NAVIGATING IN TROUBLED WATERS: SOUTH AMERICAN EXPORTS OF FOOD AND AGRICULTURAL PRODUCTS IN THE WORLD MARKET, 1900-1938[1]

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1. Introduction

As is well known, the international economy underwent a series of fundamental shocks in the first half of the XX century, profoundly changing the bases upon which it had developed in the previous century. The early years can be seen as the pinnacle of the first globalization. The First World War was the first important impact, but once ended the desire of the majority of governments was to restore the previously existing system of economic relations. However, the crisis of 1929 and the deep depression encompassing the planet in the 1930s ended this globalization. Consequently, these years are frequently considered to be a deglobalizing interlude, between the two waves of economic integration the international economy has experienced in the last two centuries.

The countries of South America had specialized in the international division of labor generated by the first globalization in the export of primary products, both agricultural and mineral. The weight of such products in their exports was considerable, and at the same time represented a significant percentage of exports in world trade.

The present study offers a new quantitative base to analyze the evolution of exports of agricultural and food products from South America in the complicated period between 1900 and 1938. The data base has been elaborated from the information published by the International Institute of Agriculture (IIA), based in Rome, in those years.

The paper also constructs a terms of trade series for South American agricultural exports, using the data of Grilli-Yang (1988), updated by Pfaffenzeller (2007). It is considered to be the first time of offering for this period a series for the evolution for the terms of trade in the region which takes into account in its construction the relative weight of the exports of the distinct agricultural products. This series permits the analysis of not only the evolution of exports by volume, but also the evaluation of their purchasing power as a consequence of the simultaneous evolution of prices and quantities.

The article continues with a synthetic presentation of the sources used for the construction of the data series. Subsequently, an explanation is provided of the position

of South America in the world market for agricultural products on the eve of the First World War. The following section analyzes first the impact of the war on the volume of agricultural exports from the region and in second place that of the Great Depression. The fifth section explores the evolution of the terms of trade of South American agricultural exports throughout the period analyzed. Finally, some conclusions are presented.

2. Data

The IIA offers information on the trade undertaken, in quantities, for 62 products and for the world as a whole, permitting the construction of an annual index of the volume of global agricultural trade (Aparicio et al., 2009).

This annual series provides information on the evolution of trade worldwide, but does not permit its disaggregation by continents. Such disaggregation has been possible using the five-yearly averages which the IIA has published for the years 1909-13, 1924-28 and 1928-32. For the years 1932-36 the present authors have been able to elaborate another average, based on annual data. The averages of the quantities exchanged of all products have been multiplied by their prices in the year 1925, obtained principally from the same source, to be able to aggregate trade in all products.

In some cases, especially in the first two five-year periods, it has been necessary to perform certain estimations[4]. These five-yearly averages, constructed for each of the 62 products and subsequently grouped according to the SITC 2 classification, permit analysis of the evolution of South American exports between the early years of the XX century and the outbreak of the Second World War.

Additionally, a series has been constructed to measure the evolution of the terms of trade of exports of agricultural products and food from South America with regard to imports of manufactures from industrialized countries. To do this use has been made of the products and price series of Gilli and Yang (1988), which have recently

[4] In the case of the South American region these estimations represent a very small part of its exports of food and agricultural products. These were 4.6% of exports in 1909-13 and 1.1% for 1921-25. For the world as a whole in these years the figures were 6.5% and 3.2% respectively.

been corrected and broadened by Pfaffenzeller (2007). To this end, firstly an annual price series is obtained, weighted by the share of each product in South American exports of the distinct products considered in the Grilli-Yang index in 1924-28. Deflating this series by the prices of the imports of manufactures from the industrialized countries, a regional series for the terms of trade of South American agricultural exports is obtained[5]. It must be underlined that the products included in this series represent an extremely high percentage (88%-92%) of South American agricultural exports in this period. With the aid of the terms of trade series constructed, it is also possible to analyze the evolution of the purchasing power of the exports of agricultural and food trade.

3. South America at the apex of the export model

Since the mid-XIX century the South American republics had tended to insert themselves as exporters of primary products in the international division of labor which took place in the first globalization. European demand for these products, in a context of the reduction of international transport prices and of trade liberalization, generated interesting opportunities to increase exports from those countries specializing in this type of products[6].

To permit the increase of exports from the region, it was first necessary to reorientate land towards crops for which there was demand in the international market or to cultivate new lands (Solbrig, 2006). In some countries, such as Argentina, Uruguay or southwest Brazil the vast existing plains (the pampa), used until then by the indigenous populations, had first to be conquered. Subsequently, there commenced a formidable process of agricultural frontier expansion similar to that which occurred in other countries such as the United States, Canada or Australia (Cortés Conde, 1992; Barksy and Gelman, 2001; Adelman, 1994; Gerchunoff and Llach, 2011).

[5] Alternatively, the prices of the distinct products have been weighted by their weight in the exports of food and agricultural products from South America in 1934-38. The change of weighting affects very little the evolution of the terms of trade after 1924, although somewhat more in the preceding years. In this case, compared to the stability observed in the terms of trade between 1909-13 and 1924-28, the use of the weightings for 1934-38 shows a slight improvement in them between the two dates. The alternative series are available on request.

