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AGRICULTURAL INTERNATIONAL TRADE DURING THE FIRST FOOD REGIME (1860-1913) AND THE SECOND (1947-1973): MIRROR-IMAGES OR A GRADUAL TRANSFORMATION?

Ángel Luis González-Esteban[‡] Pablo Delgado[§] y Vicente Pinilla[**]

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RESUMEN

Los regímenes alimentarios son estructuras de producción y consumo de alimentos, regidas por normas, a escala global. Comprenden dos elementos principales: el marco institucional, que incluye el grado de regulación estatal y las formas que adoptan las políticas agrarias nacionales e internacionales; y la organización económica, que abarca la distribución mundial de la producción, el consumo y el comercio de alimentos, así como la asignación internacional del trabajo y del capital. En función de estas variables, la historiografía suele distinguir entre un primer régimen alimentario durante la Primera Globalización (aproximadamente entre 1860 y 1914) y un segundo régimen en las décadas posteriores a la Segunda Guerra Mundial (de 1947 a los años setenta). Se ha sostenido que estos regímenes fueron imágenes especulares en lo relativo a la regulación del comercio y a la dirección de los flujos comerciales de cereales, ya que el primero se habría caracterizado por el libre comercio y por flujos de cereales desde la periferia hacia el centro, mientras que el segundo habría estado marcado por una importante regulación estatal y por flujos de cereales desde el centro hacia la periferia. Sin embargo, la caracterización de estos dos regímenes en lo que respecta a la dirección de los flujos comerciales se ha centrado en exceso en los cereales básicos (principalmente el trigo). Este artículo utiliza datos del Instituto Internacional de Agricultura y de la FAO para ampliar la cobertura de productos y estudiar de manera sistemática las transformaciones del comercio agrícola internacional a lo largo de este período. El análisis contribuye a matizar la idea de un "giro" en la dirección de los flujos comerciales entre ambos regímenes.

Palabras clave: Regímenes alimentarios, Comercio agrícola internacional, Primera globalización

ABSTRACT

Food regimes (*FRs*) are rule-governed structures of production and consumption of food on a global scale. They comprise two principal elements: the institutional framework, which includes the degree of state regulation and the forms that national and international agricultural policies adopt, and the economic organization, encompassing the global distribution of food production, consumption, and trade, as well as the international allocation of labor and capital. According to these variables, historiography generally distinguishes between a 1st *FR* during the First Globalization (approximately between 1860 and 1914) and a 2nd *FR* in the decades following World War II (1947 to the 1970s). It has been argued that these regimes were mirror images concerning trade regulation and the direction of grain trade flows, as the first would have been characterized by free trade and grain flows from the periphery to the core, while the second would have been marked by significant state regulation and grain flowing from the core to the periphery. The characterization of these two regimes regarding the direction of trade flows was, however, overly focused on staple grains (mainly wheat). This article utilizes data from the International Institute of Agriculture and the FAO to broaden the product coverage and systematically study the transformations in international agricultural trade over this period. The analysis contributes to

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a more nuanced understanding of the idea of a "flip" in the direction of trade flows between the two regimes.
Keywords: Food Regimes, Agricultural International Trade, First Globalization

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1. Introduction

Food Regime (FR) analysis examines how capitalism and the modern state organize global food production, distribution, and consumption within a political-economy framework (Friedmann 1993; Tilzey 2019). While the term "*FR*" may describe a historical phase marked by specific economic and institutional arrangements, "*FR* analysis" refers to a methodological approach that explains the strategic role of food and agriculture in the development of global capitalism and state systems (Friedmann & McMichael, 1989; McMichael, 2013). This perspective adopts a holistic, non-deterministic historical interpretation of evolving social and ecological relations (Magnan, 2012) and draws heavily on two key macro-sociological traditions: regulation theory (Aglietta, 1979) and world-systems theory (Wallerstein, 1974).

The broader literature outlines a set of criteria that define the conditions under which a historical period can be recognised as a *FR*, although there is still no full agreement on these definitions. Based on these criteria, several regimes have been identified across the 19th, 20th, and 21st centuries. Recent scholarship has mainly focused on the possible emergence of a third *FR* since the 1980s, while alternative periodisations, such as Tilzey's (2019), propose a fourth or even fifth regime. This article, however, examines a period that has received less attention in recent research: the transition between the 1st *FR*, generally associated with the era of the first globalisation (c. 1860–1913), and the 2nd *FR*, corresponding to the post–Second World War period (c. 1947–1973).

