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Disaggregated bilateral trade and trade policy: Spain's reciprocal trade agreements and the Great Depression, 1928-1935.

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Abstract: Using disaggregated trade data for the interwar period, specifically 1928 and 1931-1935, we analyze the changes in Spain's exports and imports at the product-country level by matching the categories of the original sources with those of the International Standard Classification of Foreign Trade (SITC). In 1928, Spain mainly exported agricultural goods and raw materials (around 60 and 13 percent of total exports, respectively) and mainly imported manufacturing goods and raw materials (45 and 31 percent of total imports, respectively). We calculate the margins of trade for imports and exports to determine the extent to which the Great Depression and trade policy contributed to the collapse in trade in the 1930s. Since Spain was not a member of either a formal or informal trading bloc, it was under pressure to negotiate bilateral trade agreements based on conditional most-favored nation clauses, whereby access to Spain's market was offered in exchange for Spanish agrarian exports, starting in late 1931. As a result, conditional MFN by product and country reduced fixed costs to trade and trade policy played a non-negligible role. The share of intra-industry trade was around 15-19 percent (at 3-digit SITC level) over the period: the Great Depression negatively affected it, whereas trade agreements had a positive effect from 1932 on. Moreover, Spain's comparative advantages in fruit increased, but declined in wine and olive oil.

Keywords: Disaggregated trade, Great Depression, Trade policy, Spain

JEL codes: F14, F13, N74, N14.

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1. Introduction

Trade statistics have historically been classified according to the volume of the flows of goods and the tariffs or duties established to regulate them. Although countries have long restricted trade and introduced levied tariffs, the change in trade regulations during the interwar period was especially critical, due to the repercussions from World War I (WWI) and especially the aftermath of the Great Depression. The costs of trade in this period included product relocation after WWI and import competition, with job and firm losses, during the 1929 financial crisis.

Following the implementation of the 1891 tariff law, Spain as a protectionist country, trade statistics followed a detailed product classification. With the subsequent introduction of the 1906 tariff law, trade statistics provided much more detail on manufactured products, adding new product categories and changing the demarcations of older products (Betrán and Huberman, 2016). A new tariff was established in 1922, and the corresponding trade structure was maintained until 1960.

Unfortunately for researchers interested in disaggregated trade data, these official trade statistics did not correspond to an economic classification that categorizes products by their different levels of value added, ranging from raw materials to manufactured inputs and final consumer goods. Additionally, in these official trade classifications, data for some goods were more disaggregated than others, depending on their value in terms of trade. Moreover, technological change also affected trade statistics, as new goods appeared that were subject to tariffs. Hence, to address the aforementioned issues regarding historical trade statistics, we use the Standard International Trade Classification (SITC) from the United Nations to classify goods according to a standardized economic classification. Moreover, this will allow us to compare trade statistics over time and across countries. Despite these benefits, the manual handling and classification of these data is a very time-consuming task.

The objective of this paper is to apply the SITC classification to Spanish historical sources of trade in the interwar period in order to conduct a granular analysis of bilateral trade. This standardized classification allows for comparisons over time and across countries. Specifically, disaggregating trade by product and by country enables us to analyze the patterns in bilateral trade during the Great Depression (between 1928-

1935). To that end, firstly, we describe the official trade statistics and how we have classified them according to SITC Revision 4. Secondly, we present the main patterns in imports and exports by product and by country and at product-country level. Thirdly, we define and calculate the margins of trade, intensive (for existing trade) and extensive (new goods and countries) margins, for imports and exports to determine the contribution of the Great Depression and trade policy to the collapse in trade in the 1930s. Fourthly, we calculate indices of intra-industry trade and revealed comparative advantage (RCA) and study changes in these measures over the analyzed period. Finally, we draw conclusions about the main patterns in trade and trade policy during the Great Depression.

The paper makes four key contributions. First, it demonstrates the importance of classifying trade using a standardized classification system that allows for comparisons of trade across economically meaningful categories (within raw materials, intermediate, final goods) over time and across countries. Second, it highlights the importance of disaggregate trade by product and country to disentangle the contribution of the changes in trade due to the impact of trade policy, given the greater importance of the extensive margin compared to broader categories of products that would indicate larger changes in the intensive margin. Third, it determines how new trade theories, by considering heterogeneous firms in terms of productivity - and by extension, countries - provide a theoretical basis for the effect of trade policy on the margins of trade (intensive and extensive margins). Fourth, it applies these theories to the analysis of the Great Depression, during which the use of 'beggar-thy-neighbor' trade policy also contributed to the downward spiral of trade. In the case of Spain, the composition of exports - concentrated in a limited category of goods - and geopolitical considerations, given that it did not belong to any trade bloc, created pressure to negotiate bilateral trade agreements in order to restore trade.

2. Trade Statistics and SITC: Constructing the dataset

Focusing on aggregate trade data, Tena-Junguito (2005) estimated a new series of Spanish trade data from *Las Estadísticas de Comercio Exterior de España* (Spanish Trade Statistics), presented in current, constant and gold pesetas from 1815 to 2001. Based on his estimations, Figure 1 displays export and import trends during the interwar period

(1922-1935). Tena-Junguito (2005) disaggregated trade but only for certain goods and base years.¹

If we want to examine trade at a disaggregated level of goods, we need to organize products according to an economic classification that remains homogenous over time. In the official trade statistics, the disaggregation level of trade data varied according to tariffs and the volume of goods traded. Consequently, it differed between exports and imports. Export data were less disaggregated than import data given that tariffs were not levied on the former and were concentrated in a smaller number of goods.

Spanish Trade Statistics give detailed information on products traded, countries of origin and shipping, and prices. However, no distinction was made between a product's country of origin and the shipping country until 1897. The price information represents another difficulty. Customs officers assigned identical prices to imports from all countries, based on an estimation of the value of goods by an official commission (*Junta Oficial de Valoraciones*). This method was liable to produce errors given that prices could correspond with prices from a year or two previously or could remain constant; moreover, they could also be affected by pressure from protectionist lobby groups incentivized to raise values to increase the customs tariffs.² Prados de la Escosura (1986) and Tena-Junguito (1985) estimated trade data for different periods (1850-1913 and from 1913 on, respectively) using market prices from foreign trade statistics to identify the bias introduced by the official statistics.³ This ceased to be a problem from 1931 on, when Spanish customs officers adopted the international convention of using declared values from traders. Other European countries faced similar issues. In Germany, imports were valued by a commission until 1928 (Hungerland and Wolf, 2022), and until 1921 in Italy (Federico et al., 2011) and France (Becuwe et al., 2018).

¹ Certain goods were disaggregated for certain years using the standardized classification SITC revision 2 (United Nations, 1985) from 1877 to 1926, and GATT (1986) from 1951, and applying a geographical distribution defined by the United Nations for exports and imports. Nonetheless, this exercise was carried out for only a small number of categories. Specifically, this disaggregation was done for 18 categories of goods for 13 years; of those 13 years, the only ones that lie within the interwar period are 1913 and 1926.

² Since this refers to specific tariffs, a higher unit value means that the equivalent ad-valorem tariff would be lower than the actual tariff.

³ Prados de la Escosura (1986) estimated that imports were overvalued during the period 1820-1913, but the divergence was smaller during the last years of the period (1909-1913). Tena-Junguito (1985) estimated an undervaluation of 17 percent for 1914-1935, but this figure decreased from 1925 on.

In Figures 2.1 and 2.2, we compare estimated and sample values for total imports and exports, respectively, using the estimated trade data from Tena-Junguito (2005) and the data from our disaggregated trade dataset for the interwar period, which corresponds to the official Spanish Trade Statistics. The pattern for imports and exports is similar during the interwar period. In the case of exports, the fall between 1928 and 1931 is much greater according to the official statistics, but estimated and sample data follow the same trend from 1933 on.⁴

In the Spanish Trade Statistics, product definitions are mostly equivalent to 4- and 5-digit levels of disaggregation, although some of them are at a 3-digit level. For this reason, we use 3-digit classifications to homogenize all product definitions. We used SITC Rev 4, which is the latest version. It can be used to handle current trade data and would allow products to be easily re-classified if a new version appears. Moreover, there are no significant differences between Rev 4 and Rev 2, also be used, for the interwar period, especially at the 3-digit level of disaggregation. The maximum number of goods at 3-digit level is 240 in Rev 2 and 263 in Rev 4. For our analyzed period, the maximum is 253 items (after excluding postal packages, special transactions, coins, gold and monetary gold), but no trade was registered for some of these items, mostly because they were new products stemming from recently developed technologies.

Trade refers to special trade⁵ since transit trade, which represented a very small proportion of Spanish trade, is excluded. For imports, as mentioned above, a systematic trade product classification is applied from 1922 to 1960.⁶ The total number of items in this period was 1540 with appendixes. If we include the appendixes, the maximum number of items was 1,720. For instance, for the years we have collected data for all countries, we have 1,564 listed products in 1922; 1,564 in 1925; 1,628 in 1928; 1,695 in 1931; 1,695 in 1933; and 1,711 in 1935. New items incorporated over the period correspond to new appendixes or extensions of the existing categories. Thus, there is no

⁴ From 1928 to 1935, exports declined by 66.2 percent according to Tena-Junguito (2005) and by 77.97 percent according to official trade statistics.

⁵ Also referred to as trade for consumption. The Spanish Trade Statistics also provide information on trade in goods imported and exported by the State's establishments, which were mainly tobacco (99.9 percent of total imported values of this type of trade and nearly zero in exports in 1928). We have not included tobacco in our trade dataset.

⁶ The exception is during the Civil War, 1936-1939.

problem with item classification.⁷ We display the original items and their original classification item number. We classify them according to both the SITC classification and the original item codes, allowing us to link each original item to its SITC equivalent at the 3-digit level.

For exports, before 1928, the official sources provide information at the product-country level for only 350 items. For the period after 1928, we have information on 1540 potential items, the same number as imports. As is to be expected, the actual number of products exported was considerably smaller. We use the same classification and presentation of item categories as we do for imports.

From 1922 to 1930, the official sources record unit values of exports and imports by product, irrespective of their destination or origin. Established by the *Sección de Valoraciones del Consejo* of the Ministry of Treasury, these assigned values are registered in the official statistics for the period 1922-1930. Beginning in 1931, Spain adopted the international practice of reporting declared values by import source and export destination. Import and export values are expressed in gold-pesetas for the period.⁸

On the import side, we calculate unit values by dividing import values by physical quantities. We normalize product volumes (generally recorded in physical units or quantities) in tons. For several products, volumes are given in numbers of units rather than by weight. We have converted these items into their equivalent weights based on information contained in the official statistics, which record tons and values (gold-pesetas) for similar categories of goods.

The official statistics give information on 93 import sources, corresponding to 81 trading countries. Using this information, we have assembled a detailed product-country dataset. On the import side, to be comparable to the years in which there were no different unit values by good-country, we use the average unit value for each product-country pair (total value of each product divided by total quantity for each good). For 1928, 1931, 1933 and 1935, we have collected information on quantities imported by

⁷ The only changes over the years relate to some sub-items in the same category that differ a little from the original one and are thus disaggregated. They are assigned the same category number plus one or more letters. Therefore, there is no increase or decrease in the products in different categories over the period.

⁸ To convert them into current pesetas and constant pesetas (1913), we used Tena-Junguito (2005)'s conversion factor and import and export price indexes.

country and we have used average unit values to calculate import values by country for all the countries in the sample. For imports in 1932 and 1934, we have gathered import values (which are declared values in this period) only for the top 10 import partner countries. On the export side, we have collected data only on values for all the countries in the years 1931 and 1933, and for the aforementioned top 10 import partner countries for 1928, 1932, 1934 and 1935⁹. As a result, we have not handled trade data on all countries for all the period; rather, we have data for all the items (maximum 1720) for at least 10 countries for imports and exports for 1928 and from 1931 to 1935.

In sum, we have constructed a dataset with digitalized trade data classified according to SITC Rev 4 for import and export values for 1928 and for all the years in the period 1931-1935 at product-country level for the top 10 import partner countries. We have classified them at 1- digit, 2- digit and 3-digit SITC levels¹⁰.

3. Main patterns of imports and exports: a granular look

In this section, we describe the main changes in trade between 1928—a year before the Great Depression and one in which high volumes of trade were registered—and the Great Depression years, from 1931 to 1935, before the Spanish Civil War in 1936.¹¹ We look first at goods at the highest level of aggregation. Figures 3.1 and 3.2 display import and export values, respectively, and their composition, using SITC Rev 4 at 1-digit level. They are real values as a result of converting gold pesetas into current pesetas and 1913 constant pesetas (Tena-Junguito, 2005) for 1928 and 1931-35.

Regarding imports, all goods at 1-digit level declined after 1928, especially basic manufactures and food and live animals. After the decline in trade due to the Great Depression, trade in intermediate goods such as chemicals, crude materials, and machinery and transport equipment increased. Consumer or final good imports, represented in Figure 3.1 by miscellaneous manufactures, rose steadily after 1931

⁹ The countries are Argentina, Belgium, France, Germany, Italy, the Netherlands, Sweden, Switzerland, the United Kingdom, and the United States, which together accounted for 83.2 percent of the value of exports in 1928 and 76.4 percent in 1935.

¹⁰ We have original item classifications for a maximum of 1720 items and 1-digit, 2-digit and 3-digit SITC levels for all the items. We have Excel files showing the correspondence between original items and SITC items, allowing us to match classifications. We have also included imports for 1922 and 1925 in the dataset.

¹¹ There are no official trade statistics from 1936 to 1940.

(Figure 3.1). Figure 4.1 shows the import shares, with food, crude materials and mineral fuels representing around 50 percent of total imports in 1928. Intermediate goods or manufacturing inputs accounted for around 45 percent, and consumer goods increased from 2 to 4 percent of total imports over the period.

In addition to the changing composition of imported goods, there was a shift in the sources of imports (Figure 5.1). After a drop in trade from 1928 to 1932, imports from Belgium, Germany, the United Kingdom, the Netherlands, Sweden and the United States grew, although only Belgium, Germany, Netherlands and Sweden registered an increase in values relative to 1928. Imports from Italy and Switzerland started to increase in 1934, whereas France and Argentina declined. In terms of these 10 countries' share of imports for each year (Figure 7.1), Germany registered an increased share of the Spanish market, as did Sweden (after 1932) and the United States (after 1934). The British and Italian share declined from 1928, before stabilized from 1932 on. The import share of France and Argentina shrank over the period.