[6] Williamson (2006) and (2011) have shown that the improvement in the terms of trade of the poor peripheral countries had in the long term a negative impact, as it encouraged their deindustrialization.

Between 1850 and 1914 exports from the Latin American countries increased at an impressive annual rate of 3.5% (Bértola and Williamson, 2006: 28). The most successful cases for the economic development of this type of specialization were the countries recently colonized by European ones (settler countries). They include Argentina and Uruguay, which undertook in this period an intense process of territorial colonization and expansion of their exports[7]. An abundant provision of land capable of being destined to agricultural production, characteristic of temperate zones, a significant supply of workers proceeding from Europe and a considerable entry of foreign capital facilitated and stimulated this process of export-led growth.

The remaining countries of South America also oriented their economies in this same direction, although the results, except in the case of Chile, were much more modest. Thus, exports per capita from Argentina and Uruguay reached, between 1870 and 1912, levels situated between Canada and Australia, and those of Chile were close, while those of Bolivia, Brazil, Colombia, Ecuador, Paraguay, Peru and Venezuela were considerably lower (Bulmer-Thomas, 1994: 69). The degree of openness of these countries was high. The data of Maddison (2001: 194 and 362) show that the ratio of exports to GDP in 1870 in South America was higher than that of any other world region, although by 1913 it had been overtaken by Western Europe and Africa. Nevertheless, its weight in world trade was small, constituting 5.3% in 1870 and 5.1% in 1913.

South American exports displayed a marked specialization in primary products and within these in food and agricultural products. Thus, of the ten republics which were independent in 1913, in seven the principal export product was agricultural. The concentration of exports in few products was also very high. The two principal export products of all the South American republics, which were always agricultural or mineral products constituted between 40% and 80% of the total exports of each country (Bulmer-Thomas, 1994: 59).

[7] The average annual compound rate of merchandise export growth of Argentina between 1870 and 1913 was 5.2%. The median of the seven biggest economies of Latin America was 3.4% (Salvucci, 2006: 253). In 1913 Argentina and Uruguay had by far the highest exports per capita of Latin America (Bulmer-Thomas, 1994: 153).

Table 1 shows that on the eve of the First World War South America had a very significant weight in world trade in food and agricultural products, since it represented 11.9% of the world total. This prominent position in the international market had been achieved thanks to the strong growth of agricultural production in the preceding decades. The increase in the agricultural output of South America between 1870 and 1913 far outweighed that of the world as a whole and that of any of its regions[8]. Its export orientation is yet clearer if it is borne in mind that its population in 1913 was only 3.1% of that of the world (Yañez et al., 2012).

TABLE 1. WORLD TRADE OF AGRICULTURAL AND FOOD PRODUCTS, 1900-1938
(exports at 1925 prices) (in thousands of USA dollars)

	1909-1913	1924-1928	1928-1932	1934-1938
Europe	3,789,263	3,022,291	3,148,480	2,404,098
North&Central America	2,212,979	3,465,133	3,015,602	2,270,044
South America	1,279,080	1,892,682	1,923,663	1,949,332
Asia	2,165,643	3,789,232	4,309,819	4,561,385
Africa	557,984	845,541	991,661	1,204,673
Oceania	710,481	975,629	1,161,833	1,325,994
World	10,715,430	13,990,508	14,551,057	13,715,526

Source: Own calculation based on IIA, 1910-39.

South American agricultural exports were sharply concentrated on food, as compared to raw materials (Table 2). Thus, while in the the world there existed a greater balance between exports of food and agricultural raw materials, in South America the former represented 70% of its exports in 1909-13.

[8] In this period, the rate of growth of agricultural value added of South America was 4.86% annually, while world growth was 1.48%. All other regions had rates between 0.9% and 2.09% (Federico. 2004: 132).

TABLE 2. BREAKDOWN OF TRADE IN AGRICULTURAL AND FOOD PRODUCTS, 1900-1938
(exports at 1925 prices) (thousand USA dollars)