While the 1st and 2nd *FRs* are well established in the literature, the period between them has been comparatively understudied. Most analyses concentrate on the consolidation of the 1st *FR* and the 2nd *FR*, or on debates about the rise of a third, neoliberal or corporate *FR* since the 1980s (Friedmann & McMichael, 1989; McMichael, 2013; Burch & Lawrence, 2009). By contrast, the intervening decades (1914–1947) are often portrayed as a phase of disruption and adjustment rather than as a distinctive configuration in their own right. Only a limited number of studies have explored this transitional phase in depth from a *FR* perspective (Winders, 2009a; Tilzey, 2018), leaving its internal dynamics and historical significance insufficiently examined.

One of the chief challenges in identifying *FR*s is the absence of clear, agreed-upon criteria for their definition. Some have pointed out that the idea of single *FR*s may lose clarity as its scope broadens to include "so much (everything?)" (Bernstein, 2015, 28) identifies at least eight dimensions, each covering multiple aspects. These include the global state system, trade patterns and the international division of labour, the rules and their ideological justification, the relationship between agriculture and industry, prevailing forms of capital, social forces beyond states and capital, the inherent tensions and contradictions within *FR*s, and the dynamics of their transitions. Given the extensive range of topics covered, it is hardly surprising that no consensus exists on the periodisation of *FR*s. Nevertheless, despite these conceptual ambiguities, *FR* analysis remains valuable because it seeks to connect patterns of agricultural trade with broader processes of state regulation, geopolitical power, international specialization and the organization of global food systems.

The purpose of this article is not to make a theoretical contribution to this literature[1] but to provide empirical insight into one of the dimensions that *FR* theorists consistently

[1] On this issue, see the final chapter of this book.

identify as a fundamental component of these regimes: the international patterns of agricultural trade (Winders, 2009a). Rather than engaging in the theoretical debate surrounding the definition of *FR*s, we use some of its most influential interpretations as a point of departure and contrast them with quantitative evidence on agricultural trade flows. Doing so will highlight some limitations of influential interpretations within the FR literature: its focus on the center–periphery dynamic has led it to overlook the major transformations that have reshaped intra-bloc trade, particularly the trade occurring among developed countries.

FR scholars have widely agreed in identifying grain flows from the periphery to the core as a fundamental characteristic of the 1st *FR* (1860–1913), whereas the 2nd *FR* (1947–1973) involved the opposite pattern (Bernstein, 2015). Since the 1st *FR* is also commonly associated with *laissez-faire* and the second *FR* with strong interventionism, Winders (2009b, 315) refers to them as 'mirror images'. This narrative aligns well with the idea of international trade flows shaped by the hegemon and a pattern of specialisation driven by the centre-periphery dynamic as capitalism shifted from British to US dominance. This focus may help explain why broad characterizations of the regimes tend to center on grain and overlooks other agricultural products[2]. This article addresses that gap by examining shifts in trade patterns across the full range of agricultural products, offering a more balanced perspective on the transition between regimes.

To this end, the article is structured as follows. After this introduction, a concise literature review on *FR*s is presented, followed by an examination of the key characteristics of the 1st and 2nd regimes and the transformations that took place between them during the Interwar period. The next section offers critiques and clarifications on the preceding discussion. This is followed by the empirical section, where international agricultural trade flows are analysed, and a discussion section in which the data is interpreted from an *FR* perspective. The article concludes with a set of findings, from which some critiques of the methodology and the very notion of *FR* can be drawn.

2. Food Regimes

The concept of a *FR* is widely acknowledged to have a broad "genealogy" due to its intricate and dynamic nature (McMichael, 2009; Ríos Núñez & Coq-Hueva, 2014). Initially introduced by Friedmann (1987) and later systematically developed by Friedmann and McMichael (1989), the idea of *FR*s emerged partly from earlier studies on the political-economic dynamics of the "postwar international food order" (Friedmann, 1982) and has since undergone substantial development. Typically, the term *FR* refers both to specific historical periods defined by distinct economic and institutional characteristics and to a particular methodological framework, often described as *FR* "analysis" (Magnan, 2012; McMichael, 2013; González-Esteban, 2018).