As for exports, we observe the predominance of agricultural goods (Food and live animals in Figure 3.2). Exports of food (fruit and vegetables), beverages (wine) and vegetable oils (olive oil) declined during these years, but exports of chemicals rose. The share of agricultural exports increased from 32.5 to 46.7 percent, whereas that of basic manufactures dropped from 19.0 to 12.4 percent between 1928 and 1935, along with beverages (wine) and olive oil (Figure 4.2). By country (Figure 6.1), the fluctuations in exports were generally similar to those in imports: following the decline from 1928 to 1932, exports to Belgium, Germany, Sweden, Switzerland, and the United States grew; conversely, after an increase beginning in 1932, exports to the United Kingdom and Italy declined in 1935. Exports to France and Argentina also contracted. Regarding countries' share of exports for each year, the changes are again in line with the share of imports (Figure 7.2): France's share shrank; the shares of the United Kingdom and Italy declined and then stabilized; and the shares of the United States, Germany, Belgium, Sweden and Switzerland improved.

Focusing on more disaggregated data, we analyze imports and exports at 2- digit and 3-digit SITC levels. For imports, Figures 8.1 and 8.2 display the share of imports from the 1-digit to the 3-digit level for 1928 and 1935, revealing which particular products were most important. The share of crude materials increased from 1928 to 1935, and within

that category, cotton and wood accounted for the biggest share, followed by fertilizers (raw), and pulp and wastepaper. The share of mineral fuels also increased slightly (coal and petroleum), as did that of chemicals, encompassing manufactured fertilizers, inorganic chemicals (salts), and medicaments. There was also an increase in imports of machinery, such as motor vehicles for transport and electrical machinery, internal combustion engines and telecommunication equipment. The decreasing share in food corresponded to a decline in wheat imports, while imports of eggs and fish increased. There was a reduction in the share of basic manufactures': of that share, yarn and textile fabrics and rubber tires stood out in 1928; textile yarn and materials of rubber were the most significant in 1935.

However, these changes hide shifts in the relative importance of different countries. Figure 5.2 shows the changes in the extensive margins for imports, referring to the number of items imported by country. For instance, a large share of the imports of motor vehicles and parts moved from the United States and France to Germany, the United Kingdom, Italy and the Netherlands. These changes were in part driven by the effect of retaliatory tariffs imposed in response to tariffs that the United States and France applied in 1930. However, Spain also imported wheat and raw materials (cotton, petroleum, fertilizers) from the United States. In terms of imports from Germany, apart from the increasing share in motor vehicles, there was a decrease in the share of basic manufactures, consisting of textiles and metal manufactures. Over the analyzed period, the Netherlands exported relatively less textile yarn and food (cheese) to Spain but relatively more motor vehicle parts and accessories. Figure 5.3 shows the intensive margin over the period, calculated as the value of imports divided by the number of items traded. In general, the intensive margin fell after 1928, and then increased from 1932 on, although without reaching the previous peak. The exceptions were Argentina and Italy, where the decline in the intensive margin persisted after 1932.

Regarding exports, the main exports in 1928 were fruit, wine, olive oil, cork manufactures, lead manufactures, iron ore, fish and vegetables (Figure 9.1). In 1935, we see a larger share of fruit and vegetables, a reduction in wine and cork manufactures, and an increase in cotton fabrics (Figure 9.2). In the extensive margin for exports, the variations in the number of items traded are similar to the changes in imports (Figure 6.2). If we look at goods by country, Spain exported wine and fruit to the United States

in 1928; however, by 1935, the share of wine had decreased and the share of olive oil increased. To Germany, Spain sold fruit, wine, copper manufactures, and iron ore in 1928; the share of fruit had grown by 1935, while the share of wine had shrunk. For the French market, the important exports in 1928 were cork manufactures, wine, fruit and vegetables; by 1935, exports of olive oil had dropped while beverages (wine) increased. In the case of the United Kingdom in 1928, fruit, vegetables and rice were the main exports along with basic manufactures, such as lead, copper and cork manufactures, and iron ore. By 1935, the share of vegetables in food exports had increased, while the shares of fruit and rice had declined. Wine exports also increased, whereas basic manufactures decreased. Meanwhile, in the Italian market, fish was the main export in 1928, along with olive oil, and followed by lead manufactures. In the following years, the shares of olive oil and wine reduced. The Dutch market mainly centered around exports of iron ore and fruit, with an increasing share of crude materials (iron ore, copper, hides and skins) and chemicals and a decreasing share of wine between 1928 and 1935. Figure 6.3 displays the intensive margin, measured as export values per item,¹² over the period. As with imports, the intensive margin for exports declined from 1928; however, the increase after 1932 was much larger than that for imports. The exceptions were France and Argentina.

4. The collapse in trade and trade policy: decomposing the margins of trade

4.1. Margins of trade

To analyze the importance of the changes in goods traded by different countries, as described in the previous section, we decompose the margins of trade. We decompose import and export growth into the component goods and countries trading these goods. This allows us to determine the intensive margin - that is, change in existing trade flows, continuous goods and trading countries - and the extensive margin - that is, change in new goods and entry into new destinations or markets and trade flows in goods that disappeared or the exit from previous markets or former destinations. We consider

¹² Intensive margins for exports are higher than for imports because exports are concentrated in a smaller number of items; consequently, the denominator (the number of items) is a lower number.

greater level of detail regarding the type of goods and countries involved in trade, as we will explain.

First, we look at patterns of trade in goods continuously traded over the analyzed period (which we refer to as continuous goods), in goods newly traded (new goods), and in goods for which trade was discontinued over the period (old goods). Second, we display the countries with which Spain traded these goods; whether the continuous goods are traded with continuous countries (i.e. countries with which Spain traded previously); continuous countries that traded new goods (which we refer to as new sources); new countries trading continuous goods (all new countries); continuous goods no longer traded with certain continuous countries (which we refer to as old sources); and countries that entirely stopped their trade in continuous goods with Spain (all old countries). In addition, we examine the change in trade in new goods and old goods for continuous countries and countries entering (all new countries) and exiting (all old countries) trade with Spain.

We decompose the margins of trade for imports and exports to determine the contribution of the Great Depression and trade policy to the collapse in trade in the 1930s. We analyze growth in trade over the whole period, between 1928 and 1935, and for the sub-periods 1928-1931 and 1931-1935. As explained above, trade collapsed in the first period because of the fall in demand caused by the Great Depression, and started recovering from 1932 on. However, we showed that from 1931 on, there were substantial variations across countries and goods. These variations were due to cross-country differences in economic recovery and trade policy. Geopolitical factors contributed to the decline in trade as countries reacted to increasing tariffs, by establishing quotas and other policy measures, such as currency devaluations and exchange controls. As a result, we see that the impact of the decline was registered not only in the intensive margin, which consists of the value of trade in continuous goods and trading partners, but also in the extensive margins, referring to the number of products traded and trading partners. By decomposing trade into intensive and extensive margins, we can assess the importance of trade policy in explaining the major collapse in trade of the interwar period.

When analyzing the effect of trade policy, the trade models proposed by Melitz (2003) and Chaney (2008), based on firm heterogeneity in productivity, predict that the

extensive margin is negatively affected by both fixed and variable trade costs. However, there is no clear prediction for the intensive margin; if there is an increase in trade costs, there may be a reduction in exporters selling to a given country, but if exporters exit the market, the result could be a net increase in the value of exports per trading country. This is a different prediction to the Krugman (1980) model of trade with representative firms, in which trade costs affect the intensive margin. In the latter model, countries have identical firms and transport is the only variable cost. Thus, as every firm exports to every country in the world, trade barriers have a strong impact on trade flows when the elasticity of substitution between goods is high.

However, Chaney (2008) introduced firm heterogeneity in productivity and fixed costs of exporting into his model, and these assumptions affect the changes in the intensive and extensive margin. According to this model, there is a productivity threshold for each country that firms must exceed if they are to export to that country. Variable costs (transportation costs, duties) affect the volume of exports by exporters (the intensive margin), but also the set of exporters (the extensive margin). Moreover, the presence of trade barriers (information, regulations, bureaucracy) as a fixed costs associated with entering foreign markets provides a simple foundation for the extensive margin of trade (Chaney 2008). When trade elasticity is high, intensive margin is more sensible to changes in trade barriers, less productive firms and countries will exit the market producing a reduction of the market share, as a result large firms can easily overcome trade costs and trade flows are less affected to trade barriers. Although, when the distribution of firms is Pareto, which is contemplated that it will be a good approximation, the effect of the extensive margin dominates.

Betrán and Huberman (2022) analyzed the values of imports to Spain at product-country level during the period 1922-1935, finding a negative effect of tariffs. However, when they divided this period into sub-periods, they found that the effect held for the 1920s but not the 1930s. Moreover, they examined conditional most-favored nation (MFN) agreements¹³ by product, finding that they positively affected imports. Quotas

¹³ In a conditional MFN treaty, a country concedes domestic market entry for some goods in exchange for improved access abroad for the country's goods. With this MFN concessions by product if a country grants a lower tariff rate to another country, the country offers the same preferential treatment to its MFN partners, but only if those partners reciprocate by offering similar concessions for other goods. Unlike unconditional MFN, where the benefits are granted automatically, conditional MFN

generally had a negative effect on the value of trade for each country, but the effect was positive for quotas in trade treaties that gave trade partners advantages or guaranteed access to the Spanish market. The exchange rate also had a negative effect in both sub-periods. Looking at the extensive margin, Betrán and Huberman (2022) found that both tariffs and conditional MFN agreements affected the number of goods traded by each country, although the impact of MFN was much greater. Quotas and exchange rates also had an impact. Tariffs and devaluation insulated the domestic market from foreign competition, but these policies augmented uncertainty and held back the entry of new goods. In contrast, the adoption of MFNs offset these barriers and fostered market entry. Specifically, the authors calculated that between 1931 and 1935, the average marginal (partial) contribution of an MFN agreement to the probability of goods entering the Spanish market was 3.5 percentage points, whereas tariffs and the exchange rate each reduced the probability of entry by 0.5 points. Stand-alone quotas acted as a barrier to permanent entry.

For exports, Betrán and Huberman (2022) reported that MFN agreements and the exchange rate affected the value of exports from Spain to each country. This was especially important for Spain in the interwar period, when it was not a member of any formal or informal trading bloc. Spain's options were limited because of tariff barriers, exchange rate policy, and quotas impeding markets for wine, olives, and fruit. In the context of 'beggar thy neighbor' trade practices during the Great Depression years, Spain initiated early trade agreements to increase Spanish exports in exchange for domestic market access. The problem was that, as a result of Spain's historical dependence on a narrow range of export products and markets, MFN treaties contributed more to an increase in imports than in exports.

Consequently, considering both new trade theoretical developments and empirical findings for Spain during the 1930s, we assume that trade policy—especially conditional MFN clauses that are applied to specific products, as a trade barrier that mainly affected fixed costs—had a stronger effect on the extensive margin. We also assume that the

requires a reciprocal exchange of trade concessions. The latter unconditional MFN trade agreements extended until 1928; but were reduced after the Great Depression.

signing of trade agreements was a way of reducing fixed costs. An illustrative example is Spain's signing of a conditional MFN agreement with Italy in 1932, which was the first of its kind. The removal of barriers reduced the fixed costs of entry into the Spanish and Italian markets, leading to an increase in the number of goods traded between the two countries (the extensive margin).

In the next sub-section, we discuss the impact of different trade policies on the margins of trade. Specifically, we address how we would expect only a change in continuous goods in continuous trading countries if the Great Depression, and the resulting drop in demand, affected the intensive margin; in this case, we apply a stricter definition of the intensive margin, considering only the continuous goods traded by continuous trading countries. On the other hand, trade policy could produce changes in the extensive margin (new and old goods) in the continuous trading countries selling or buying different goods and the countries entering or existing in trade in different goods with Spain. The former refers to continuous trading countries that start to trade new goods previously traded with other countries, or discontinuing trade in goods that they had previously traded. These changes would have been produced by changes in trade barriers that vary by product and country, such as tariffs, MFN clauses, quotas and exchange rates.

4.2. Margins of trade for imports and exports

We employ the method of decomposition described in Betrán and Huberman (2022), which is a reduced form of a longer version in Eaton et al. (2007); see also in Meissner and Tang (2018). We decompose trade growth for imports and exports into the intensive and extensive margins; in other words, trade in continuous goods and trade in entering and exiting goods (also called new and old goods). The equation below refers to imports, but we substitute exports for imports when calculating the decomposition of export growth.

$$\frac{M_{ct}-M_{ct-1}}{M_{ct-1}} = \frac{\sum_{k \in CN_C^{t-1,t}} (m_{ct}^k - m_{ct-1}^k)}{M_{ct-1}} + \frac{\sum_{k \in EN_C^{t-1,t}} (m_{ct}^k)}{M_{ct-1}} - \frac{\sum_{k \in EX_C^{t-1,t}} (m_{ct}^k)}{M_{ct-1}}$$

where M_{ct} is the total value of imports to Spain from a country c in year t ; m_{ct}^k is the value of imports of product k in year t ; $CN_c^{t-1,t}$ are continuous or incumbent goods defined as goods imported in year $t-1$ and year t ; $EN_c^{t-1,t}$ denotes entering goods or goods that are imported in year t , but not in year $t-1$; $EX_c^{t-1,t}$ represents exiting goods or goods that are imported in year $t-1$, but not in year t . Countries, c , refers to incumbent or continuous countries that export some or all continuous goods; continuous countries that export additional goods (continuous and new goods); new countries in export activity; old ones that stop trading selected (but not all) goods; and countries that stop exporting to Spain entirely. The left-hand side of the equation is the (net) change in imports. The first term on the right-hand side represents the contribution of the change in continuous goods; the second term, new goods; the third term denotes exiting goods. We have computed this decomposition for imports and exports for the whole period, $t-1=1928$ and $t=1935$, and for the sub-periods 1928-1931, $t=1931$, which included the retaliatory trade policy applied to Spain in 1930 during the Dictatorship (1923-1931), and 1931-35, $t=1935$, which coincides with the Second Republic's democratic period (April 1931 and the Civil War July 1936) and the reciprocal bilateral trade agreements policy (see Tables 1 and 2 for imports and exports).

In principle, we would expect that the intensive margin captures any changes in trade that occurred, usually in the short-term, in preexisting or continuous relationships; conversely, the extensive margin captures changes in trade in new items and with new trading partners (Bernard et al., 2009). Normally, changes in the extensive margin make less of a contribution to trade growth because they take longer to materialize, given that countries or their firms must look for new markets for a substantial group of goods, which entails fixed marketing costs.

However, trade growth could also be the result of changes in trade costs produced by trade policy. Tariffs potentially affected both margins, as they can alter the value of goods traded and the number of goods traded by country, although, as explained before, they mainly affected the extensive margin. However, changes in fixed trade costs attributed to the signing of MFN agreements that resulted in the expansion or contraction of market access primarily affected the extensive margin. In the previous section, we

explained how the number of items traded, the extensive margin, varied across countries and goods. Moreover, the matching in the number of imported and exported items by country for the same years intersects with the Spanish reciprocal trade policy applied since 1931, in which Spain exchanged access to domestic markets for access to foreign markets. As a result, we assume that the changes in tariffs and especially in MFNs affected the extensive margin.