SITC 2		1909-1913	1924-1928	1928-1932	1934-1938
	WORLD				
0	Food and live animals chiefly for food	5,818,346	7,799,675	8,018,215	7,172,216
01	Live animals	111,921	406,920	398,129	335,351
02	Meat and meat preparations	465,162	791,741	752,723	643,603
03	Dairy products and eggs	633,243	880,568	949,422	887,761
04	Cereals and cereal preparations	2,326,187	2,411,797	2,459,960	2,030,145
05	Vegetables and fruit	491,129	701,915	747,290	739,736
06	Sugar, sugar preparations and honey	953,671	1,589,329	1,628,692	1,396,045
07	Coffee, tea, cocoa, spices & manufactures thereof	837,033	1,017,405	1,081,999	1,139,575
1	Beverages and tobacco	282,252	387,355	415,155	371,895
11	Beverages	104,156	113,965	126,510	121,057
12	Tobacco and tobacco manufactures	178,097	273,390	288,645	250,839
2	Crude materials, inedible, except fuels	4,447,175	5,539,902	5,816,024	5,862,661
22	Oil seeds and oleaginous fruit	496,604	657,271	735,832	760,988
23	Crude rubber	268,653	1,072,837	1,283,161	1,525,212
26	Textile fibres (not wool tops) and their wastes (not in yarn)	3,681,917	3,809,794	3,797,032	3,576,461
4	Animal and vegetable oils, fats and waxes	167,656	263,577	301,663	308,754
42	Fixed vegetable oils and fats	167,656	263,577	301,663	308,754
	TOTAL	10,715,430	13,990,508	14,551,057	13,715,526
	SOUTH AMERICA				
0	Food and live animals chiefly for food	889,243	1,434,268	1,447,057	1,387,903
01	Live animals	8,308	42,021	26,871	22,024
02	Meat and meat preparations	136,906	302,726	244,720	212,836
03	Dairy products and eggs	3,421	22,297	19,284	11,172
04	Cereals and cereal preparations	307,638	507,960	577,425	513,653
05	Vegetables and fruit	40,253	63,791	42,146	58,817
06	Sugar, sugar preparations and honey	37,779	62,269	73,997	81,241
07	Coffee, tea, cocoa, spices & manufactures thereof	354,937	433,204	462,614	488,162
1	Beverages and tobacco	11,241	17,435	18,534	18,482
11	Beverages	19	208	346	593
12	Tobacco and tobacco manufactures	11,222	17,227	18,188	17,889
2	Crude materials, inedible, except fuels	378,537	439,887	457,509	539,410
22	Oil seeds and oleaginous fruit	64,246	140,613	156,571	151,647
23	Crude rubber	56,030	34,047	21,834	18,750
26	Textile fibres (not wool tops) and their wastes (not in yarn)	258,261	265,227	279,104	369,013
4	Animal and vegetable oils, fats and waxes	59	1,092	562	3,536
42	Fixed vegetable oils and fats	59	1,092	562	3,536
	TOTAL	1,279,080	1,892,682	1,923,663	1,949,332

Source: Own calculation based on IIA, 1910-39.

The composition of its exports displays two very different types of specialization, well represented by two countries of enormous weight in this region, namely Argentina and Brazil. Argentina, and other territories surrounding the Río de la Plata, such as Uruguay, or the southwest of Brazil itself (the Brazilian Pampa), had specialized in the production and export of products characteristic of the agriculture of temperate zones. Thus, cereals, meat and wool were of enormous importance in the agricultural production of this region of South America. In turn, in the tropical regions , the star product was coffee, in which Brazil was traditionally specialized and in whose production other countries, especially Colombia, had come to participate.

Consequently, the principal agricultural products of the temperate zones, such as cereals, meat and wool constituted a very high percentage of South American exports, which in 1909-13 were approximately 55% of the total of agricultural and food exports. Coffee, cacao and sugar accounted for somewhat more than 30% of these exports. In reality, exports were highly concentrated on a very limited number of products. Only five products, which in order of importance were coffee, wool, wheat, maize and beef, constituted in those years 76% of the agricultural exports of South America (Table 2). Logically, for those products the exports from this region achieved very high percentages of world totals, as in the case of coffee, beef, wool and maize (see Table 3). For other products which represented a lower percentage of exports, the region was very strongly positioned in the world market; this was the case of lamb, bananas, cacao, linseed or rubber.

TABLE 3. TOP FIVE AGRICULTURAL EXPORTS FROM SOUTH AMERICA
(exports at 1925 prices) (in thousands of USA dollars)

SITC 2 Codes		1909-13	1924-28	1928-32	1934-38
0111	Bovine meat, fresh, chilled or frozen	112,630	266,842	207,269	184,214
041/046	Wheat	162,164	251,566	269,813	206,950
044	Maize	120,619	222,452	270,543	269,161
071	Coffee	334,958	407,518	436,996	457,401
268	Wool and other animal hair	239,103	225,400	229,608	211,955
% of total S.American agricultural exports		75.8	72.6	73.5	68.2

Source: Own calculation based on IIA, 1910-39.

4. The impact of the First World War and the Great Depression on the volume of South American agricultural and food exports

4.1. The First World War and the 1920s

The outbreak of the First World War in 1914 marked the beginning of the end of the system of international economic relations which had been articulated throughout the XIX century (O'Rourke and Williamson, 1999). As various studies have shown, in this period it is possible to talk of a deglobalization of the international economy, which was profoundly affected by the war and its consequences and above all by the crisis of 1929, the subsequent depression and the economic policy measures adopted by different governments in those years (Hynes et al., 2012).

Some studies have approached the war and the immediately subsequent years as merely a pause in globalization, basing themselves for example on the ratios of world trade to world output for certain benchmark years (e.g. 1913 and 1934). However, the continuous series for this ratio underline that the degree of integration of the international economy prior to the war had not by any means reached the pre-war level prior to 1929, at least in trade in goods (Pinilla and Ayuda, 2010: 245; Flandreau et al., 2010: 100).

Thus, the war seriously affected international exchanges and, logically, most particularly the countries most dependent on trade, such as the South American economies, whose growth was driven by exports. The submarine war and the shortage of ships increased transport costs. Furthermore, there were conjunctural changes in the demand for products, depending on their interest for the countries at war. The shortage of capital was an added problem (Albert, 1988: 55-121).

