached, dyed, of yarns of different colours, not under 85% cotton, weighing over 200 g/m ²
16	65222, 65241, 65242, 65244 ... embroidered
17	65222, 65241, 65242, 65244 ... clothing or finished
18	65222, 65241, 65242, 65244 ... embroidered and clothing
19	65222, 65241, 65242, 65244 ... embroidered with mixture of metal
20	65222, 65241, 65242, 65244 ... embroidered in chain stitched
21	65222, 65241, 65242, 65244 ... embroidered in relief
22	65222, 65241, 65242, 65244 ... embroidered with mixture of metal and clothing
23	65234 Cotton woven fabrics printed, not under 85% (weight cotton) weighing not over 200 g./m ²
24	65234 ... embroidered
25	65234 ... embroidered with mixture of metal
26	65234 ... embroidered in relief
27	65234 ... embroidered in chain stitched
28	65234 ... clothing or finished
29	65234 ... embroidered and clothing
30	65234 ... embroidered and clothing with mixture of metal
31	65245 Cotton woven fabrics printed, not under 85% (weight cotton) weighing over 200 g./m ²
32	65245 ... embroidered
33	65245 ... embroidered in relief
34	65245 ... embroidered in chain stitched
35	65245 ... embroidered with mixture of metal
36	65245 ... clothing or finished
37	65245 ... embroidered and clothing
38	65245 ... embroidered and clothing with mixture of metal
39	65211 Cotton gauze (we include woven diaphanous, muselines, gauze)
40	65211 ... embroidered
41	65211 ... embroidered with mixture of metal
42	65211 ... embroidered in relief
43	65211 ... embroidered in chain stitched

44	65211	... clothing or finished
45	65211	... embroidered and clothing or finishing
46	65211	...embroidered and clothing with mixture of metal
47	65497	Woven tufted textile fabrics (other than narrow or special fabrics)
48	65497	... embroidered
49	65497	... embroidered with mixture of metal
50	65497	... clothing or finished
51	65497	... embroidered and clothing
52	65497	... embroidered and clothing with mixture of metal
53	65214, 65215	Cotton pile and chenille woven fabric
54	65214, 65215	...embroidered
55	65214, 65215	...embroidered with mixture of metal
56	65214, 65215	...embroidered in relief
57	65214, 65215	...embroidered in chain stitched
58	65214, 65215	...clothing or finished
59	65214, 65215	... embroidered and clothing
60	65214, 65215	...embroidered with mixture of metal and clothing
61	65641	Tulles and other net fabrics (not including woven, knitted or crocheted fabrics)
62	65641	...embroidered with mixture of metal
63	65641	...embroidered
64	65641	...embroidered in relief
65	65641	...embroidered in chain stitched
66	65641	...clothing or finishing
67	65641	...embroidered and clothing
68	65641	...embroidered with mixture of metal and clothing
69	65642, 65643	Lace (mechanically made and hand-made)
70	65642, 65643	...embroidered
71	65642, 65643	... embroidered with mixture of metal
72	65642, 65643	... clothing or finished
73	65642, 65643	... embroidered and clothing
74	65511, 65512, 65519, 65529	Knitted or crocheted
75	65511, 65512, 65519, 65529	...embroidered
76	65511, 65512, 65519, 65529	Socks, gloves embroidered with mixture of metal
77	65511, 65512, 65519, 65529	... clothing or finished
78	65511, 65512, 65519, 65529	... clothing or finished
79	65511, 65512, 65519, 65529	In pieces, T-shirts, pants
80	65511, 65512, 65519, 65529	... In pieces, T-shirts, pants embroidered
81	65511, 65512, 65519, 65529	...In pieces, T-shirts, pants embroidered with mixture of metal
82	65511, 65512, 65519, 65529	...In pieces, T-shirts, pants, clothing
83	65511, 65512, 65519, 65529	... In pieces, T-shirts, pants, clothing with mixture of metal
84	65511, 65512, 65519, 65529	...In pieces, T-shirts, pants, clothing and embroidered
85	65511, 65512, 65519, 65529	Socks, gloves
86	65511, 65512, 65519, 65529	...Socks, gloves embroidered
87	65511, 65512, 65519, 65529	... Socks, gloves embroidered with mixture of metal
88	65511, 65512, 65519, 65529	... Socks, gloves finished
89	65511, 65512, 65519, 65529	... Socks, gloves finished embroidered
90	65511, 65512, 65519, 65529	... Socks, gloves embroidered and finished with mixture of metal

List of products following the classification of Spanish Trade Statistics before 1906