We conducted a more extensive decomposition of the trade in continuous goods (Table 1). Lines 1-3 represent the contribution of growth in continuous goods. These consist of goods imported continuously from continuous partners (line 1) and imports of the same goods from new sources, incumbent trading countries that did not previously trade these continuous goods but now do (line 2), and new countries, countries that were not trade partners before (lines 3). We consider line 1 as the intensive margin. The rest of the contributions are changes in the sources of goods (lines 2 and 3) and the exiting of old goods and entering of new goods (corresponding with the rest of the lines). Lines 4 and 5 show the goods Spain ceased importing from continuous trading partners and the countries that stopped trading with Spain. Lines 7 and 8 show the entry of new goods, consisting of the addition of goods never previously traded by either continuous or new countries. Lines 10 and 11 indicate the contribution of exiting goods from all sources.

For imports, our calculations are based on approximately 1,720 goods from 93 import sources corresponding to 81 countries that were total trade partners. As we see in Table 1, over the entire period between 1928 and 1935, 84.34 percent of the decline in trade can be attributed to the change in the value of trade in continuous trading relationships (goods and countries). However, the contribution of the extensive margin was non-negligible. Lines 2-5 capture the effects of trade policy (tariffs, MFN, and quotas). Since these policies affected market access, they should be interpreted as components of the extensive margin. Line 4 alone shows that the exit of continuous goods from old sources contributed 15.24 percent of the decline in trade between 1928 and 1935.

Lines 14 and 15 summarize the intensive and extensive margins, respectively. As the different components have different signs, we have calculated the contribution in absolute terms in the next column. The absolute changes reveal a large share of trade explained by the extensive margin. For the entire period, the extensive margin accounts

for about 24.5 percent of import growth, meaning the intensive margin contributes 75.5 percent.

As mentioned above, we have divided the period into two sub-periods, before and after the signing of reciprocal bilateral trade treaties in late 1931. Before, in the 1920s period, tariffs were organized by the so-called *Cambó* tariff in 1922 and some tariff adjustments happened in 1926-1928. Bilateral trade agreements occurred around 1925 establishing special tariffs, lower than the second tariff, which was the normal tariff applied for countries with a trade treaty and negotiated conditional Most Favoured Nation (MFN) clauses for certain goods. Starting in 1927, following the World economic conference arrangements to recover world trade, Spain signed unconditional MFN agreements for all products, and the second tariff was applied to all the countries with trade agreements, removing the special tariffs on some products for some countries. When the Great Depression started, Spain retaliated in 1930, with the so-called *Wais* tariff, increasing tariffs for certain goods, against Smoot Hawley tariff (1930) applied by the USA and France's increasing tariffs and establishing of quotas.

In the Second Republic period of our dataset, 1931-1935, Spain began, as soon as late 1931, to negotiate reciprocal agreements, based on the principle of "*comprar a quien nos compra*" (buy from those who buy from us). Although Spain's choices were limited in the beggar-thy-neighbor trade policy context, the main purpose was to look for markets for agricultural exports in exchange for domestic markets for the same countries. The republican government participated in the League of Nations goals and interests of re-establishing the multilateral trade order. However, for a small country without the possibility of diverting markets toward a trading bloc, or even empire, it was a great challenge. The regime option was to assure markets for Spanish exports. Often embedded in conditional MFN clauses, these agreements conceded domestic market access in exchange for improved exposure abroad for Spanish goods. Several trade policy instruments were used in these trade agreements: tariffs, MFN clauses and, from 1933 on, quotas.¹⁴ MFNs locked in trading partners and guaranteed market access. Trade agreements affected countries involved in trade and showed up in the extensive margins of imports and exports (Betrán and Huberman 2022).

¹⁴ Quotas were considered as an instrument at the end of 1931 (December), but they were not applied until 1933.

Table 1 shows a change in the nature of trade during the period before and after trade agreements. The collapse in trade in 1931 (1928-1931 period) represented a decline of 89.1 percent in import growth for continuous goods and countries (line1, intensive margin), and around 80.76 percent considering the contribution in total trade (absolute terms, as mentioned, treating both increases and decreases in trade as positive). We observe that continuous goods and countries account for a large share of trade growth; nevertheless, given the simultaneous decline in trade of continuous goods from old sources and an increase in new sources, the net effect was that trade partners exported fewer goods than they traded before the crisis. However, during the early years of conditional trade agreements, we see a more serious decline in trade in continuous goods and countries of 101.63 percent, which represented, in absolute terms, 71.8 percent of the total growth rate. Besides, there was a higher increase in trade from new sources than the decline in old sources, meaning some goods were imported from different countries than before; those goods imported from new sources and exiting from continuous countries represented 13.4 percent and around 10 percent, respectively. In absolute terms, the extensive margin accounted for 28.2 percent in this second period of trade; a higher share than in the previous period (19.2 percent)¹⁵.

For exports, we use approximately 1,720 goods for 10 export destinations and the rest, which we treat as the remaining trade with other countries¹⁶. We calculate the intensive and extensive margins in the same way as for imports, but for a smaller number of countries. This could lead to us underestimating the impact of the extensive margin in relation to imports. Moreover, given that exports were concentrated in a smaller number of different types of goods, we expect the intensive margin to be more important for exports than imports. As trade agreements were signed to ensure Spanish exports had access to foreign markets, we expect similar changes in the margins of trade.

Table 2 shows the results for the whole period and the sub-periods. As expected, the contribution of the intensive margin is greater for exports than for imports. In terms of the total contribution to export growth over the whole period (1928-1935), the export

¹⁵ We have noted that the primary effect of the extensive margin stems from the reduction of fixed trade costs resulting from the conditional MFN by product and country.

¹⁶ As mentioned previously, these 10 export destinations accounted for 83 percent of total exports in 1928 and 76 percent in 1935.

of continuous goods to continuous trading partners registered a decline of 94 percent (line 1), representing 89.4 percent in absolute values. As with imports, the intensive margin was higher during the first period, 1928-1931, with 85.6 percent in absolute values. However, during the period of trade treaties, 1931-1935, the extensive margin increased, registering 16.7 percent (compared to 14.4 percent in the first sub-period 1928-1931). This was the result of the increase in exports in continuous goods to new destinations (4.4 percent) and in new goods (0.55 percent), and the decrease in exports of continuous goods to previous trading countries (10.4 percent) and the exiting of goods from continuous trading countries (1.36 percent).

In sum, there was a non-negligible change in the extensive margin during the Great Depression, even though it was a short period of time, and the change was more significant during the period coinciding with Spanish trade agreements. Trade policy modified the pattern of trade for imports and exports. Imports were more affected in the extensive margin, given the greater variety of goods (goods by country) imported in relation to exports, and the difficulty of expanding the market for Spanish exports, which were mostly food and beverages consumed by high-income countries that meant they were subject to with high-income elasticity. As a result, as we have calculated in Tables 1 and 2, the impact of conditional MFN agreements during the 1931-1935 period in relation to the 1928-1931 period was greater for imports, at 9 percentage points (19.2 percent vs. 28.2 percent), than for exports, at 2.3 percentage points (14.4 percent vs. 16.7 percent). However, for both imports and exports, the impact was mainly due to an increase in trade with new trading partners and a decrease in trade with old countries. We suggest that these changes reflect the importance of the signing of conditional MFN trade treaties.

It is helpful to compare what happened in Spain with the importance of trade policy for other countries. For the United States, Irwin (1998) analyzed the decline in US imports after 1930 following the imposition of the Smoot Hawley tariff, using partial and general equilibrium assessments. Using partial equilibrium analysis, he concluded that the tariff reduced imports by between 4-8 percent, although accounting for deflation meant a 8-10 percent reduction. By conducting a general equilibrium model and counterfactual simulation, the author estimated that 22 percent of the decline in imports was due to the increase in the effective tariff. For the United Kingdom, de Bromhead et

al. (2018, 2019), using disaggregated import data on values and items traded by country, computed the log change in the total imports of items traded between 1929 and 1933, which they considered the intensive margin, although they did not differentiate by trading country. They compared this with the log change in the total value of all imports, finding that the intensive margin can account for the entire decline in trade. However, they also estimated, using a general equilibrium model, an average 10.8 percent decline in imports to the United Kingdom due to increased protection, which was equivalent to 24.7 percent of the total fall in imports between 1929 and 1933. In addition, they identified an important shift in trade toward the Empire: trade policy can explain over 70 percent of the increase in the British Empire's share of UK imports between 1930 and 1933.

In the case of Spain, Betrán and Huberman (2022), using disaggregated trade data, found that the extensive margin accounted for 28.2 percent of the change in nominal import values between 1931 and 1935. For the entire period 1928-1935, the extensive margin accounted for 24.5 percent, while for 1928-1933, the period analyzed for the aforementioned countries' studies, this figure was around 22 percent. The impact of trade policy on the extensive margin is not insignificant given that it is a short period of time. This result is in line with the calculations for the United States and the United Kingdom when considering their higher impacts of trade policy.

5. *How important was intra-industry trade?*

We have decomposed trade into three broad categories: agriculture, manufactures and raw materials.¹⁷ In the case of imports, manufactures accounted for 45 percent of trade in 1928 (Table 3). However, the fall during the crisis was much more severe in agriculture. Agriculture had a 24 percent share of total imports in 1928, while the share of raw materials was 31 percent. Regarding exports, agriculture accounted for more than 60 percent in 1928, raw materials 13 percent, and manufactures 25 percent (Table 4). For exports, the decline was greatest in manufactures, followed by raw materials. Thus, how important was intra-industry trade, referring to imports and exports in the same industries, before and during the Great Depression?

¹⁷ We consider 1-digit SITC categories: agriculture includes 0, 1 and 4; manufactures includes 5, 6, 7 and 8; raw materials includes 2 and 3.

We also adopted another classification of the type of good: consumer goods, industrial supplies and materials, and capital goods.¹⁸ Consumer goods include food, feed, beverages, oils and miscellaneous manufactures. Industrial supplies consist of crude and processed materials (fuel, cotton and rubber raw, and basic manufactures). Capital goods comprise machinery, equipment, transport equipment, road vehicles, and telecommunications. In 1928, nearly 60 percent of imports (58 percent) were industrial supplies and materials or production inputs, and 16 percent were capital goods or durable consumer goods. For exports, the opposite occurred: nearly 60 percent of exports in that year (63.3 percent) were consumer goods, with industrial supplies including materials accounting for 36 percent.

Despite the aforementioned pattern of trade—manufactures accounted for 45 percent of imports and 25 percent of exports—there was also room for intra-industry trade within the category manufactures. Similarly, trade in agricultural products sometimes involved the same products, such as wheat, rice, wine and oil. How significant was this trade in 1928, and how did it change during the Great Depression?

As we have disaggregated trade data and bilateral trade flows for exports and imports, we can calculate an intra-industry trade index without some of the potential issues. First, since products are defined according to SITC, we avoid problems related to sectoral aggregation. Second, the use of bilateral trade also eliminates the possibility of two-way trade in similar products or categories; we have strictly one-way trade between Spain and each trading partner (Fontagné and Freudenberg 1997).

We use the intra-industry trade index proposed by Grubel and Lloyd (1975), which captures trade within a category, as follows:

$$G-L_{kt} = \frac{(X_{kt} + M_{kt}) - |X_{kt} - M_{kt}|}{X_{kt} + M_{kt}} \times 100 = \left(1 - \frac{|X_{kt} - M_{kt}|}{X_{kt} + M_{kt}}\right) \times 100$$

where X and M are values of exports and imports, respectively, of product k in year t , and $G-L_{kt}$ is the share of intra-industry trade in total trade for category k . The Grubel-Lloyd (G-L) index value is 100 when all trade in a category is intra-industry trade, and 0 if

¹⁸ We consider 1-digit SITC categories: consumer goods includes 0, 1, 4 and 8; industrial supplies includes 2, 3, 5, and 6; capital goods is 7.

there is no intra-industry trade. The higher the index, the higher intra-industry trade is in each category k . We calculate the G-L index for all years considered, for the total and by type of good: manufactures and agriculture and raw materials. Also, we use different levels of disaggregation (1-digit, 2-digit and 3-digit SITC) and all items included in the official Spanish trade statistics. For these different levels, we weight with trade shares. We expect that the higher the aggregation level, the higher intra-industry trade is. We can also calculate the index between different trading partners, c , which are the top 10 trading countries considered.

$$G-L_{ckt} = \frac{(X_{ckt} + M_{ckt}) - |X_{ckt} - M_{ckt}|}{X_{ckt} + M_{ckt}} \times 100 = \left(1 - \frac{|X_{ckt} - M_{ckt}|}{X_{ckt} + M_{ckt}}\right) \times 100$$

We can thus calculate the share of trade related to intra-industry trade and the share of trade represented by inter-industry trade.

Figures 10.1, 10.2, and 10.3 show the trend of the G-L intra-industry index using 1-digit, 2-digit and 3-digit SITC levels, respectively, for the total and the three types of goods. We see that total G-L index declined in 1931 relative to 1928, due to the Great Depression. From the highest aggregation level to the lowest, the share of intra-industry trade represented around 50 percent, 25 percent and 15 percent, respectively, of the total. Manufactures registered the highest intra-industry trade, at around 60 percent, 35 percent and 25 percent, respectively, at the three SITC levels. Raw materials and agriculture had relatively low levels of intra-industry trade.

Looking at the 3-digit level, the GL index declined until 1932. It then increased until 1934 before declining again in 1935, although the index value remained higher than that for 1932. From 1932 on, Spanish trade agreements may have fostered rising intra-industry trade. Manufactures had a higher percentage of intra-industry trade, ranging between 20 and 30 percent, while agriculture was around 10 percent and raw materials below 20 percent.

If we compare Spain's intra-industry trade with that of other countries, again at the 3-digit level, it was lower (15-18 percent) for the interwar period than that calculated for

Germany and France (approximately 40 percent) for the nineteenth century (Hungerland and Wolf, 2022; Becuwe et al., 2021). Given the importance of agricultural goods in Spain in relation to the other countries, we could compare the share of intra-industry trade for manufactures, and that for Spain was of 20-30 percent, which is also a lower share.

In Figure 11, we show the G-L index at country level and using 3-digit SITC. As can be seen, intra-industry trade does not exceed 15 percent for the total or for manufactures. France is the country with most intra-industry trade with Spain (at 11 percent), followed by Italy (5-15 percent), Germany (7 percent), the United Kingdom (6 percent), the Netherlands (4 percent) and the United States (3 percent). In these countries, intra-industry trade was higher in the manufacturing sector due to the importance of trade in different varieties of the same goods. However, there were changes over the period. France declined over the period, the United Kingdom declined until 1931 before stabilizing, Italy followed an inverted-U shape, and the Netherlands and the United States rose from 1933. These changes are similar to those mentioned earlier as a result of trade policy.