The volume of international trade in food and agricultural products declined from the maximum reached in 1913 until the minimum of 1918, which was only 56% of the former (Aparicio et al., 2009: 69-70). The prewar level was not to be reached until 1925. As is logical, the impact of the war was highly varied in the diverse regions of the world; it was greater in the zones directly affected by the conflict and less important in the countries furthest removed from the theatre of operations.

South America showed the vulnerability of an economy open to the destabilization of international economic relations, its exports falling initially.

Nevertheless, the importance of some of its products for the Allied countries meant that they tended to recover their previous levels immediately. Thus, countries such as Chile or Peru ended the war with a volume of exports higher than that of 1913, while those of Argentina or Brazil oscillated notably and behaved worse (Albert, 1988: 56-61).

The end of the war marked an apparent return to normality, although the international economy had changed considerably. Instability in Europe, monetary problems and economic difficulties in some countries cast doubts over the possibilities of the agroexporting model. Additionally, the shift of economic hegemony from the United Kingdom to the United States had important consequences for the South American countries, whose trade was strongly linked to Europe and especially to the United Kingdom. The new power was less dependent on certain imports than the United Kingdom, and was in fact an important competitor in the international market for some products proceeding from the temperate zones of South America.

Despite all the above, the agroexporting model was not yet seriously questioned in South America, and in fact the First World War reinforced the central role of primary exports. In terms of the volume of exports, the conflict was the culmination of the agroexporting model, as shown in Table 1 and indicated by various authors (Díaz Alejandro, 1984).

Nevertheless, the new scenario was to be complicated, not only for the reasons above, but also due to a much slower increase in the demand for many primary products. A high level of income per capita in many importing European countries already implied a less than proportional growth in demand[9] (Malenbaum, 1953). Population growth weakened due to the advanced state of the demographic transition in the most developed countries. In turn, there began to appear synthetic products which weakened demand still further and increased concurrence in the market. Additionally, supply increased quickly, driven partly by certain technological innovations and by the opportunities which had existed until then, making many countries decide to attempt to increase their exports to take advantage of them.

[9] In the case of wheat, per capita consumption for human ends fell for example by 8% in 19 importing European countries between 1910 and 1935. Among the large exporters (Argentina, Australia, Canada and the USA), the fall in the same period was 33%. In the world as a whole, excluding China, the reduction was 4% (Hevesy, 1940: 770-771).

The volume of world trade in food and agricultural products following the war made a rapid recovery. This process commenced in 1919 and by 1925 trade was once again at 1913 levels. After 1925 growth was very rapid, such that in 1929 it reached a maximum which would not be recovered until years after the Second World War (Aparicio et al. 2009: 69-70).

In this complex context, the response of the South American countries was to intensify their agroexporting specialization. The success of this strategy, in terms of increasing their volume of trade, was considerable. Comparing the increase in the volume of agricultural trade between 1909-13 and 1924-28 (Table 1), South America is notable as one of the world regions in which this grew most, although less than in Asia, Africa and North and Central America. As a result, its participation in world agricultural trade increased until it constituted 13.5%.

The sharp rise in the volume of agricultural exports throughout the 1920s was based above all on a formidable expansion of the exports in which South America was most specialized, namely food. It is important to emphasize that the improvement of these exports took place in both the food characteristic of the agriculture of temperate zones and in that of tropical zones.

In the first case, the most notable aspect was the increase in the exports of meat, which far outweighed the prewar level. Particularly important within meat was beef, especially frozen beef from the Río de la Plata, which was behind this expansion. As a consequence, South America achieved almost a monopoly in world markets, constituting 75% of its trade (Argentina by itself represented 58% and Uruguay 11%). The increase in the exports of beef took advantage of a drastic change in the international meat trade as a consequence of the adoption of meat-freezing technologies for transport. The availability of such technologies led the United Kingdom to prohibit in 1892 (Diseases of Animal Act) the import of live cattle from the European continent, benefiting South American exports[10]. A new technology, the chilling of meat instead of freezing, stimulated still further South American exports, due to the preference of British consumers for this type of meat (Empire Marketing Board, 1932:14).

[10] The first load of frozen meat occurred between the USA and the UK in 1874 (Bacon and Schloemer, 1940: 180).

Furthermore, the increase of per capita income in the industrialized countries led to a sharp increase in the demand for meat. It has also been indicated that the effects of the war upon cattle herds in countries such as Germany and France stimulated the meat trade, as did a trade policy of low tariffs until 1925 (Bacon and Schloemer, 1940: 183). Between 1909-13 and 1924-28, world trade in meat doubled in volume. The increase in South American exports was even greater, meaning that it was not only capable of maintaining its advantageous position in the market, but even of strengthening it. Thus, from constituting 29% of world trade in meat in the first period, it came to represent 38% in the second.

Results in cereal exports were also important. Exports of wheat and maize increased spectacularly, reaching in the latter case an extremely high proportion of world trade (63% en 1924-28).