<u>Num.</u>	<u>Spanish Trade Statistics</u>
1	Hilados de algodón para coser, bordar
2	Algodón hilado, blanco, teñido a uno o dos cabos hasta el número<35
3	Algodón hilado, blanco, teñido a uno o dos cabos desde el número>36
4	Algodón hilado, blanco, teñido a tres cabos hasta el número<35
5	Algodón hilado, blanco, teñido a tres cabos más del número>36
6	Algodón torcido a tres o más cabos
7	Tejidos algodón tupido hasta hilo núm. <25
8	Tejidos algodón tupido bordado hasta hilo núm. <25
9	Tejidos algodón tupido confeccionado hasta hilo núm.<25
10	Tejidos algodón tupido bordado, confeccionado hasta hilo núm. <25
11	...bordados con mezcla de metal
12	...bordados a cadeneta
13	...bordados a realce
14	...bordados con mezcla de metal y confeccionados con mezcla de metal
15	Tejidos algodón tupidos hilo núm.>26
16	Tejidos algodón tupidos bordado hilo núm.>26
17	Tejidos algodón tupidos confeccionado hilo>26
18	Tejidos algodón tupidos confeccionado bordado hilo núm.>26
19bordados con mezcla de metal
20bordados a cadeneta
21bordados a realce
22bordados con mezcla de metal y confeccionados
23	Tejidos algodón estampado, labrados al telar hilo núm.<25
24	Tejidos algodón estampado, labrados al telar bordado hilo núm.<25
25	...bordados con mezcla de metal
26	...bordados a realce
27	...bordados a cadeneta
28	Tejidos algodón estampado, labrados al telar confeccionado hilo núm. <25
29	Tejidos algodón estampado, labrados al telar, confeccionado, bordado hilo núm.<25
30	...bordados con mezcla de metal y confeccionados
31	Tejidos algodón, estampado, labrados al telar hilo núm.>26
32	Tejidos algodón estampado, labrados al telar bordado hilo núm.>26
33	...bordados a realce
34	...cadeneta
35	...bordados y con mezcla de metal
36	...confeccionados
37	Tejidos algodón estampado, labrados al telar confeccionado, bordado hilo núm.>26
38	...con mezcla de metal
39	Tejidos algodón, diáfano, muselinas, gasas
40	Tejidos algodón, diáfano, bordado
41	...bordados con mezcla de metal
42	...bordados a realce
43	...bordados a cadeneta
44	Tejidos algodón, diáfano, confeccionado
45	...bordados y confeccionados
46	...bordados con mezcla de metal y confeccionado
47	Tejidos algodón, acolchados y piqués
48	Tejidos algodón, acolchados y piqués bordado
49	...bordados con mezcla de metal
50	Tejidos algodón, acolchados, confeccionado
51	Tejidos algodón, acolchados, bordado, confeccionado
52	...bordados confeccionado, mezcla de metal
53	Tejidos Panas algodón, veludillos

54	Tejidos Panas algodón, veludillos, bordado
55	...con mezcla de metal
56	Tejidos Panas algodón, veludillos, bordado al realce
57	Tejidos Panas algodón, veludillos, bordado cadeneta
58	Tejidos Panas algodón, veludillos confeccionado
59	Tejidos Panas algodón, veludillos confeccionado bordado
60	...bordado con mezcla de metal y confeccionado
61	Tejidos Tules algodón
62	...bordados con mezcla de metal
63	...bordados
64	...bordados al realce
65	...bordados cadeneta
66	...confeccionados
67	...bordados y confeccionado
68	...bordados y confeccionado con mezcla de metal
69	Tejidos de puntillas algodón
70	Tejidos de puntillas algodón bordado
71	...bordados con mezcla de metal
72	...confeccionado
73	Tejidos de puntillas bordado confeccionado
74	Tejido de punto de crochet, a mano o a telar
75	...bordados
76	...bordados y con mezcla de metal
77	...confeccionados
78	...bordado confeccionado
79	Tejido de punto de media, en piezas, camisetas y pantalones
80	...bordados
81	...bordados mezcla de metal
82	...confeccionados
83	...confeccionados mezcla de metal
84	...bordado confeccionado
85	Tejido de punto de media, calcetines, guantes y demás objetos
86	Tejido de punto de media, calcetines, guantes y demás objetos, bordados
87	...bordados y con mezcla de metal
88	...confeccionados
89	...confeccionados bordados
90	...bordados, confeccionados y con mezcla de metal

Exporting Countries

1) Algeria	2) Andorra	3) Arabia,	4) Argentina	5) Austria-Hungary
6) Belgium	7) Bolivia	8) Brazil	9) Bulgaria	10) Chile
11) China	12) Colombia	13) Cuba	14) Denmark	15) Egypt
16) Fernando Póo	17) Finland	18) France	19) Germany	20) Guatemala
21) Italy	22) Japan	23) Mexico	24) Morocco	25) Netherlands
26) Norway	27) Panama	28) Paraguay	29) Peru	30) Philippines
31) Portugal	32) Puerto Rico	33) Russia	34) Sweden	35) Switzerland
36) Turkey	37) Uruguay	38) UK	39) USA	40) Venezuela