We also calculated the G-L index of intra-industry trade using all the items in the official statistics, which would be equivalent to 5-digit SITC.¹⁹ As expected, the index is lower due to the greater level of disaggregation (Figure 12). The GL index for the total declined from 1928 to 1932, before increasing and remaining around 7 percent. The reason for this decline was the trends in agriculture and raw materials, because the drop in manufactures was produced after 1933. Manufactures had the highest index value at about 10 percent, while agriculture was below 4 percent and raw materials about 8 percent.

In sum, the G-L index of intra-industry trade was low in Spain in comparison with high-income countries, due to Spain's specialization in agriculture. The Great Depression negatively affected the share of intra-industry trade, whereas it was bolstered by trade agreements after 1932.

¹⁹ This would be the lowest level of SITC; for some goods the disaggregation level is equivalent to 3-digit SITC.

6. Comparative Advantages

Was the Spanish comparative advantage based only on agricultural goods? Did it change during the Great Depression? Did trade policy affect it? We measure comparative advantages by means of the Revealed Comparative Advantage (RCA) index proposed by Balassa (1965), using the Lafay version (1992), as follows:

$$RCA_{kt} = \left(\frac{(X_{kt} - M_{kt})}{(X_{kt} + M_{kt})} - \frac{\sum_{kt} (X_{kt} - M_{kt})}{\sum_{kt} (X_{kt} + M_{kt})} \right) \times \left(\frac{X_{kt} + M_{kt}}{\sum_k X_{kt} + M_{kt}} \right) \times 100$$

As before, X and M are exports and imports, respectively, for good k and year t . The index is the difference between the normalized net exports for good k and the normalized total net exports, weighted by the share of the trade of good k in total trade. All indices for k sum up to zero and, by definition, it comprises values from 200 to -200, indicating complete specialization in a single good in exports or imports, respectively. We have calculated the index at 1- and 3-digit SITC levels. We show the Lafay index of RCA for 1-digit SITC in Figure 13.

At the highest level of aggregation (1 digit), Spain had RCA in food, beverages and oils. There was an increase in the RCA in food, mainly fruit which at a much more disaggregated level were based on fish, rice, fruit juices, such as grape must, and vegetables. The RCA in beverages, including wine, declined in 1932 but then stabilized, and the RCA in olive oils declined until 1933. In general, Spain did not have a comparative advantage in manufactures, with the exception of basic manufactures, although this declined during the Great Depression. Notable among the basic manufactures that had slightly higher RCA were cork, lead primary transformation, and cotton fabrics (woven, knitwear and towels), and miscellaneous, due to footwear (leather shoes). Some way behind, were chemicals, with miscellaneous chemicals (turpentines) and inorganic chemicals (calcium carbide, mercury, lead nitrate).

We also calculate RCA by trading partners (Figure 14). Spain did relatively better in France and the United Kingdom than in the rest of the countries considered. In the latter

countries, RCA declined after 1928, while the opposite occurred in the former countries. RCA in the Netherlands remained relatively stable.

7. Conclusions

The application of SITC allows us to study the pattern of Spanish trade by good and by country and compare it over time and with other countries' trade classified in a similar way. Also, the use of more disaggregated data allows us to evaluate the importance of the extensive margin compared to broader categories of items that would indicate greater changes in the intensive margin. We analyze how the collapse in Spanish trade, in both imports and exports, was strongly influenced by the Great Depression and trade policies, and we obtain that the latter played a significant role. In addition, STIC and bilateral trade data permit to calculate intra-industry trade indices; a decline in intra-industry trade was observed and a recovery after the trade treaty agreements. We have also detected a shift in the comparative advantages, with increasing specialization in fruit, and declining in wine and olive oil.

In 1930, during the dictatorship (1923-1930), Spain retaliated against the United States and France by increasing tariffs in certain goods; but in late 1931, during the Second Republic, it negotiated bilateral trade treaties with conditional MFNs that conceded domestic market access in exchange for a greater exposure of import-goods. In the absence of an Empire to which Spain could divert trade, the urgent application of these agreements was crucial for the Spanish economy. These reciprocal trade agreements had the expected effects of increasing exports and the extensive margin, but they were concentrated in a small number of agricultural exports sent to limited markets in high-income countries. As a result, we find that the conditional MFN treaties contributed more to an increase in imports than to an increase in exports.

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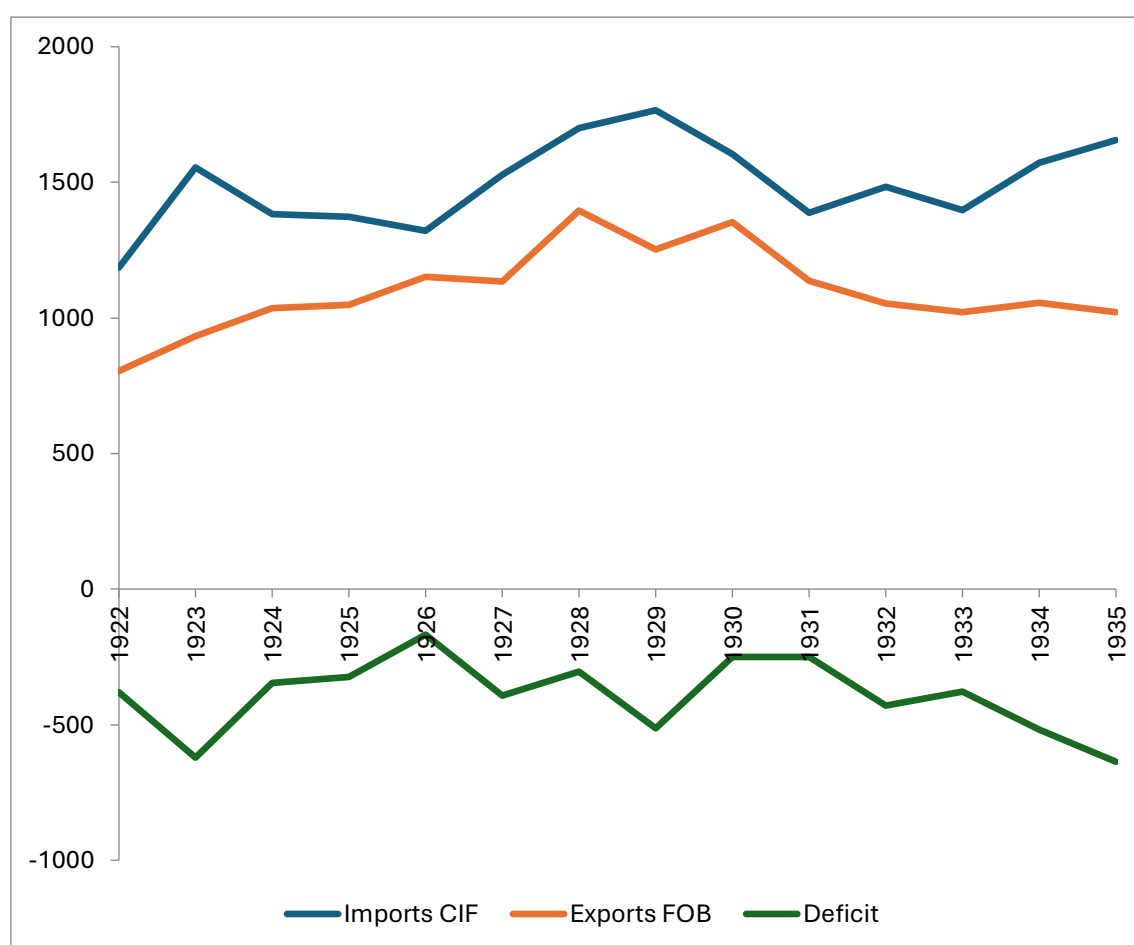
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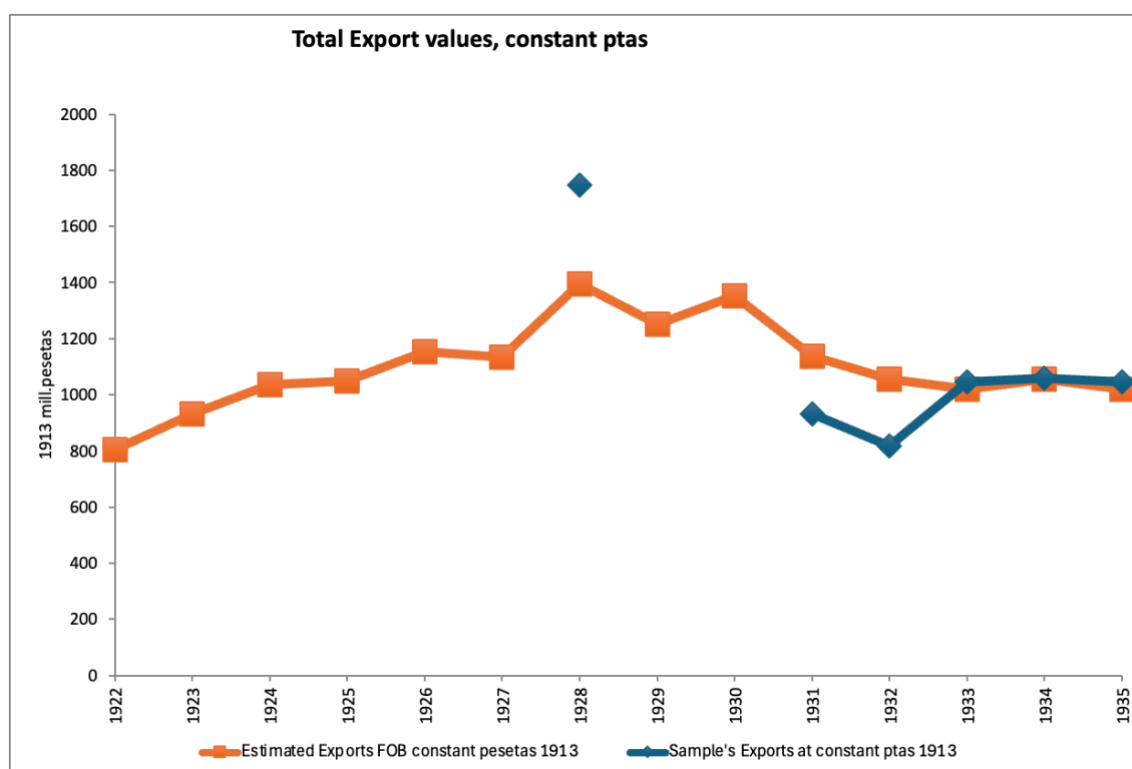
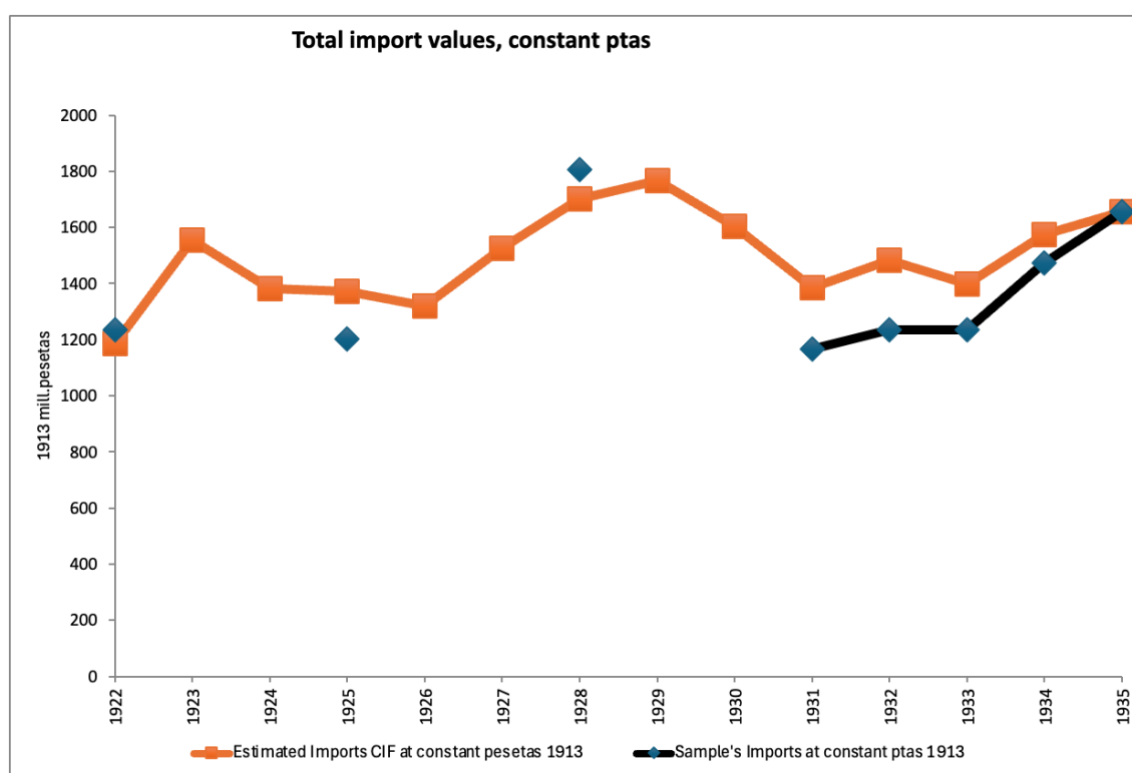
Figure 1. Spain Goods Trade, exports and imports and trade balance, 1922-1935



Source: Tena-Junquito (2005).