As a methodological approach, *FR* analysis aims to explore the pivotal role of food and agriculture in shaping the "development of the global capitalist economy and the trajectory of the state system" (Friedmann & McMichael, 1989, p. 93; McMichael, 2013). As mentioned before, scholars have highlighted the influence of two macro-sociological

[2] A point also emphasised by Harald Espeli in the Norwegian case. Fish does not fit within the principal patterns of the food regimes.

perspectives on the FR framework: regulation theory (Aglietta, 1979) and world-systems theory (Wallerstein, 1974). Drawing from the French Regulation School, *FR* analysis incorporates the notion of successive accumulation regimes throughout capitalism's history, each defined by specific conditions of stability. Meanwhile, the adoption of a world-systems perspective shifted the focus from individual nation-states to the broader state system and from industry to agriculture (Friedmann, 2009, p. 335). Consequently, *FR* analysis seeks to identify "stable periods of capital accumulation linked to particular configurations of geopolitical power, shaped by forms of agricultural production and consumption relations within and across national spaces" (McMichael, 2009, p. 139). More broadly, Tilzey (2019) argues that *FR* theory endeavours to understand how capitalism and the modern state influence and structure food systems, offering a framework for examining the global organization of food production, distribution, and consumption through a political-economic lens.

A concise definition of a *FR* as a global system operating over a specific historical period is offered by Friedmann, who describes it as a "rule-governed structure of production and consumption of food on a global scale" (Friedmann, 1993, p. 30). Other definitions provide additional nuances. For instance, Winders (2009, p. 132) describes *FR*s as "stable sets of complementary state policies whose implicit coordination creates specific prices relative to other prices, a specific pattern of specialization, and resulting patterns of consumption and trade". Scholars have thus identified two key components of *FR*s: (1) the institutional organization and (2) the economic organization (González-Esteban, 2018; Winders, 2009a). On the institutional side, *FR* analysis examines factors such as state regulation, national and international agricultural policies (particularly trade policies), the political influence of international or supranational organizations like the World Trade Organization (WTO), and the presence or absence of a hegemonic leader state. On the economic side, it focuses on the global patterns of food production, consumption, and trade, alongside the international division of labour and capital, relative prices of agricultural goods, and global production and distribution systems. The interplay of these geopolitical and economic variables is argued to underpin periods of capital accumulation identified as *FR*s (McMichael, 2009, p. 139). However, the complexity of these analyses and the multifaceted nature of the concept have led to ongoing debates regarding the precise historical delineation of different *FR*s. As a concept that continues to evolve, the study and categorization of *FR*s require careful analysis and remain subject to extensive scholarly discussion.

The absence of agreement on the key criteria for defining the temporal boundaries of *FR*s has led to a range of differing proposals from various authors. Recently, the literature has focused more on the debate about the end of the 2nd *FR*, typically dated between 1947 and 1973. While there are differing views on the exact timeframe, attention has also turned to the potential transition to a 3rd *FR* during the late 20th and early 21st centuries (Friedmann, 1992; 2005; Magnan, 2012; Winders, 2009; Bernstein, 2015; McMichael, 2009, 2013; Tilzey, 2019). However, this article aims to examine the transition between what the literature has typically identified as the 1st *FR*, generally associated with the

period from 1870 to 1914, and the 2nd *FR*. This transition marks the shift from the regime characteristic of the First Globalisation to the one that emerged after World War II.

2.1. The first food regime (1860-1914)

The temporal boundaries of the 1st *FR* have been interpreted differently in the literature, with some authors situating it between 1870 and 1914 (Friedmann, 2005), others extending it from 1860 to 1914 (Winders, 2009), and still others proposing a period stretching from 1870 to the 1930s (McMichael, 2009). Tilzey (2019) offers an alternative perspective, arguing that this era should instead be classified as the 2nd *FR*, reserving the label of the 1st international *FR* for the period following the repeal of the Corn Laws (1846–1870).