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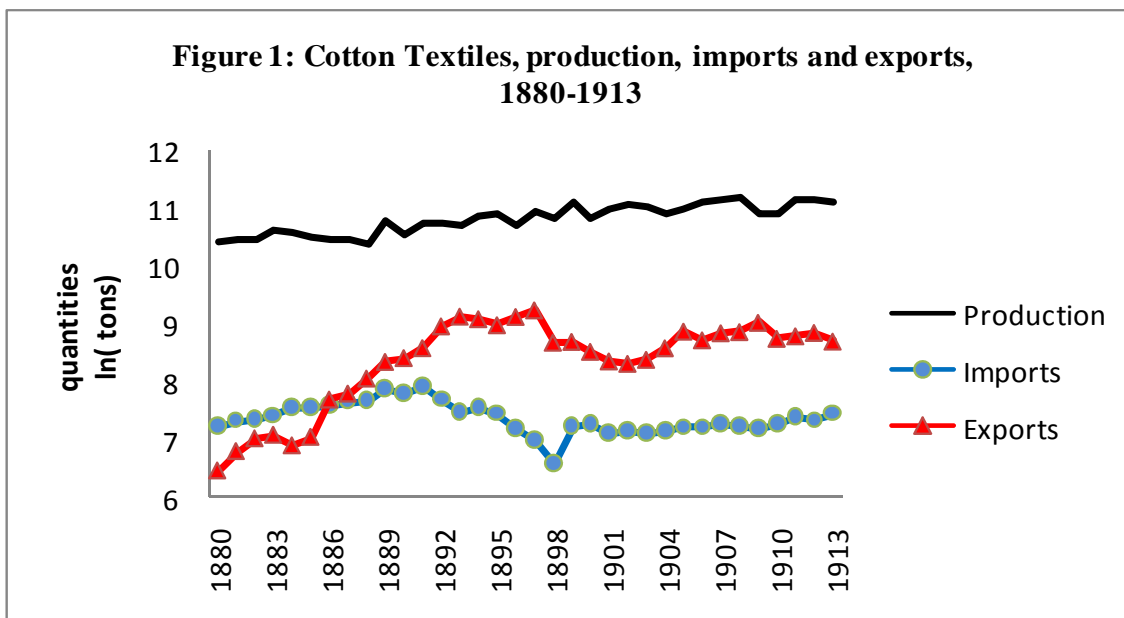
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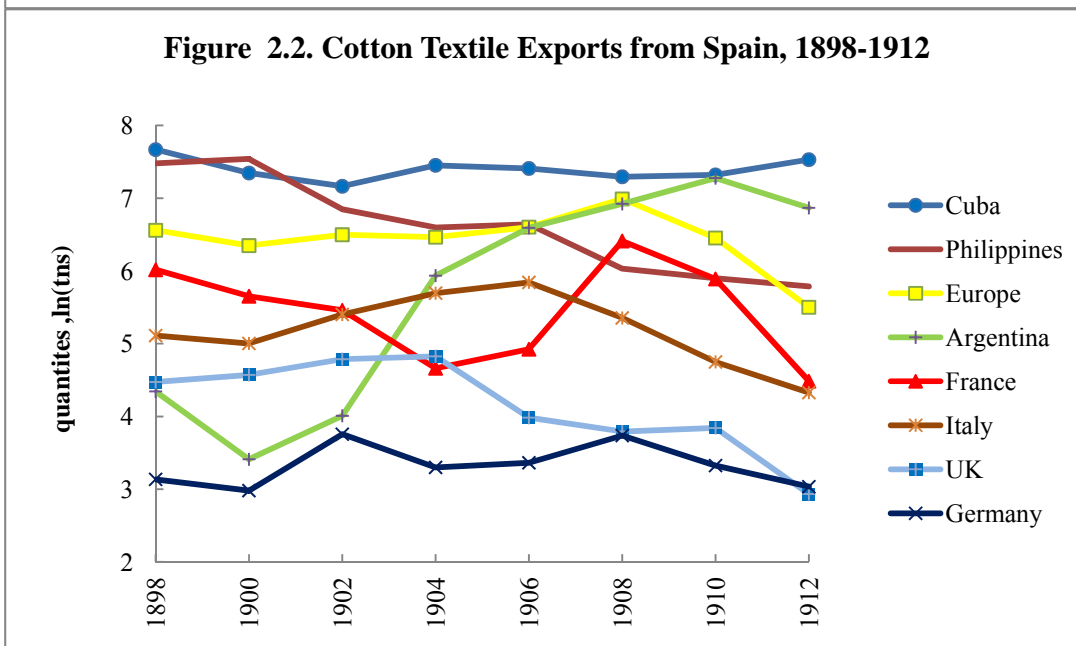
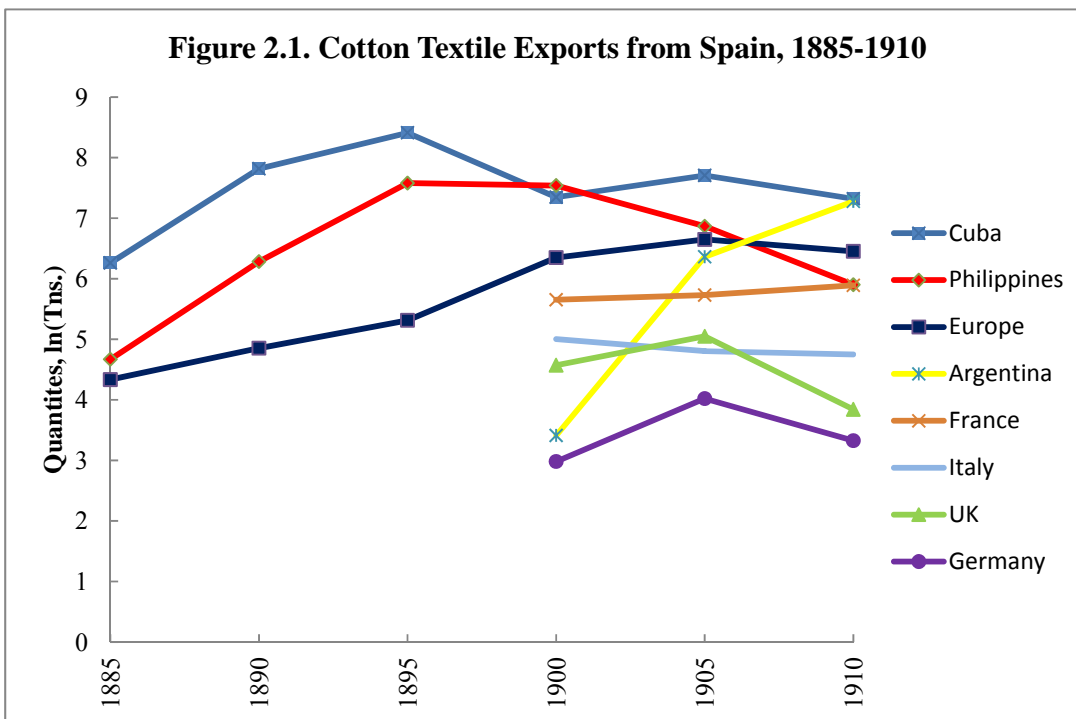


Sources: Sudrià (1983) and *Estadísticas de Comercio Exterior de España*.