In the case of wheat, Argentina took advantage of the withdrawal of the new Soviet state as an exporter after 1917, which seriously affected the world market, since the former Imperial Russia had in 1909-13 a share of 20% of world exports, while in the 1930s this figure was less than 5%. Following the First World War, the countries of the Danube basin, which were also important exporters, accounting for 15% of world exports in 1909-13, reduced to approximately half their quota of exports, as a consequence of the agricultural reforms undertaken in many of them, meaning the fragmentation of large farms, changes in the uses of land and an increase of domestic consumption due to rising per capita income (Taylor, 1928)[11]. Argentina took advantage of the withdrawal from the international market of these large exporters and succeeding in substantially increasing its wheat exports. While in 1909-13 it accounted for 12% of world exports, in 1928-32 this figure reached 19%. Its experience was not exceptional; other countries such as Canada, Australia or the United States also benefited from the new postwar situation and considerably increased their exports.

The expansion of maize exports resulted principally from the need for cattle feed. The South American quota rose above all as a consequence of the growth of the land cultivated for maize, from the early 1920s onwards. The richness of natural

[11] For example, in Romania the land area dedicated to wheat was reduced by a million hectares (Imperial Economic Committee, 1932: 37).

pasturelands in the country meant that its domestic consumption was very low and that the favored orientation of production was towards exports. The Argentine quota increased prodigiously, rising from 41% of world exports in 1909-13 to 68% in 1928-32. Paradoxically, South America never constituted more than 15% of world production.

Elsewhere, tropical agriculture, which was already highly specialized in coffee, achieved a substantial increase in exports, for which the South American quota of the world market was 72% in 1924-28. This market share was a very good reflection of the weight of South America in the world production of coffee, which throughout the first third of the XX century oscillated between 73% and 79%. Brazil was the largest producer, at around 60% of the world total, while Colombia in 1909-13 accounted for less than 4%, reaching over 10% at the end of the 1930s (I.I.A., 1910-1939).

The increase in the exports of coffee benefited from the substantial increase in consumption in the first third of the XX century; this was approximately 36% in absolute terms. The largest part of this increase was a consequence of the increase in consumption in the United States, which almost doubled (by 77%), while the rise in the principal importing region, Europe, was very small (only 5%) (Commodity Research Bureau, 1939: 315). The significant improvement in North American incomes accounted for a substantial increase in the consumption of coffee, especially to the detriment of tea. Consumption was also fairly elastic with regard to price. The price falls of the 1930s facilitated an additional increase in consumption (Wickizer, 1943: 51-53). Not only did consumption increase, but also tastes in the type of coffee preferred changed. Especially in the country responsible for the greatest increase in consumption, the United States, milder coffees from Colombia were favored, causing the Brazilian quota of world exports to fall substantially, dropping from 60% prior to the First World War to approximately 50% in the 1930s. This decline was also influenced by Brazilian public policies of restricting supply. By contrast, Colombia, whose share of world coffee exports was less than 4% in 1909-13, accounted for almost 14% in 1934-38 (IIA, 1910-39).

Although these were the most dynamic products, in general exports of the remaining agricultural products behaved quite well, which helps to explain the substantial expansion of South American exports.

Bulmer-Thomas (1994: 165-165) has indicated that these countries followed two alternative strategies in those years to expand their exports. The more successful consisted of attempting to increase their share of products whose demand was increasing slowly. Some of the most important products in South American exports, already examined here, such as meat, cereals or coffee, can be included in this category.

The alternative was to depend on the commodity lottery and increase exports by exploiting a strong increase in demand. However, for some of the products which were favored by this strategy, the results for South America were weak (like cacao, bananas and sugar) or very poor (especially rubber). In the cases with weak results, African plantations successfully competed with those of countries such as Brazil, Ecuador or Venezuela, while those of the Caribbean also provided strong competition in sugar or bananas. Results were very poor in the case of rubber, since Asian plantations benefited from an increase in world trade of approximately 400%, which raised the figure of participation in its trade from 2.5% in 1909-13 to 7.7% en 1924-28. In contrast, rubber exports from the Amazon region commenced a decline which would extend until the years of the Second World War.

4.2. The crisis of 1929 and the depression of the 1930s

The Great Depression which began in 1929 was a tremendous external shock for South America, the countries of the region having no capacity to control it. It seriously affected world trade, both volume and prices falling. Furthermore, the terms of trade for the exporters of primary products suffered an enormous deterioration (Ocampo and Parra, 2010). This decline has been signaled as the principal line of transmission of the crisis of 1929 to Latin America (Díaz Alejandro, 1984). However, one of the principal sources of recovery in South America, following the worst years of the depression, was the promotion of exports, which recovered from 1931 on. Many governments took active measures to try to ensure the survival of the export sector; some of these were devaluation, the creation of new financial institutions to avoid problems of credit for exporting companies, a moratorium on external debt, the destruction of harvests to maintain prices in the case of coffee in Brazil, or the establishment of multiple exchange rates (Paiva Abreu, 2006: 106-118).

This said, the new scenario was marked not only by declining incomes and the difficulty this caused for world trade, but above all by the deliberate attack on the

mechanisms which had facilitated the integration of the international economy since the first third of the XIX century. The end of the first globalization was definitive from 1929 onwards (Hynes et al, 2012). The agroexporting countries were in this way affected both by the crisis and by the measures taken to limit exchanges and protect national economies. Their impact could however be highly diverse, depending not only on the type of products in which each country was specialized but also on the policies which their trade partners practiced. For some South American countries such as Argentina, the establishment by Great Britain of the system of imperial preferences in 1932 caused great damage, partially mitigated by the Roca-Runciman agreement of 1933 (Paiva Abreu, 1988: 183-185)[12].