Note: 1913 million pesetas

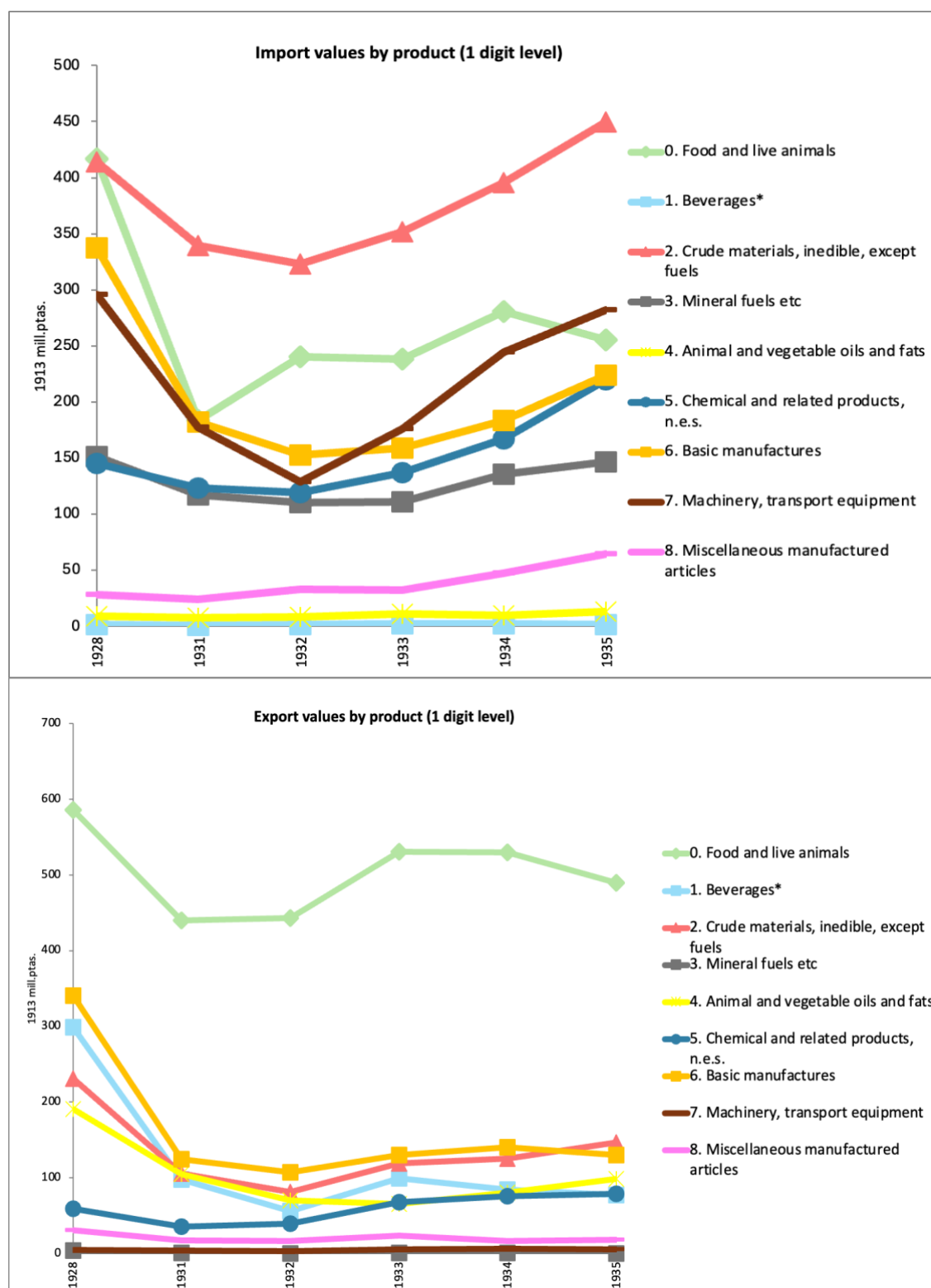
Figures 2.1 and 2.2: Estimated and Sample for Imports and Exports, 1922-1935



Source: Estimated trade by Tena-Junquito (2005) and our sample of products and countries from *Estadísticas de Comercio Exterior*.

Note: Trade is *special trade*, the transit trade is not included and presents a very low proportion in the Spanish trade. Trade at constant 1913 million pesetas.

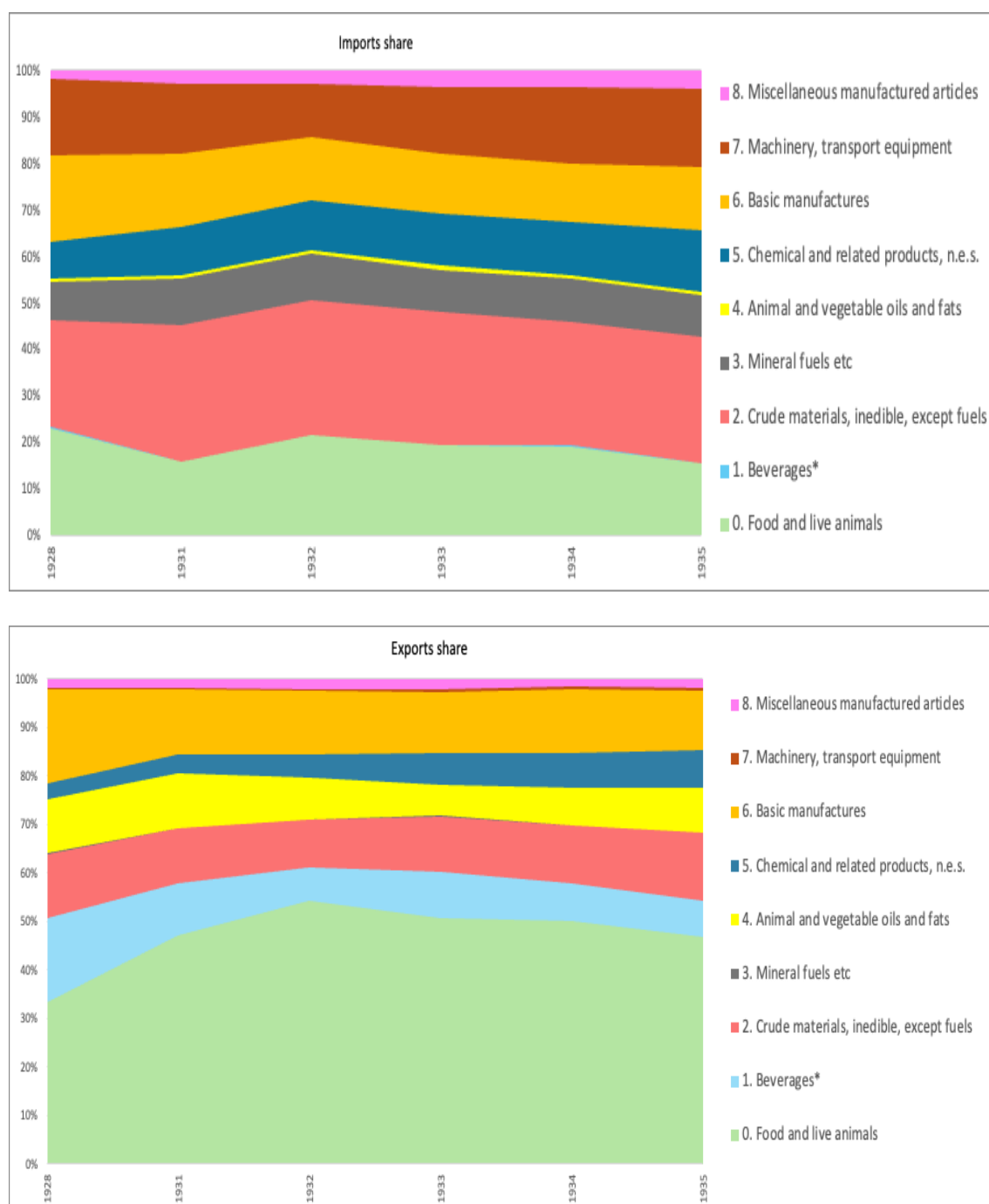
Figures 3.1 and 3.2. Imports and Exports by Product at 1-digit level (SITC), at constant 1913 mill. Ptas, 1928 and 1931-1935



Source: Own calculations.

Note: Trade at constant 1913 million pesetas. * We consider only Beverages, in the 1-digit level of SITC is Beverages and Tobacco.

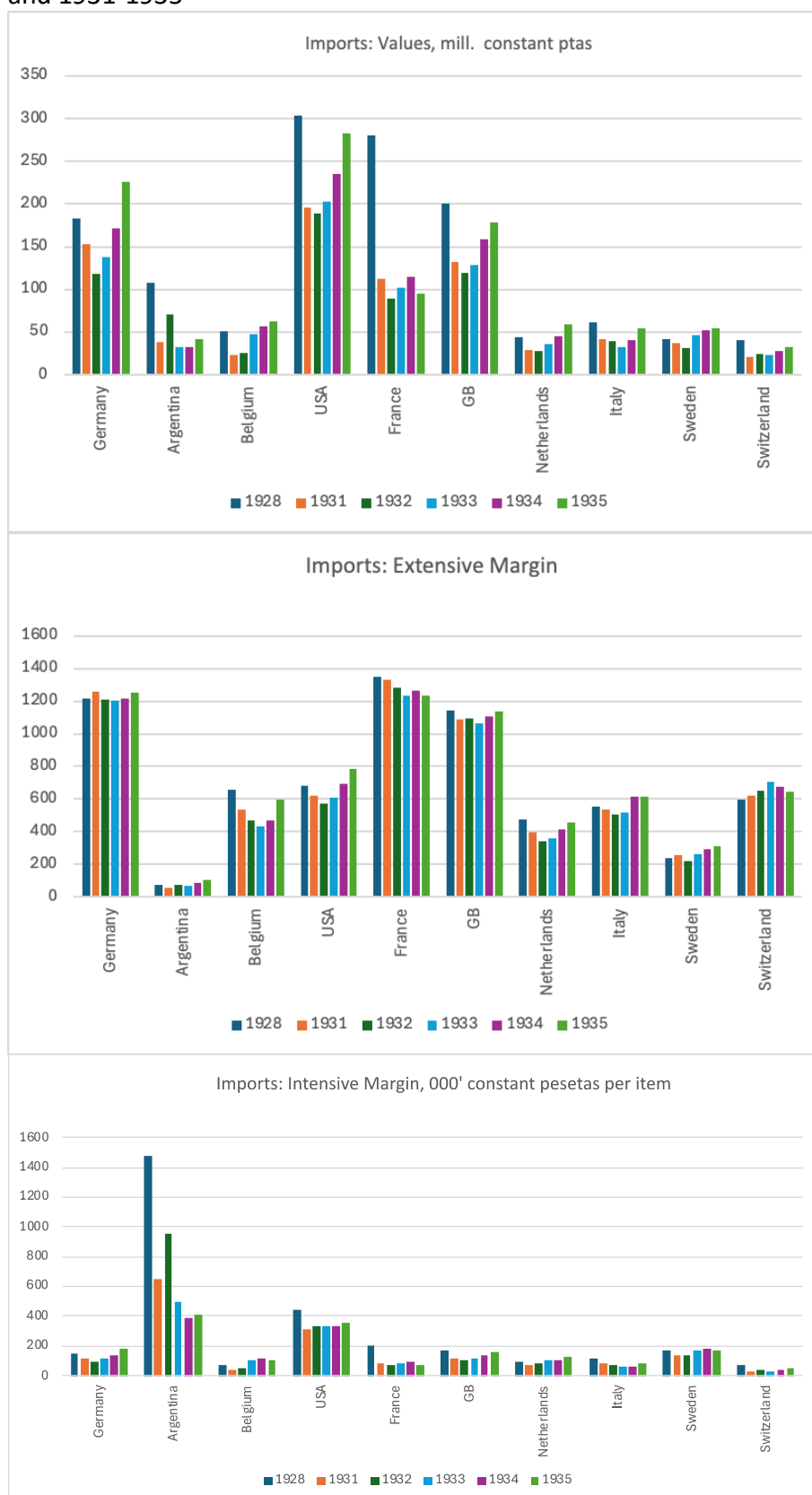
Figures 4.1, 4.2. Import and Exports shares at 1-digit level, 1928 and 1931-35



Source: Own calculations.

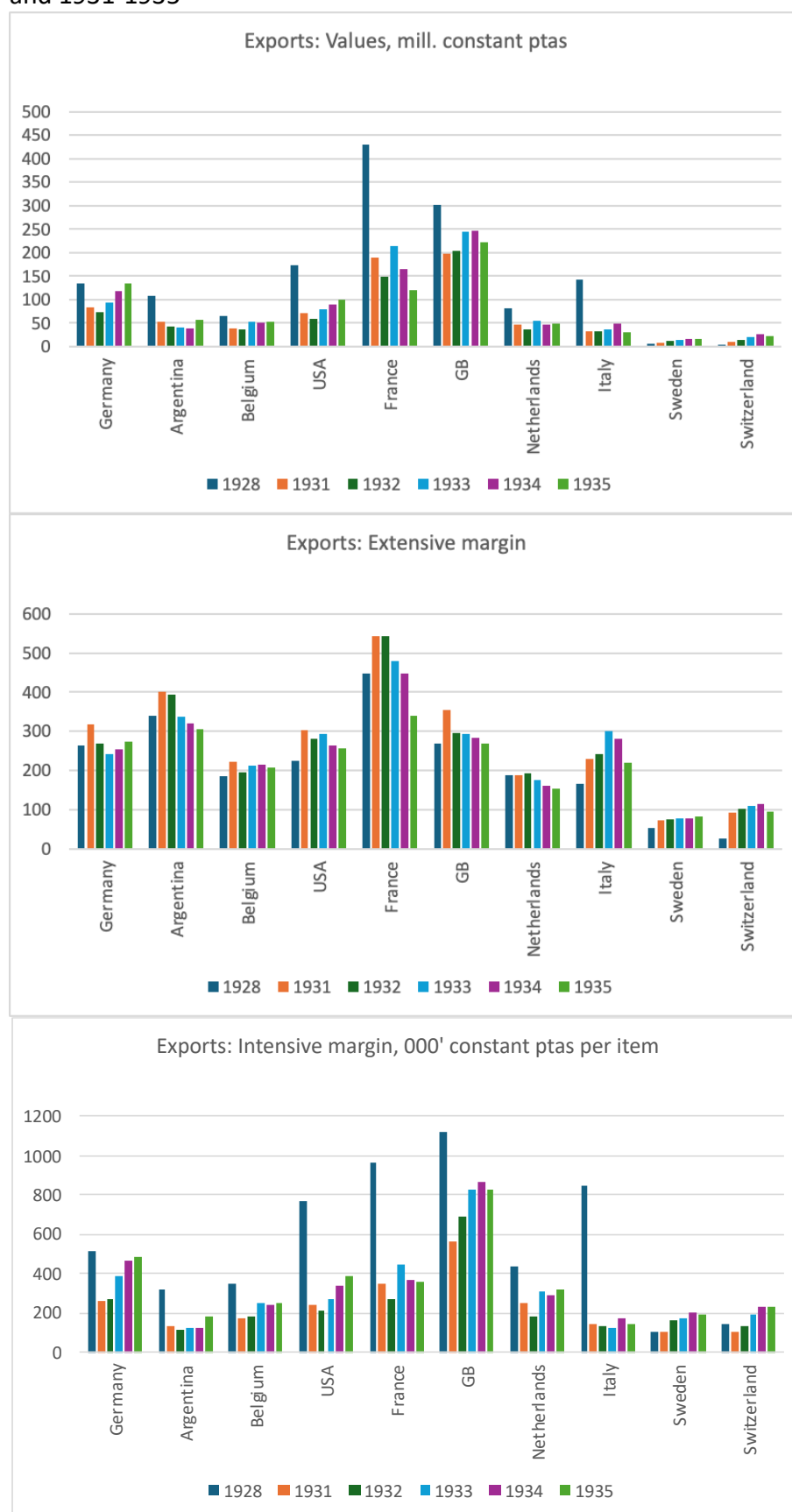
Note: Trade at constant 1913 million pesetas. * We consider only Beverages, in the 1-digit level of SITC is Beverages and Tobacco.