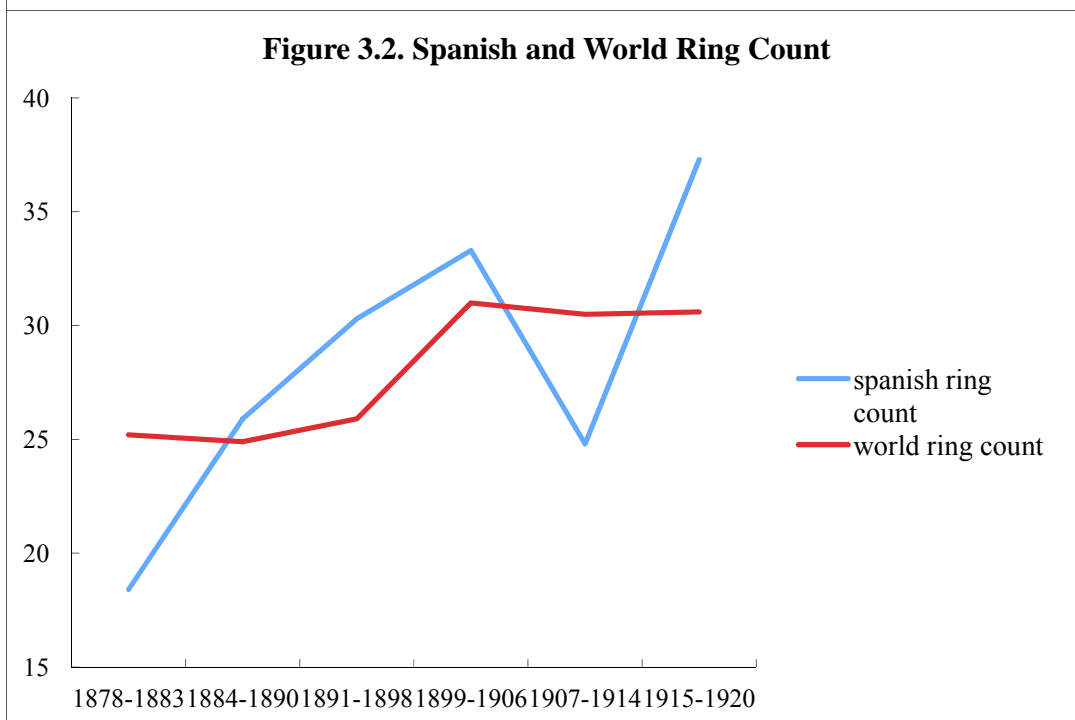
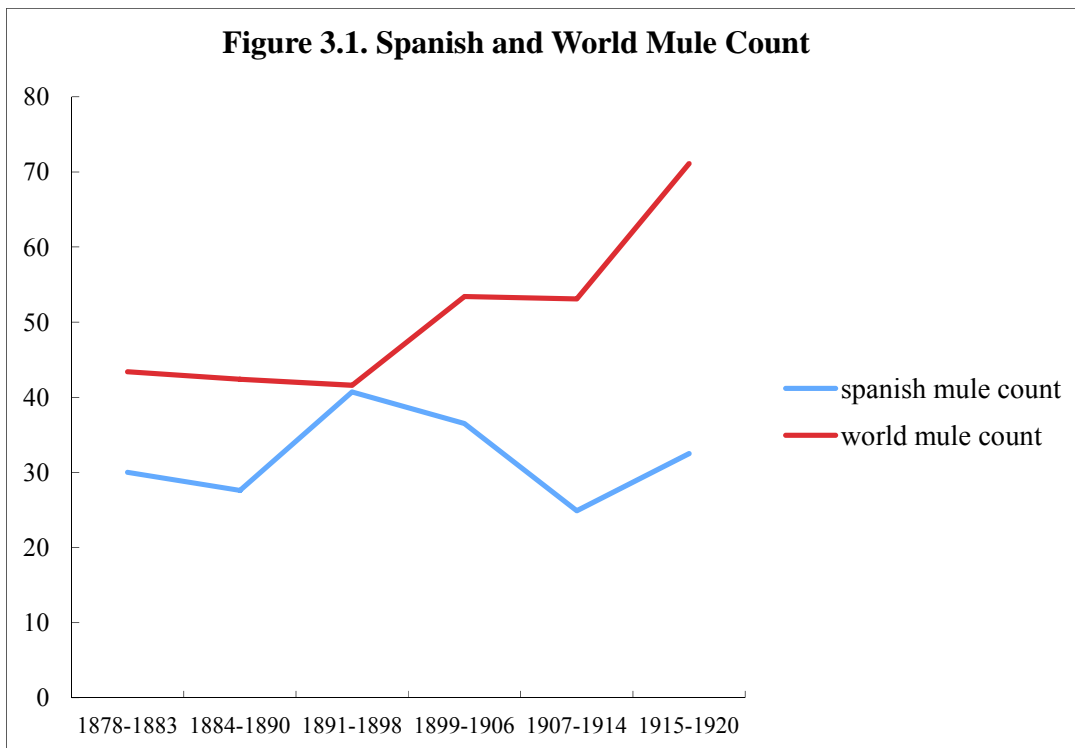
Table 1: Cotton Textiles Exports from Spain, 1885-1910