Given this context, the evolution of the volume of agricultural exports from South America was not poor. Against the fall in the volume of world trade in agricultural products, South America achieved a slight increase, permitting its quota to reach what had been its historic maximum, 14.2% (Table 1). In general, the most developed regions of the world, such as Europe and North and Central America suffered a collapse of their agricultural exports. At the same time, a slight increase in such exports in Asia or South America or a stronger increase in Africa and Oceania, improved the percentage shares of these regions.

The success of the most dynamic regions was based, in the case of Africa, on a improvement in almost all its agricultural exports. This was partly due to advances in the progressive orientation of tropical agriculture towards exports, once there had formed specializations induced by the penetration of European colonization and the start of exploitation of plantations so oriented. Additionally, in North Africa, the French colonies reinforced their exports towards the metropolis, achieving good results, which were, for example, exceptional in the case of wine, Algeria becoming the principal worldwide exporter by volume (Pinilla and Ayuda, 2002).

In Oceania, and principally Australia, the improvement was also generalized in both more traditional exports such as wool and in those which since the beginning of the XX century were clearly expanding, such as dairy products, sugar or meat. The

[12] Argentine was also negatively affected by the real exchange rate of the peso against the pound sterling (Bulmer-Thomas, 1994: 218).

privileged connection of Australia and New Zealand with Great Britain, stimulated by and benefiting from the system of imperial preferences instigated following the Ottowa Conference of 1932, helps to understand these positive results.

Results in Asia, similar in their growth of exports during the 1930s, are explained by the formidable progress in almost a single product, namely rubber. The expansion of the volume of exports of this product was greater than that of the volume of total exports, thereby compensating for the decline of some.

The evolution of the volume of South American agricultural exports varied greatly during the depression. In general, the principal agricultural exports from the temperate zones of South America fell significantly or moderately. Especially important was the reduction of exports of beef or wheat, while the decrease in those of maize, linseed or wool was much more moderate.

For some products, such as wheat, the new framework of trade relations seriously affected export possibilities. The highly protectionist policies of large European importers such as France, Italy or Germany impacted strongly. British policy also damaged exports from countries such as Argentina, which between 1928-32 and 1934-38 reduced its exports of wheat by a million metric tonnes. This is not surprising, as in the same period European imports of wheat fell by five million tonnes.

Maize, however, benefited from less restrictive trade policies, since some countries found insufficient national alternatives to replace imports of this product, essential to feed its cattle herds[13].

Exports of meat contracted sharply, decreasing by almost a third. In this case the decrease was notably greater than that of world trade in meat. This means that a part of the reduction in the volume of exports is explained by falling incomes, which substantially affected a foodstuff with high income elasticity[14], but the remainder was due to the protectionist policies implemented; these meant a fall in meat imports, while

[13] Great Britain maintained imports of maize free of tariffs, in contrast to its policy with regard to other cereals (Imperial Economic Committee, 1939: 78).

[14] The consumption of meat in Europe fell during the worst years of the crisis but recovered from 1933 onwards (IIA, 1936: 214-321).

the national production of European countries increased significantly[15]. Particularly important was the system of imperial preference implemented by Great Britain; this significantly encouraged imports of meat from Australia and New Zealand.

The behavior of the volume of the exports of tropical products was considerably better. Exports of coffee, the principal such item, increased still further throughout the 1930s. Furthermore, products which previously were of little importance among South American exports occasionally increased sharply. This was the case, for example, of exports of cotton, which more than tripled during the depression, or those of oranges, which from being insignificant came to represent 10% of their world trade, thanks to Brazil's success in this product (Pinilla and Ayuda, 2009: 200-201). Additionally, increases in the exports of sugar, cacao or tobacco helped tropical agriculture, which nevertheless fell significantly in the case of the export of bananas and rubber.