Magnan (2012, 371) presents the standard characterization of the 1st *FR* (c. 1870–1914) as "a historically specific set of rules, institutions, and practices that regulated food and agriculture on a world scale under British hegemony." Geopolitically, it has been argued that the regime was marked by minimal agricultural regulation, low tariffs, adherence to the gold standard, and the stabilizing dominance of the United Kingdom. At its core was a characteristic international trade pattern: an emergent division of labor linking the settler-states of North America and Australasia to European powers, with the former exporting temperate staples —especially wheat and meat— in exchange for manufactured goods, capital, and migrants. These cheap "wage foods" lowered industrial costs and helped contain unrest in Europe, while mass emigration relieved population pressure and enabled territorial settlement. In parallel, a longstanding colonial supply chain delivered tropical goods —sugar, coffee, tea, tobacco, and cocoa— that Europe could not grow, so these imports complemented European agriculture. By contrast, exchanges with the settler-states involved temperate staples that Europe also produced, which intensified competition among independent producers. In light of these dynamics, Friedmann (2005) characterizes this configuration as the 'settler-colonial' *FR*.

Because it disrupted European grain production and provoked protectionist responses —particularly in Germany and France from the 1870s— Tilzey (2019) argues that this configuration is better understood as an Imperial' *FR*, marking a break from the free-trade era of 1846–1870. In any case, the regime's legacies included the commercial 'family farm' —households reliant on unpaid labor and distant export markets (Koning 1994)— the rise of agrarian movements, and the consolidation of liberal national states, often modeled on the U.S. experience. Again, when it comes to the international division of trade, Bernstein's (2015) depiction is clear and concise: settler states exported wheat to Europe -which caused a crisis in European grain production- and tropical countries exported colonial products to Europe and elsewhere. Nothing is said about intra-bloc trade, that is, trade among wealthy countries or among peripheral countries.

Broad consensus holds that the First World War was decisive in the regime's unravelling: it weakened British hegemony and ended the gold standard; the mid-1920s collapse of world grain markets then prompted extensive state intervention, while Dust

Bowl conditions exposed ecological fragilities, an interplay that ultimately undermined the regime.

2.2. The transition between the first and the second food regime

The reconfiguration of international agricultural trade that unfolded in the 1930s cannot be understood without first considering the profound disruptions generated by the First World War. The war severely damaged Europe's productive capacity, destabilized its traditional patterns of demand, and forced both exporters and importers into unprecedented forms of state intervention. Although agricultural production recovered unevenly during the 1920s, the war had already undermined the institutional and commercial structures that had governed global markets before 1914 (de Hevesy, 1940). Trade routes were reconfigured, new competitors emerged, and financial instability persisted (Malembaum, 1953; González-Esteban, 2017). These tensions created a fragile environment in which the international grain economy proved highly vulnerable to shocks, making the system increasingly difficult to coordinate through prices alone.

The Great Depression transformed these tensions into a full-scale collapse (Aparicio & Pinilla, 2019; Pinilla & Willebald, 2021). As prices plummeted and purchasing power contracted, European governments rapidly expanded interventionist policies to insulate farmers from world market volatility (Yates, 1946). Tariffs, quotas, state purchasing bodies, and guaranteed-price schemes proliferated, and the pursuit of greater self-sufficiency became an explicit political objective. Import demand fell sharply, and long-standing commercial flows were disrupted. Exporting countries, facing severe income losses, responded with their own protective measures—price supports, subsidized exports, and bilateral agreements designed to secure outlets for their surpluses. These actions intensified competition, pushed world prices even lower, and further entrenched the fragmentation of the global wheat economy.

The result was a decisive shift away from the multilateral, price-coordinated structure that had characterized agricultural trade before the First World War. By the mid-1930s, trade in basic staples operated less through open markets than through national policy frameworks, bilateral arrangements, and state-directed purchasing strategies. Market access was increasingly determined by political decisions about self-sufficiency and farm income support rather than by relative prices or comparative advantage. Multilateral attempts to stabilize the wheat market proved ineffective because the underlying surplus persisted and exporters were unwilling to coordinate supply reductions. This situation is widely known and analysed as the farm-adjustment problem (Schultz, 1945; Heady, 1966; Johnson, 1987; González-Esteban & Botella, 2022).