			DYED AND WHITE PRINTED GOODS	KNIT GOODS	OTHERS	TOTAL
	YARN	GOODS	GOODS	GOODS		
1885	Quantities (tns.)	45	499	379	271	1193
	Values (pts.)	89	2495	2654	1624	6862
	Quantities %	4	42	32	23	100
	Values %	1	36	39	24	100
1890	Quantities (tns.)	87	2587	1152	759	4585
	Values (pts.)	174	11643	7773	4557	24146
	Quantities %	2	56	25	17	100
	Values %	1	48	32	19	100
1895	Quantities (tns.)	539	4943	2199	821	8502
	Values (pts.)	3233	22242	15395	5748	46617
	Quantities %	6	58	26	10	100
	Values %	7	48	33	12	100
1900	Quantities (tns.)	596	1187	2515	1315	5613
	Values (pts.)	3579	5936	17604	10517	37636
	Quantities %	11	21	45	23	100
	Values %	10	16	47	28	100
1905	Quantities (tns.)	229	467	4809	1835	7340
	Values (pts.)	1603	2334	33665	14676	52278
	Quantities %	3	6	66	25	100
	Values %	3	4	64	28	100
1910	Quantities (tns.)	491	451	4685	1104	6783
	Values (pts.)	2455	2254	32794	13529	52038
	Quantities %	7	7	69	16	100
	Values %	5	4	63	26	100

Source: *Estadísticas de Comercio Exterior de España*, several years.



Source: Sudrià (1983)



Source: Saxonhouse and Wright (2004).