Figures 5.1, 5.2, 5.3. Imports by country: Values, Extensive and Intensive Margins, 1928 and 1931-1935



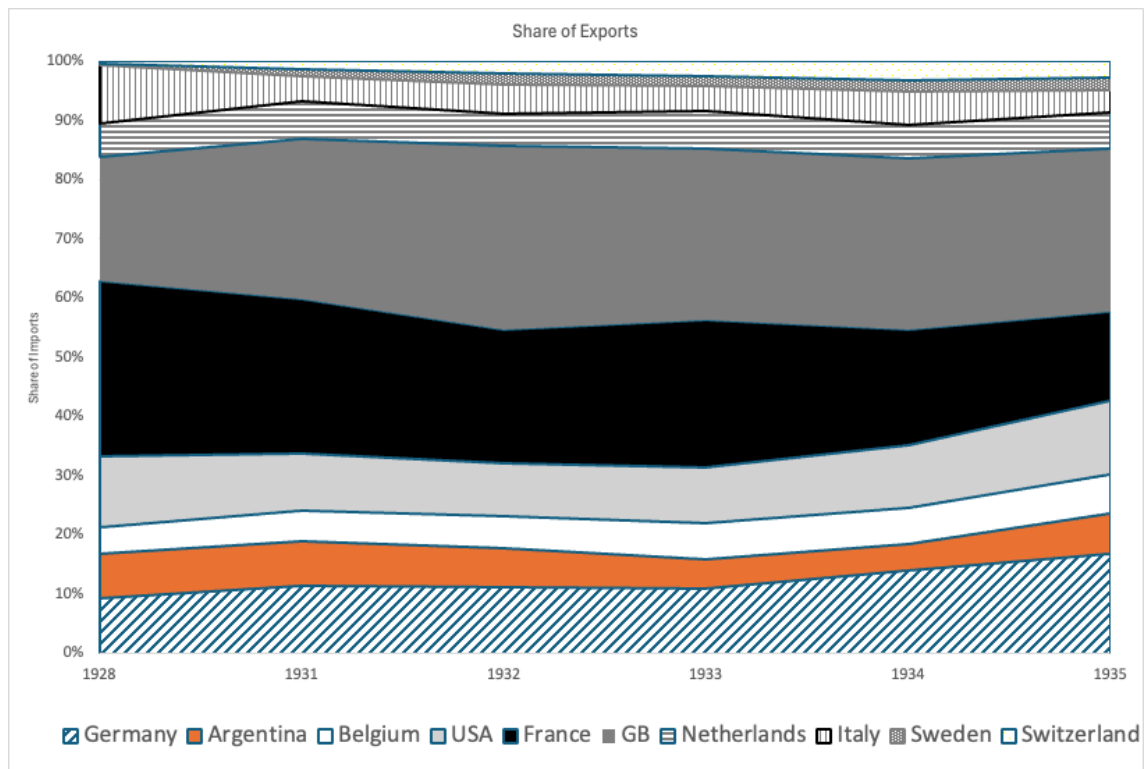
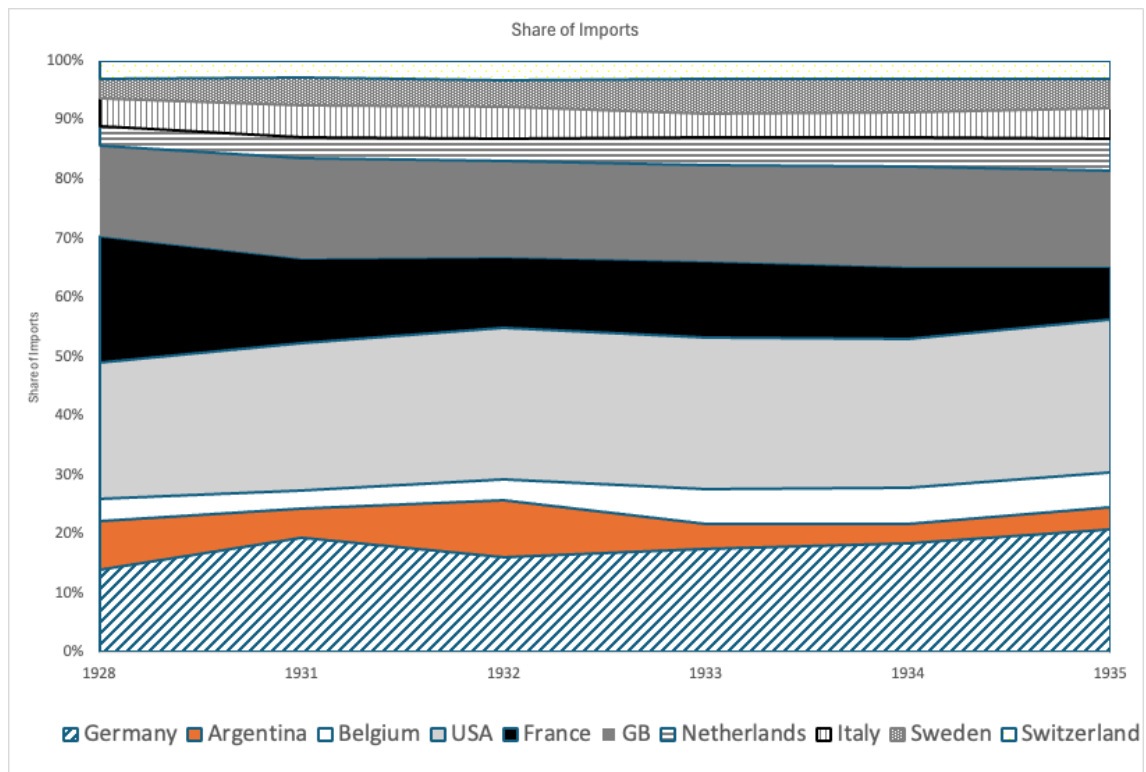
Source: Own calculations. Note: Values, at constant 1913 million pesetas, Extensive margin, number of items or categories, Intensive margin, average value per item in thousand constant pesetas.

Figures 6.1, 6.2, 6.3. Exports by country: Values, Extensive and Intensive Margins, 1928 and 1931-1935



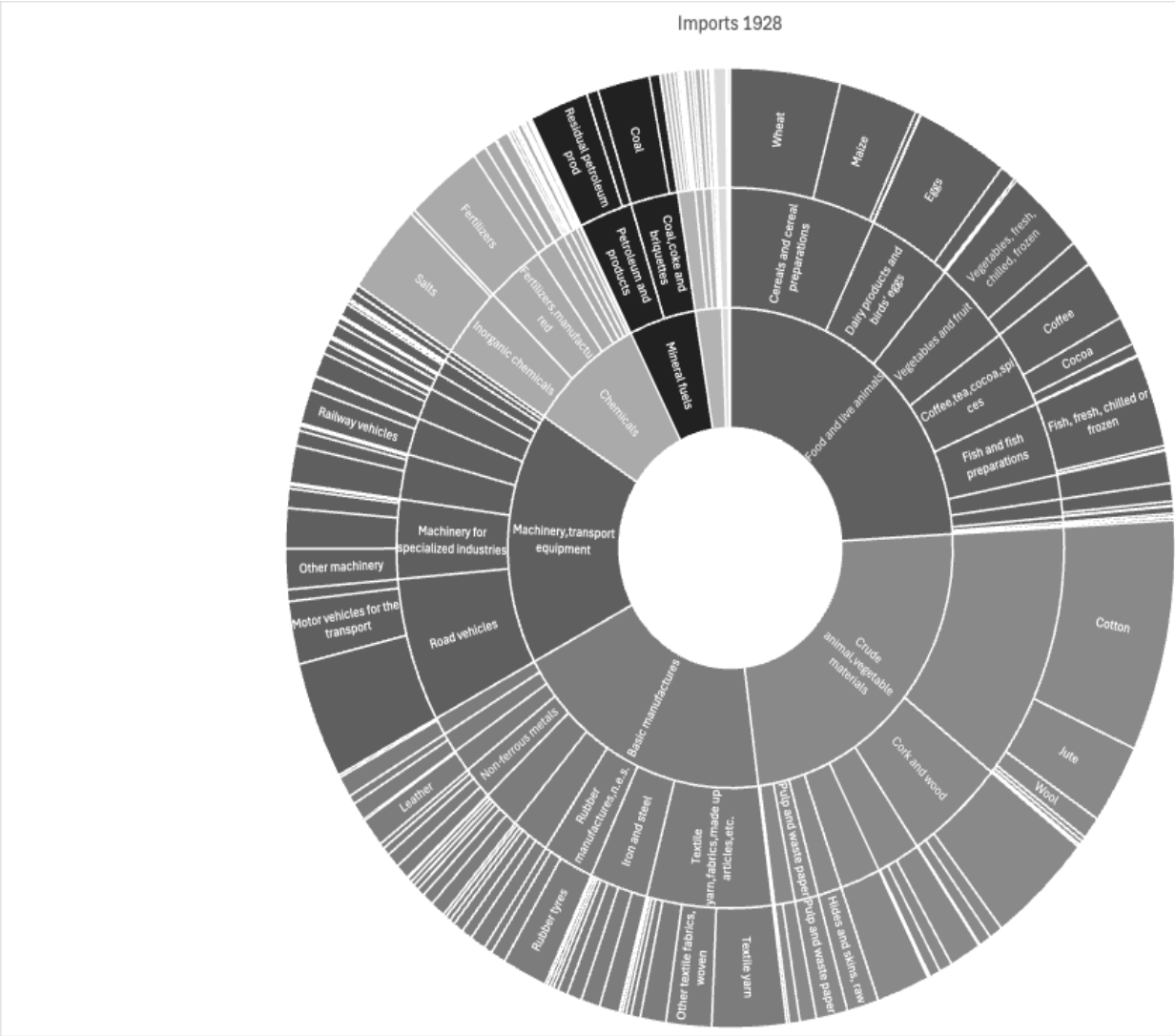
Source: Own calculations. Note: Values, at constant 1913 million pesetas, Extensive margin, number of items or categories, Intensive margin, average value per item in thousand constant pesetas.

Figures 7.1 and 7.2. Share of imports and exports by country, 1928 and 1931-1935



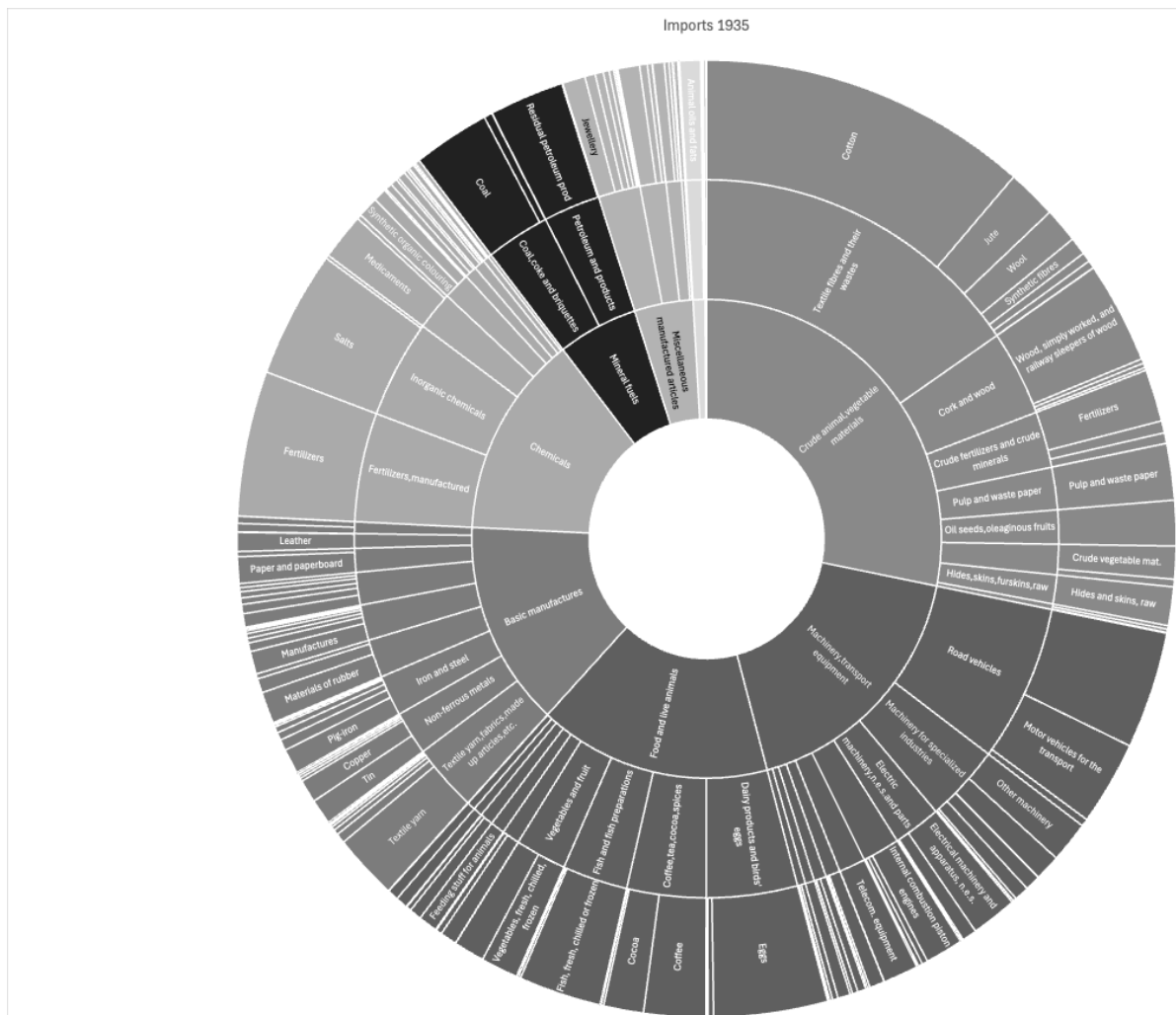
Source: Own calculations.