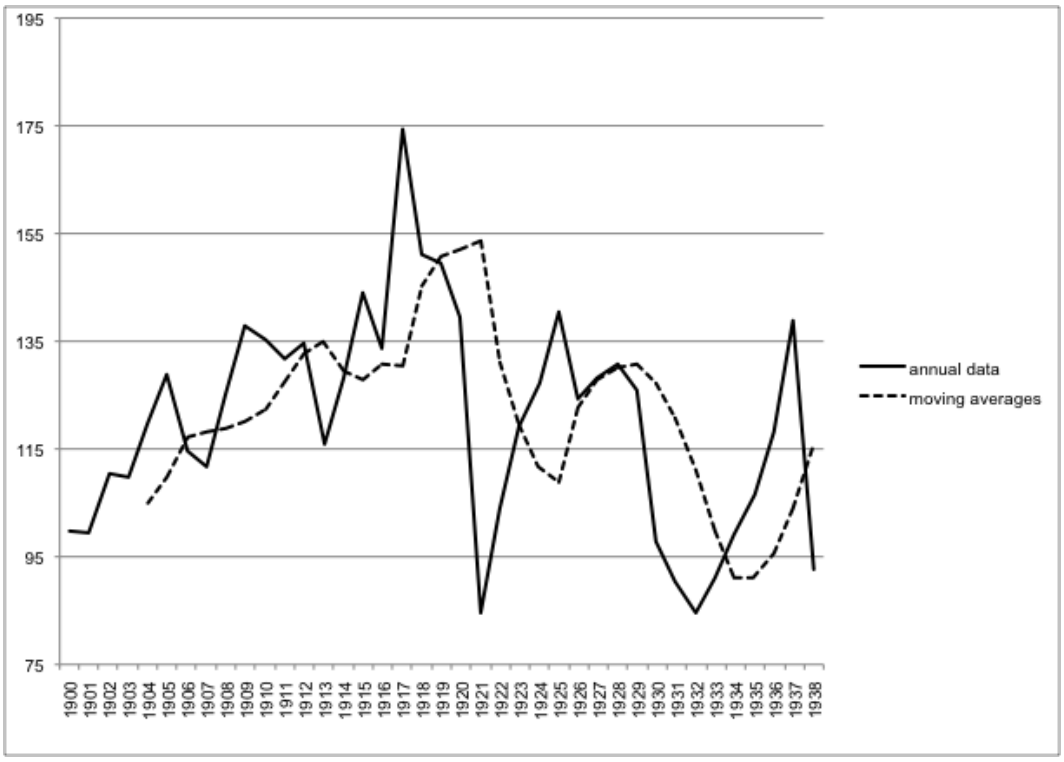
5. The dynamics of the terms of trade of agricultural products and their impact on the purchasing power of South American agricultural and food exports

The first decade of the XX century was to mark the end of an extended period which, beginning at the end of the XVIII century, had signified a clear improvement in the terms of trade for the least developed periphery of the world. Williamson (2008) has signaled that for the Latin American countries, this boom would have been much more modest but more prolonged, since its crowning point would have been reached in 1895. Between 1895 and 1900 there was a significant fall in these terms of trade in Latin America, without the subsequent rises which took place until the First World War and permitted the maximum of 1895 to be recovered (Bértola and Williamson, 2006: 33).

Graph 1 depicts the improvement produced in the terms of trade of agricultural exports following the final quinquennium of the XIX century. This improvement was extended until the First World War in the case of the agricultural exports of the countries of South America. The conflict meant an even greater improvement as a consequence of the needs of the warring countries to import food or agricultural raw materials.

[15] With regard to the total supply of meat, domestic production rose in Great Britain from 41% in 1924 to 47% in 1934. In Germany national production increased from 90% to 99% and in France the figure rose from 90% to 97%. (IIA, 1936: 206-275).

FIGURE 1. SOUTH AMERICAN TERMS OF TRADE FOR AGRICULTURAL AND FOOD PRODUCTS (1900=100)



Source: Own calculation based on Pfaffenzeller et al. (2007) and IIA (1910-39)

The end of the war involved a sharp fall, although the subsequent recovery maintained the terms of trade at levels markedly above those of the beginning of the XX century but clearly lower than the maximums reached previously. From 1925 onwards, the terms of trade tended to decline, although moderately. This worsening demonstrate problems of oversupply in the markets for certain agricultural products, as a consequence of both the slow increase in demand and the rapid increase in supply. Products whose demand growth was lower, due to their low income elasticity or the existence of synthetic substitutes were especially affected. Similarly, products most subject to the increasing European protectionism or to a very rapid growth in supply due to technological progress were also strongly harmed.

However, the crisis of 1929 rapidly worsened the terms of trade for South American agricultural exports, as happened on an international scale with the terms of

trade for primary products compared to manufactures (Ocampo and Parra, 2010). Although throughout the decade a slight improvement situated the terms of trade at a similar level to that of the beginning of the century, the fall in relation to the prewar maximum was notable. If comparison is made of the terms of trade in the years for which export averages are available, a stable trend can be observed between 1909-13 and 1924-28, followed by a significant subsequent fall, which by the end of the 1930s was approximately 15% (Table 4).

TABLE 4. TERMS OF TRADE FOR AGRICULTURAL AND FOOD PRODUCTS,
1900-1938 (1924-28= 100)

	1909-13	1924-28	1928-32	1934-38
Europe	135	100	69	77
North&Central America	108	100	74	77
South America	101	100	81	85
Asia	198	100	54	59
Africa	98	100	75	78
Oceania	84	100	76	85

Source: Own calculation based on Pfaffenzeller et al. (2007) and IIA (1910-39). We have used the Grilli-Yang prices deflated by an index of manufactured imported from industrialized countries. For each region, the index has been built taking into account the relative weight of each product on its agricultural exports in the years 1924-28.

Obviously, the behavior of the nominal prices of the distinct agricultural products was highly varied, meaning that the impact on the terms of trade of agricultural export products in the distinct countries varied depending on the composition of their exports (Table 2).

Meats were the products which behaved best, with regard to both the minimum of 1930-31 and the prewar maximum or the figure at the start of the century. In the British market, the world's principal importer of meat, the nominal wholesale prices of beef fell significantly, but by notably less than the general price index. Consequently, its real prices had increased substantially since the onset of the crisis, both in the case of British beef (by 18% for top quality British beef in 1933 with regard to 1928, or by 27% for top quality chilled Argentine beef) (Imperial Economic Committee, 1934: 310).