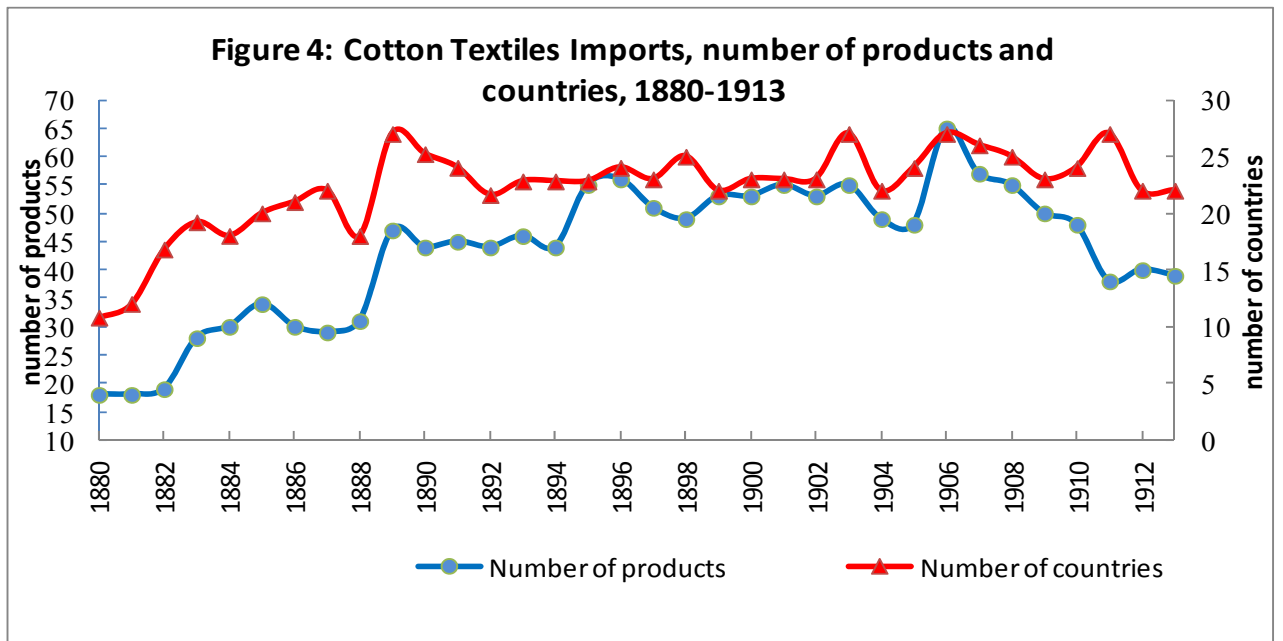


Table 2. Cotton Textiles Imports to Spain by origin country, 1897-1913

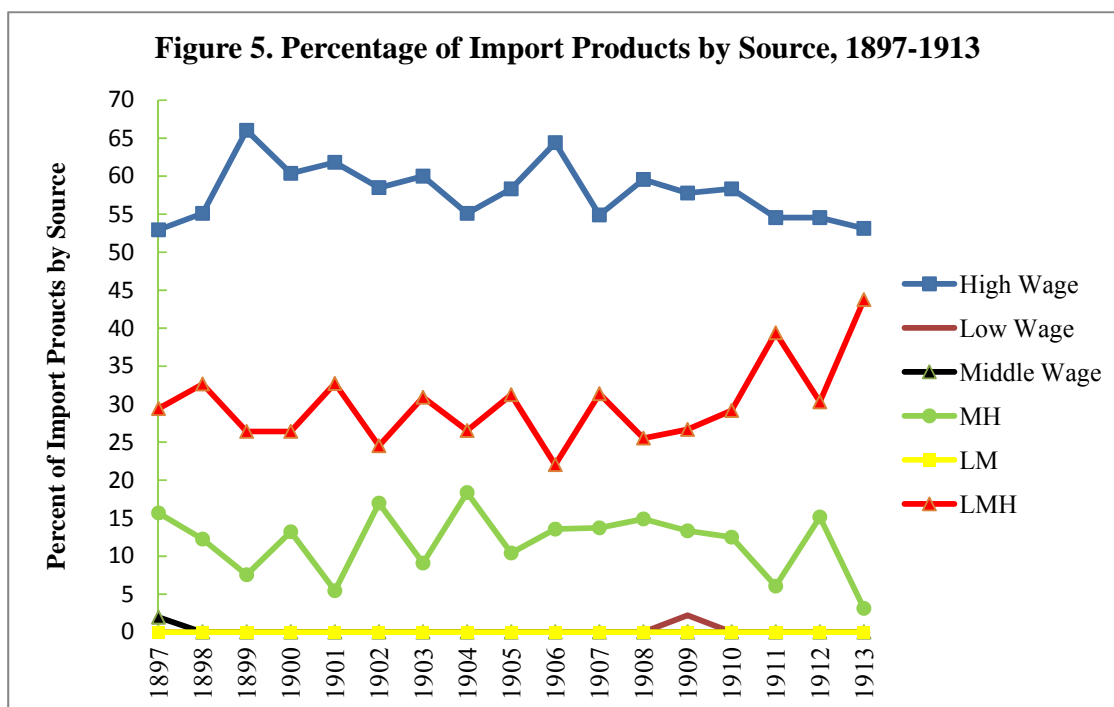
Countries:	1898	1900	1902	1904	1906	1908	1910	1912
U.K.	100	123.99	123.48	121.85	129.60	105.38	96.60	94.26
France	24.39	33.45	32.47	41.21	54.98	55.42	53.74	60.98
Germany	14.79	24.91	30.02	35.16	67.70	101.47	110.13	103.73
Switzerland	14.34	20.15	16.44	17.34	29.36	52.84	56.59	55.61
Austria-Hungary	1.53	1.74	0.96	0.80	1.11	3.21	3.61	3.60
Belgium	0.46	0.65	0.55	0.39	0.50	1.01	1.06	1.24
Italy	0.33	0.47	0.43	0.33	0.34	0.27	0.22	0.15
U.S.A	0.13	0.12	0.11	0.05	0.07	0.27	0.59	0.35
Portugal	0.06	0.05	0.06	0.05	0.07	0.19	0.28	0.42
Netherlands	0.01	0.02	0.10	0.07	0.15	0.36	0.40	0.87

Note: Moving average 3 years centered related to UK average for 1897-1899=100.

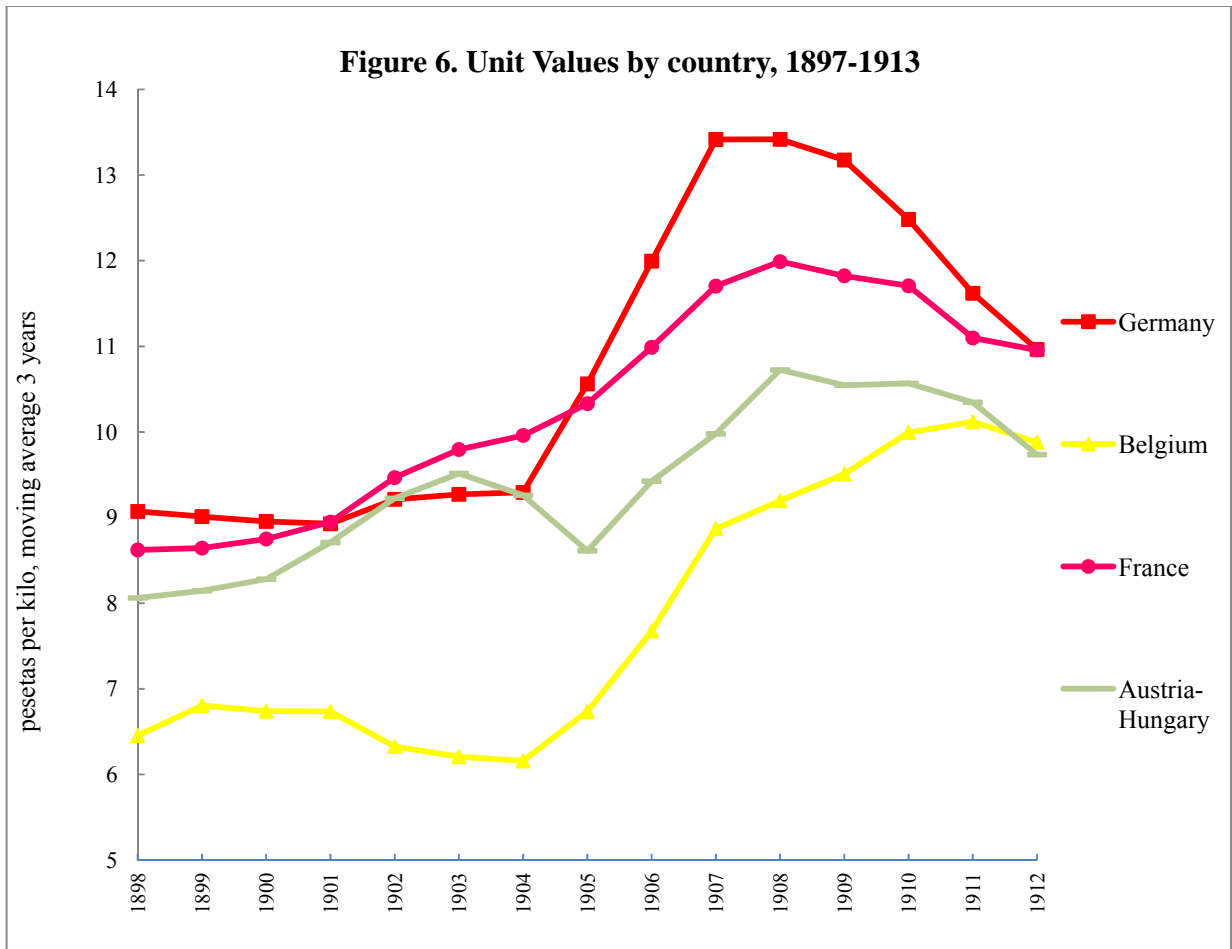
Table 3: Number of categories or products by country, 1897-1898