Figure 8.1. Imports at 1, 2 and 3-digit levels of SITC for 1928



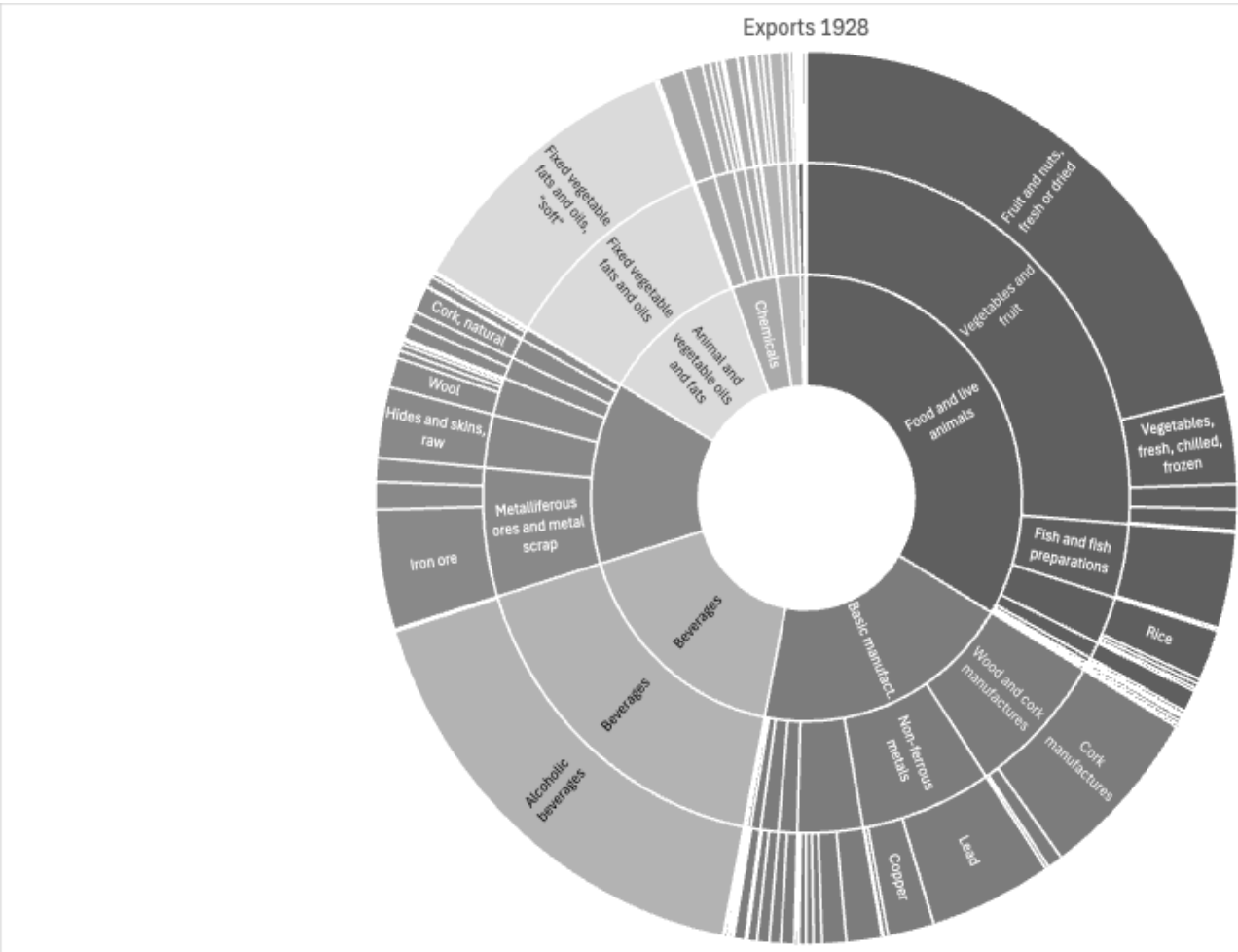
Source: Own calculations.

Figure 8.2. Imports at 1, 2 and 3-digit levels of SITC for 1935



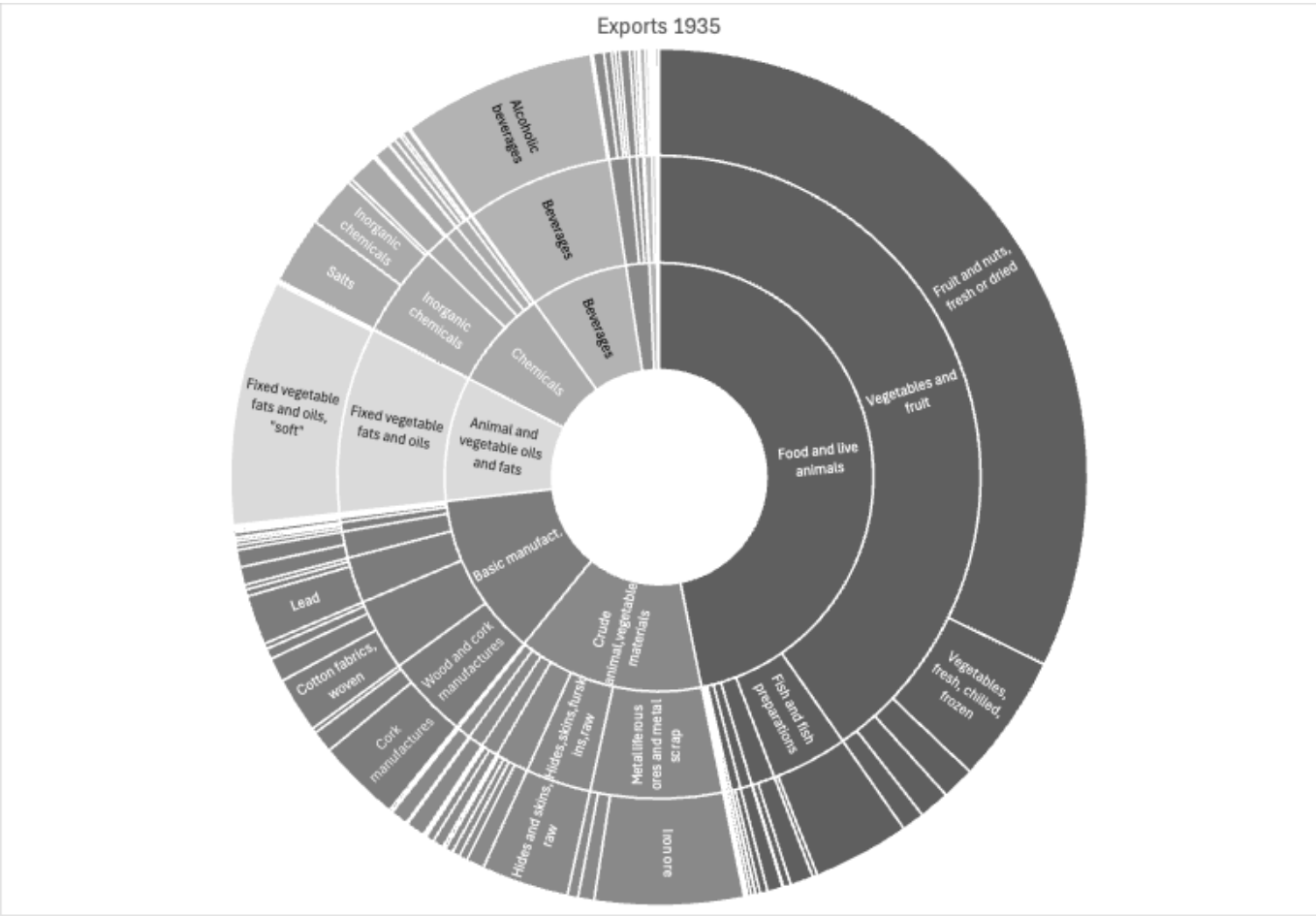
Source: Own calculations.

Figure 9.1. Exports at 1, 2 and 3-digit levels of SITC for 1928



Source: Own calculations.

Figure 9.2. Exports at 1, 2 and 3-digit levels of SITC for 1935



Source: Own calculations.

Table 1. Decomposition of Imports growth in Intensive and Extensive Margins

Imports (nominal values)		1928-1935	%	1928-1931	%	1931-1935	%
			(abs terms)		(abs terms)		(abs terms)
Percent of Growth due to:		-70.08		-59.92		-25.34	
1	Cont. Goods, cont. countries	-84.34	75.47	-89.15	80.76	-101.63	71.81
2	Cont. Goods, new sources	3.30	2.95	2.75	2.49	19.00	13.42
3	Cont. Goods, all new countries	0.06	0.05	0.00	0.00	0.05	0.03
4	Cont. Goods, old sources	-15.24	13.64	-9.37	8.49	-14.05	9.93
5	Cont. Goods, all old countries	-0.08	0.07	-0.03	0.02	-0.08	0.06
6	Cont. Goods	-96.30	92.19	-95.79	91.76	-96.72	95.26
7	New Goods, cont. countries	2.52	2.25	2.44	2.21	1.71	1.21
8	New Goods, all new countries	0.00	0.00	0.00	0.00	0.00	0.00
9	Entering Goods	2.52	2.25	2.44	2.21	1.71	1.21
10	Old Goods, cont. countries	-6.22	5.56	-6.65	6.03	-5.00	3.53
11	Old Goods, all old countries	0.00	0.00	0.00	0.00	0.00	0.00
12	Exiting Goods	-6.22	5.56	-6.65	6.03	-5.00	3.53
14	Intensive Margin		75.47		80.76		71.81
15	Extensive Margin		24.53		19.24		28.19
Total		-100	100	-100	100	-100	100

Source: Betrán and Huberman (2022)

Note: All trading countries are considered in the calculations of margins.

Table 2. Decomposition of Exports growth in Intensive and Extensive Margins

Exports (nominal values)		1928-1935	%	1928-1931	%	1931-1935	%
			(abs terms)		(abs terms)		(abs terms)
Percent of Growth due to:		-72.97		-54.64		-40.41	
1	Cont. Goods, cont. countries	-94.09	89.39	-94.10	85.58	-91.71	83.30
2	Cont. Goods, new destinations	1.81	1.72	3.43	3.12	4.79	4.35
3	Cont. Goods, all new countries	0.00	0.00	0.00	0.00	0.00	0.00
4	Cont. Goods, old destinations	-7.52	7.15	-10.71	9.74	-11.49	10.44
5	Cont. Goods, all old countries	0.00	0.00	0.00	0.00	0.00	0.00
6	Cont. Goods	-99.80	98.25	-101.38	98.44	-98.41	98.09
7	New Goods, cont. countries	0.70	0.67	1.26	1.14	0.60	0.55
8	New Goods, all new countries	0.00	0.00	0.00	0.00	0.00	0.00
9	Entering Goods	0.70	0.67	1.26	1.14	0.60	0.55
10	Old Goods, cont. countries	-1.13	1.08	-0.46	0.42	-1.50	1.36
11	Old Goods, all old countries	0.00	0.00	0.00	0.00	0.00	0.00
12	Exiting Goods	-1.13	1.08	-0.46	0.42	-1.50	1.36
14	Intensive Margin		89.39		85.58		83.30
15	Extensive Margin		10.61		14.42		16.70
Total		-100	100	-100.58	100	-99.31	100

Source: Own calculations.

Note: Top 10 trading countries and the rest are considered in the calculations of margins. Total percent of contribution are around 100 percent due to rounding errors in calculations.

Table 3. Imports by type of goods: share and growth

	Share of imports	Annual growth %	Growth %	Annual growth %	Growth %
	1928	1928-1931		1931-1935	
Agriculture	23.70	-42.08	-126.23	-7.66	-22.97
Manufactures	44.96	-21.87	-65.61	-5.41	-16.23
Raw materials	31.34	-22.62	-67.86	-9.46	-28.39
Total	100	-30.11	-90.33	-7.30	-21.91
Consumer goods	25.53				
Industrial supplies	58.09				
Capital goods	16.38				
	100				

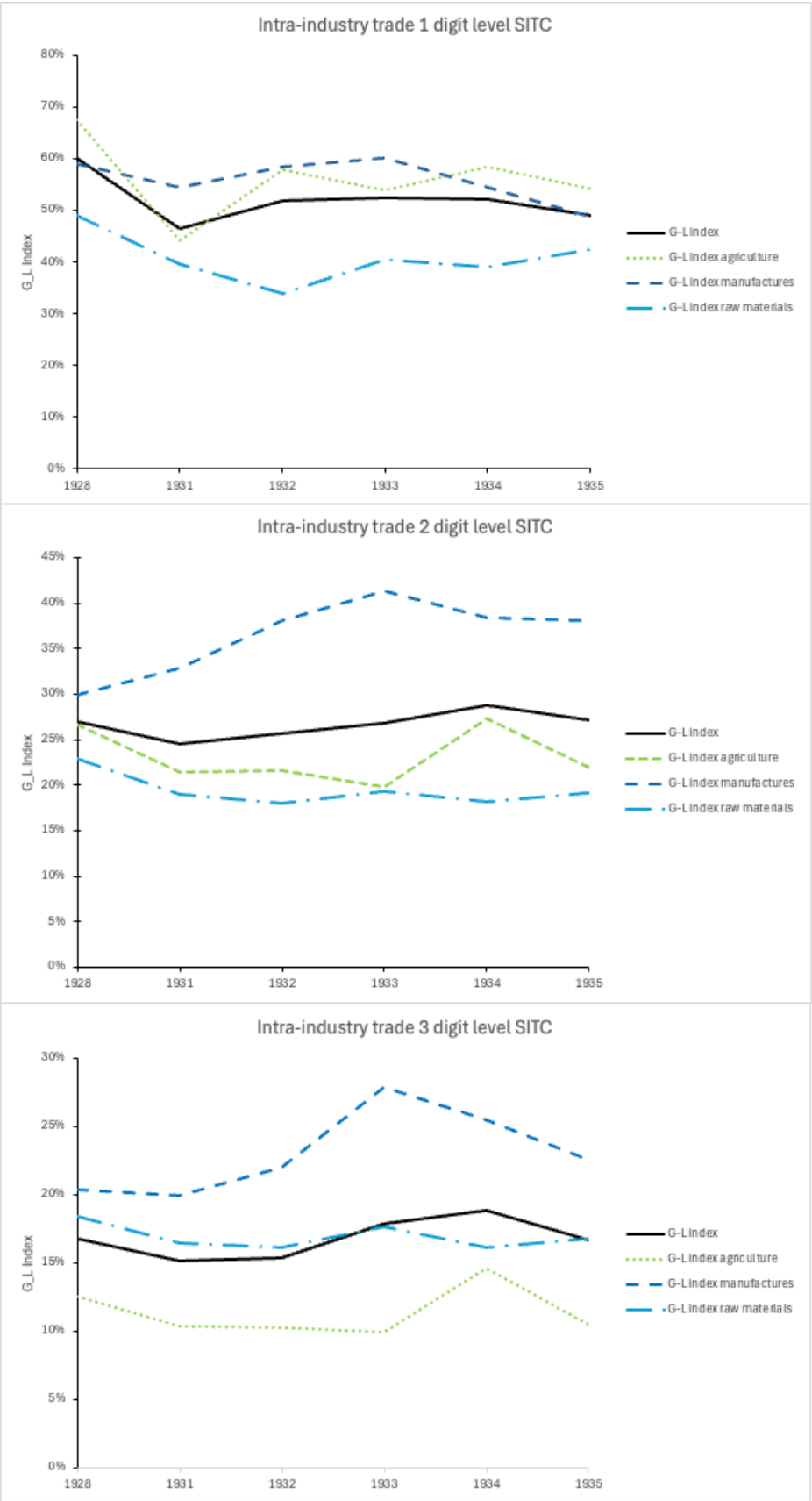
Source: Own calculations. Note: Agriculture (0+1+4), Manufactures (5+6+7+8) and Raw materials (2+3) SITC. Consumers goods include food, feed and beverages. Autos are included in capital goods. Industrial supplies and materials

Table 4. Exports by type of goods: share and growth

	Share of exports	Annual growth %	Growth %	Annual growth %	Growth %
	1928	1928-1931		1931-1935	
Agriculture	61.56	-22.52	-67.57	-14.39	-43.18
Manufactures	24.98	-35.38	-106.15	-9.01	-27.04
Raw materials	13.46	-31.62	-94.87	-7.28	-21.84
Total	100	-26.33	-78.98	-12.36	-37.09
Consumer goods	63.35				
Industrial supplies	36.35				
Capital goods	0.30				
Total	100				