For the remaining products crucial to South American agricultural exports, cereal prices behaved with moderation, while coffee fell substantially with respect to the prewar maximum, although in relation to the beginning of the century its behavior was better. The evolution of coffee prices responded not only to the dynamics of the market but also to the intervention from 1906 onwards of the Brazilian government and that of the state of Sao Paulo, employing policies of "valuation" which took advantage of its almost monopolistic position in the international market in an attempt to maintain prices, storing the product when prices fell. This explains the high coffee prices in the 1920s, and when these policies were ended in 1929, prices plummeted yet further. The exceptional harvests in the early 1930s and the collapse of prices obliged the Brazilian government to go so far as to destroy surplus harvest to avoid a total disintegration of prices, in addition to implementing other policies aimed at limiting supply (Bacon and Scholomer, 1949)[16].

As a result of this evolution of the terms of trade, the purchasing power of the agricultural exports of South America underwent a notable increase until the onset of the crisis of 1929. This was a consequence of the considerable expansion of the volume of exports, while prices remained relatively stable (Table 5). The crisis having begun, the fall was considerable, since the slight increase in export volume far from compensated for the deterioration in the terms of trade.

TABLE 5. PURCHASING POWER OF AGRICULTURAL AND FOOD EXPORTS, 1900-1938

	1909-13	1924-28	1928-32	1934-38
Europe	169	100	72	61
North&Central America	69	100	65	50
South America	68	100	83	88
Asia	113	100	62	71
Africa	65	100	88	111
Oceania	61	100	91	115

Source: Tables 1 and 4.

[16] These policies enormously benefited the principal competing country, Colombia, as they maintained prices high in the 1920s and avoided a total collapse in the 1930s (Ocampo, 1988).

Despite everything, it may be said from an international perspective that this evolution was not excessively negative. Taking into account the level of the terms of trade in the years 1924-28, those of the agricultural exports of South America fell least (together with those of Oceania). It may therefore be concluded that the purchasing power of South American agricultural exports, despite slipping significantly as a consequence of the crisis, fell less than the majority of the remaining exporters of primary products. Obviously, the results were better for countries such as Argentina or Uruguay, with a significant concentration on the export of beef (and cereals), than Brazil, strongly specialized in the export of coffee.

In summary, and as Díaz Alejandro (1988) has already signaled, for South American exporters during the recession the deterioration in the terms of trade was worse than the fall in volume, since the latter was recovered during the thirties. Price falls did not mean a reduction in the volume of exports, but instead deliberate attempts to increase exports to compensate for such falls.

6. Conclusions

On the eve of the First World War, the South American countries represented a very significant part of international trade in agricultural products. The expansion of their exports in the preceding decades was based on a formidable shifting of their frontiers, colonizing land till then uncultivated and used by the original populations of the subcontinent. The arrival of emigrants and capital from Europe radically transformed the economies of the southern cone of South America, while their impact was far lesser in countries such as Venezuela, Peru, Colombia, Ecuador or a large part of Brazil. In general, by 1914 export-led growth had generated an important process of economic development, above all in Argentina and Uruguay.

Whether these were countries in which the agroexporting model had generated very positive or only moderate results, all the economies of South America were highly dependent on the international markets. Given this context, the potential for harm of the First World War did not materialize. Agricultural exports from South America recovered with notable success from the problems posed by the war, probably achieving their maximum historic figure between 1924 and 1928.

The crisis of 1929 affected the volume of these exports, which nevertheless reacted successfully to the problems posed by the destructive trade policies implemented by some of their principal trading partners. Thus, at the end of the 1930s the volume of agricultural exports from South America was slightly greater than before the crisis.

In a context as difficult as that of the interwar period, South America succeeded not only in maintaining its percentage by volume of world agricultural exports, but in slightly increasing it. However, this apparent success is overshadowed by the fact that other regions, also comprised of developing countries, returned even more spectacular results; Asia and Africa increased their share of world agricultural trade by far more in these same years.

Agricultural exports from South America were initially highly concentrated in four product groups: cereals, meat, wool and coffee and cocoa (90% of its total exports in 1909-13). All these products were seriously affected by the fall in trade during the depression. Exports of traditionally insignificant products such as cotton or oilseeds behaved much more dynamically. The degree of concentration of the products most seriously affected by the crisis explains in part the diversity of the evolution of exports, at both continental and national level.

The fall in prices of agricultural exports from South America was important when the period is analyzed as a whole. The terms of trade of the agricultural exports of South America increased very significantly until approximately 1921, prolonging the trend described by Williamson (2008) for the XIX century. The 1920s displayed highly irregular behavior but a clear downward trend, and the terms of trade further deteriorated in the 1930s; by the end of that decade they were 15% lower than those existing prior to 1929. This was the consequence of the principal damage the depression caused the South American economies. The great effort made to increase their volume of exports in such difficult times did not compensate for the falls in their relative prices. For some countries, such as Argentina, these difficulties are important to understand the abandoning of the agroexporting model following the Second World War.

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