Country	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
All	51	49	53	53	55	53	55	49	48	65	57	55	50	48	38	40	39
1 Algeria	3	4	7	4	3	4	6	3	3	4	4	4	5	5	8	4	5
2 Andorra	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
3 Arabia	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4 Argentina	7	5	5	3	5	2	4	4	6	6	7	8	4	12	11	12	10
5 Austria-Hungary	16	10	10	15	12	11	17	14	12	13	13	16	14	15	14	15	15
6 Belgium	13	15	13	11	12	12	13	13	7	14	13	18	14	18	14	16	19
7 Bolivia	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
8 Brazil	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0
9 Bulgaria	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
10 Chile	4	0	0	1	2	0	1	3	0	1	1	2	3	4	4	5	2
11 China	2	1	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0
12 Colombia	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 Cuba	8	1	2	6	7	4	5	4	7	9	4	4	4	5	5	6	5
14 Denmark	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 Egypt	0	0	1	0	3	0	0	0	0	0	0	0	0	0	1	0	0
16 Fernando Póo	0	1	0	1	1	0	0	0	5	4	3	2	5	2	1	0	1
17 Finland	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18 France	49	46	52	51	52	52	51	47	47	64	53	47	46	46	34	37	36
19 Germany	36	34	41	45	47	46	46	37	36	51	46	40	42	37	31	35	33
20 Guatemala	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0
21 Italy	14	11	13	10	12	11	13	12	13	13	14	8	6	6	5	6	6
22 Japan	2	0	5	2	4	3	2	1	0	1	2	3	4	2	2	2	1
23 Mexico	0	0	0	1	0	3	1	5	5	3	2	1	0	7	2	2	0
24 Morocco	2	1	3	0	2	1	2	0	1	2	3	1	1	1	7	4	6
25 Netherlands	1	1	3	1	4	2	7	1	2	5	6	9	3	6	7	8	6
26 Norway	0	0	0	0	0	0	0	0	0	0	3	1	0	1	1	1	0

27	Panama	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
28	Paraguay	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
29	Peru	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
30	Philippines	3	4	4	2	0	1	1	0	1	3	2	0	0	0	1	0
31	Portugal	13	14	11	10	15	10	13	9	11	13	15	11	12	11	8	5
32	Puerto Rico	0	1	3	0	0	6	3	2	1	1	4	0	0	3	4	0
33	Russia	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
34	Sweden	0	1	0	1	0	0	0	0	0	0	0	1	1	1	1	3
35	Switzerland	39	28	34	33	34	34	36	27	30	29	24	29	22	26	23	21
36	Turkey	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
37	Uruguay	3	2	0	0	0	0	1	1	2	0	2	2	2	0	6	1
38	UK	34	34	38	35	37	34	38	34	32	38	33	35	34	29	26	30
39	USA	7	4	3	3	8	6	6	4	7	10	5	5	8	9	12	13
40	Venezuela	0	0	0	0	2	0	0	0	0	2	0	0	0	0	2	0



Note: We classified countries, following Schott (2004), as low, middle, and high wage if GDP per capita was less than that of the 30th percentile, between the 30th and 70th, or greater than the 70th percentile of the world distribution of GDP per capita in 1913 (Maddison 2005). *High Wage*: Germany, Belgium, France, U.K., U.S., Switzerland, and Argentina; *Middle Wage*: Austria-Hungary, Chile, Cuba, Italy, Norway, Uruguay, and Sweden; *Low Wage*: all remaining countries. Products are classified, following Schott (2004), into six mutually exclusive groups based on GDP per capita: *L*, *M*, and *H* refer to products originating in low, middle, or high-wage countries; *LM* and *MH*, products from at least one country of each type; *LMH*, products originating in a least one low-wage country and one high-wage country concurrently.