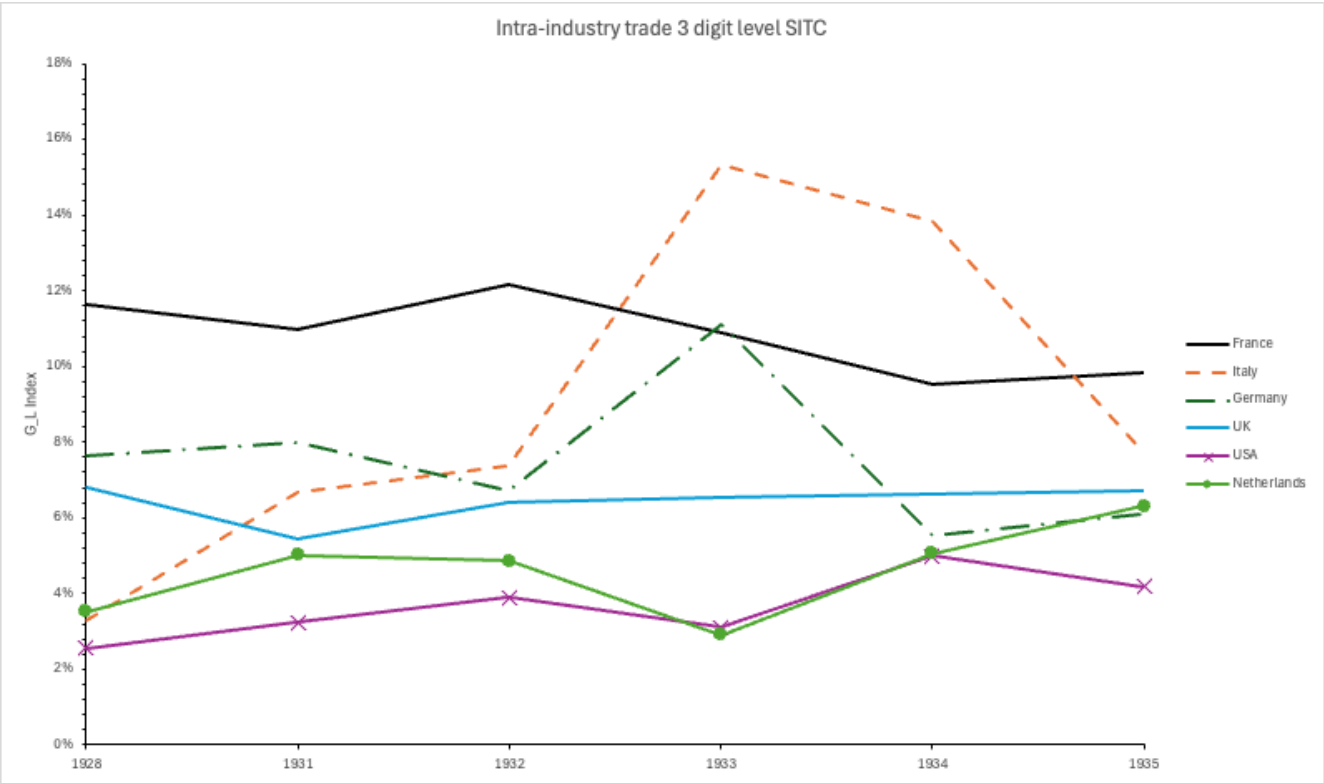
Source: Own calculations. Note: Agriculture (0+1+4), Manufactures (5+6+7+8) and Raw materials (2+3) SITC. Consumers goods include food, feed and beverages. Autos are included in capital goods. Industrial supplies and materials

Figures 10.1, 10.2, 10.3. G-L index of Intra-industry trade at 1, 2, and 3-digit level SITC for total, agriculture, manufactures and raw materials, 1928 and 1931-1935



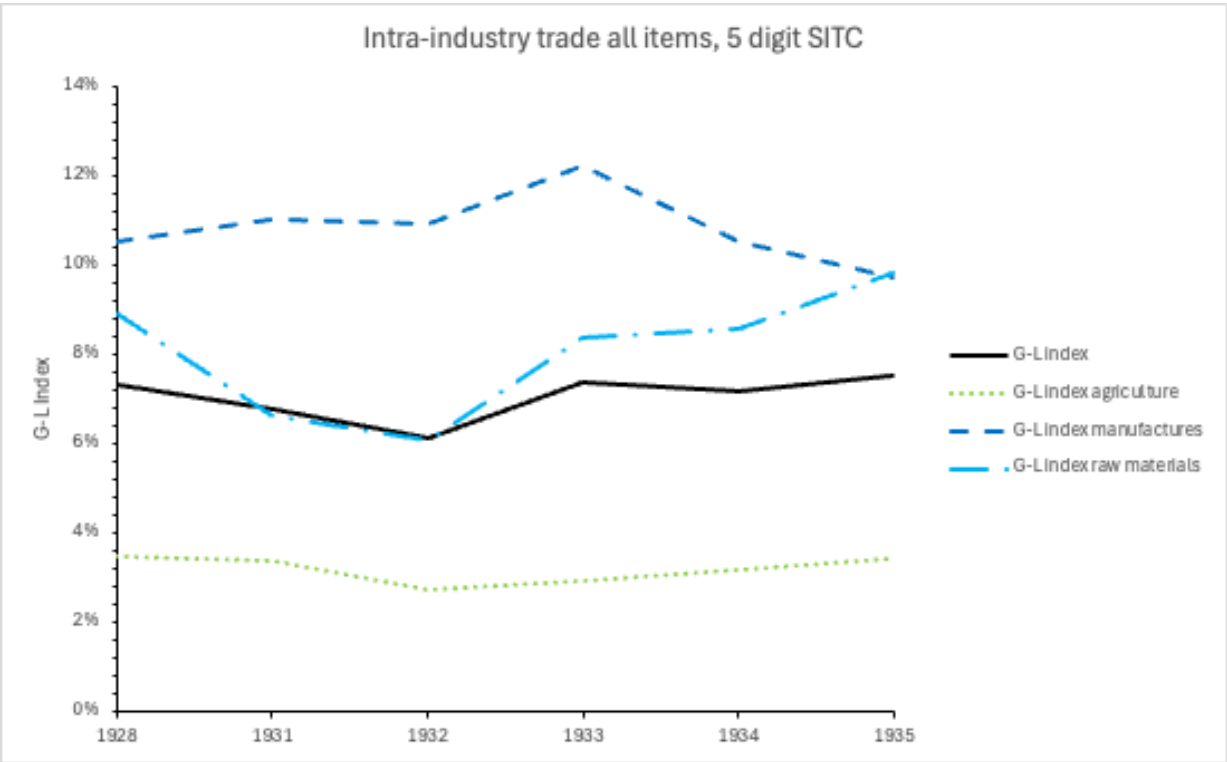
Source: Own calculations.

Figure 11. G-L index of intra-industry trade at 3-digit level SITC by country, 1928 and 1931-1935



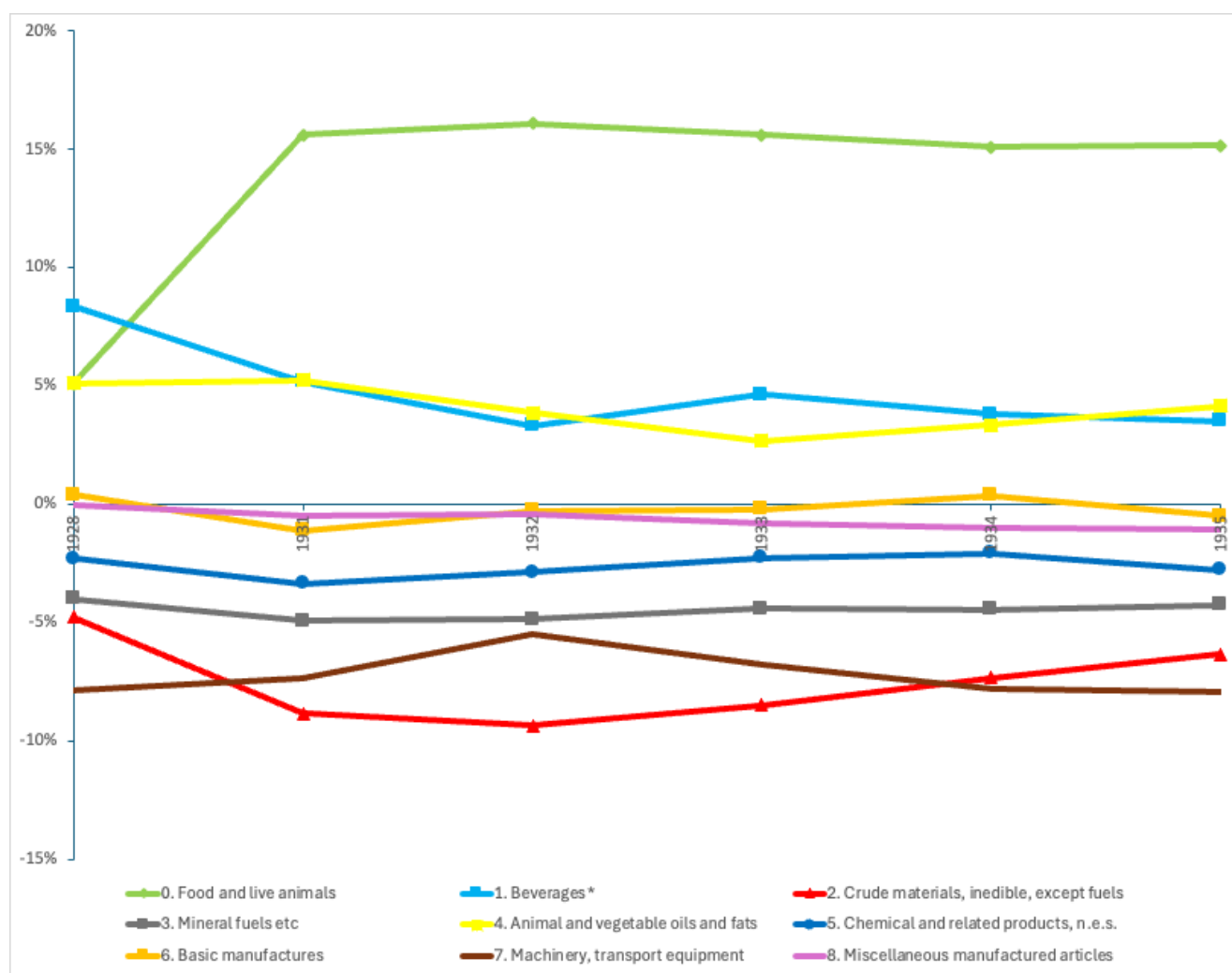
Source: Own calculations.

Figure 12. G-L index of intra-industry trade at 5-digit level SITC, 1928 and 1931-1935



Source: Own calculations.

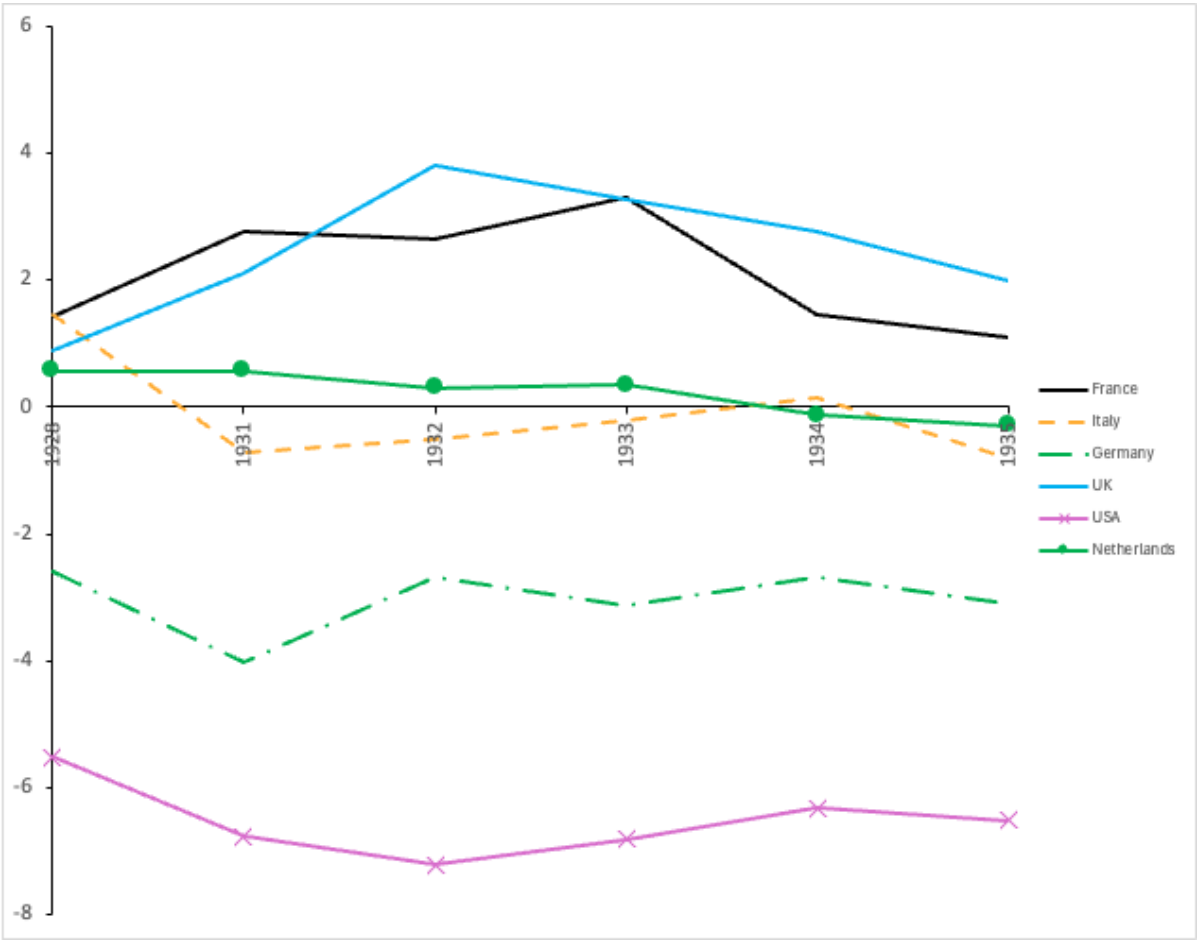
Figure 13. RCA at 1-digit level SITC, 1928 and 1931-1935



Source: Own calculations.

Note: We consider only Beverages*, in the 1-digit level of SITC is Beverages and Tobacco.

Figure 14. RCA by trading countries, 1928 and 1931-1935



Source: Own calculations.

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