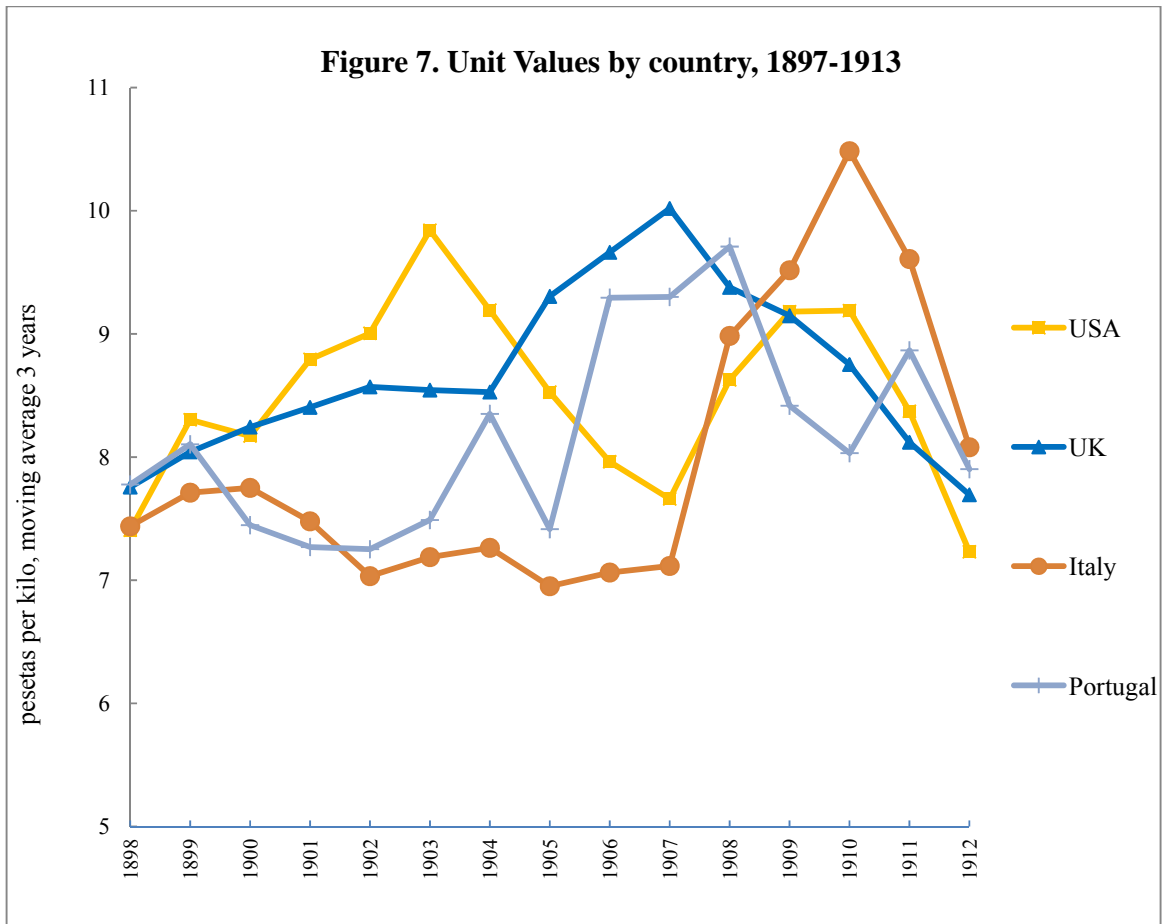


Table 4: Intensive and Extensive Margins of Imports by Country, 1900 and 1910

	1900			1910		
	Extensive Margin	Intensive Margin	Overall	Extensive Margin	Intensive Margin	Overall
Developed countries:						
UK	0.9962	0.5981	0.5959	0.9981	0.2996	0.2990
France	0.9999	0.1565	0.1565	0.9999	0.1594	0.1594
Germany	0.9995	0.1263	0.1262	0.9995	0.3574	0.3573
Switzerland	0.9895	0.1049	0.1038	0.9537	0.1741	0.1660
Belgium	0.6380	0.0078	0.0050	0.9401	0.0039	0.0036
USA	0.3051	0.0009	0.0003	0.6485	0.0018	0.0012
Average	0.8214	0.1658	0.1646	0.9233	0.1660	0.1644
Developing countries:						
Austria-Hungary	0.6662	0.0137	0.0091	0.9328	0.0125	0.0117
Italy	0.4594	0.0046	0.0021	0.5323	0.0011	0.0006
Portugal	0.4706	0.0004	0.0002	0.7296	0.0007	0.0005
Argentina	0.1138	0.00003	0.000003	0.3223	0.0001	0.00004
Cuba	0.1686	0.0001	0.00001	0.2579	0.0002	0.00004
Algeria	0.2245	0.0001	0.00003	0.6476	0.0002	0.0001
Average	0.3505	0.0031	0.0019	0.5704	0.0025	0.0022

Note: Overall is the share of country imports in total Spanish imports. Calculation based on Hummels and Klenow (2005).

Table 5: Intensive and Extensive Margins of Imports, 1885-1913

			1885-1889	1889-1905	1905-1913	1885-1913
1	Country	Country entry	198989.34	0.75	6.51	1415.88
2		Country exit	-13.19	-246.88	-22.38	-75.60
3		Net entry	198976.15	-246.13	-15.87	1340.28
4	Product-country	New product-country	366575.78	165669.03	301925.06	65783.32
5		Retired product-country	-600774.36	-94981.32	-230240.19	-21765.55
6		Net product-country	-234198.58	70687.71	71684.87	44017.77
7	Intensive Margin	Product-country increases	1250229.56	152836.29	1048748.78	347482.46
8		Product-country decreases	-414500.88	-518399.20	-583141.54	-293615.74
9		Net Intensive	835728.68	-365562.91	465607.24	53866.73
10	Total change in Imports		800506.25	-295121.32	537276.25	99224.78
11	Percentage of annual growth due to:					
12	%Net entry country		24.86	0.083	-0.003	1.35
13	%Net add product		-29.26	-23.95	13.34	44.36
14	%Net intensive margin		104.40	123.87	86.66	54.29

Note: Calculation based on Bernard et al (2009).