These developments had lasting implications. The interventionist systems created during the Depression consolidated domestic coalitions that governments were unable—and largely unwilling—to dismantle after 1945 (Tracy, 1964). The post-war international trade architecture accommodated these preferences, embedding agricultural

exceptionalism into the new multilateral framework and allowing countries to maintain price supports, import controls, and surplus-management policies (Hathaway, 1987). In this sense, the Depression did more than disrupt existing trade patterns: it reshaped the organizational principles of the global food economy, laying the institutional groundwork on which the post-war, state-managed food regime would be constructed.

2.3 The second food regime

Scholars have described the 2nd *FR* in several ways: as the "surplus regime" (Friedmann 1993), the "mercantile–industrial food regime" (Friedmann 2004), and the "U.S.-centered intensive food regime" (McMichael 2013). Between 1945 and 1973, the international state system widened and effectively reached completion as many Asian and African colonies became independent (Friedmann & McMichael 1989). This unfolded under U.S. leadership in the capitalist world economy, with the dollar serving as the main currency for trade and finance. Friedmann (1993) offers the most detailed extension of the argument, tracing how multiple, interacting forces shaped the period.

First, the regime's "rules"—largely set by the United States—produced an era of tightly nationalized regulation. A crucial moment was what Friedmann calls the "Atlantic pivot": the corporate consolidation of a transnational agro-food complex anchored in the Atlantic economy and binding the U.S. and Europe. The specific brand of mercantilism at its core—price supports and export subsidies—invited "competitive dumping" and recurrent trade frictions, especially between the European Economic Community and the U.S. Second, agriculture was thoroughly industrialized. What had once been external linkages between farming and industry deepened into transformations of labor processes on Northern farms. Upstream input firms drove intensified mechanization and chemicalization, while downstream processors and feed manufacturers demanded uniform, large-volume supplies—most visibly in the meat/soy/maize nexus and the expansion of manufactured, "durable" foods.

It has been argued that the second *FR* affected the global North and South in sharply different ways. In the North, U.S. farm policy —long grappling with chronic surpluses of wheat and maize (increasingly used for animal feed) and the resulting pressure on prices and farm incomes— shifted toward price supports rather than direct income subsidies. That move further stimulated output. Agricultural policy also fused with foreign policy: food aid absorbed excess grain, first aiding European reconstruction via the Marshall Plan, then supplying the Third World under Public Law 480 (PL480) from 1953 onward (Morgan, 1979). A second, decisive shift, as mentioned before, was the cross-border reorganization of agricultural industries led by expanding agribusiness firms. These corporations knit together integrated agri-food value chains, inserting capital between every step from input supply to final consumption and sourcing commodities globally. The result included: (i) a major rise in meat production and consumption—the emergence of a meat–soy–maize nexus; (ii) growth of a "durable" or manufactured foods sector; and (iii) replacement of tropical sugars and vegetable oils by grain-based sweeteners and soy oil. Together, these dynamics deepened the industrialization of crop and livestock systems in the North. With postwar recovery and the long boom of the 1950s–60s, incomes climbed and mass consumption expanded. In Europe, policy sought to replicate the U.S. template through a "re-nationalization" of agriculture; several countries (notably France) became surplus grain producers and attempted to offload excess on world markets.

In the South, many governments accepted —often welcomed— subsidized U.S. wheat under PL480 as a source of cheap food to support industrialization, frequently at the expense of domestic food farming and sometimes alongside new export-crop orientations. This was an early step toward food import dependence. At the same time, these subsidized imports largely bypassed the main corporate restructuring of the agri-food sector. Enduring legacies of the second *FR* thus included the rise of powerful agribusiness corporations, the continuing industrialization of farm production, and a deepening reliance on imported food across much of the Third World (González-Esteban, 2018).

As should be noted, the characterization of the *FR* through international agricultural trade patterns relies heavily on a centre–periphery (or North–South) framework. Bernstein (2015) summarises this configuration as one marked by Third World food-import dependence, the loss of traditional export markets—accompanied by the substitution of sugar and vegetable oils—and the rise of new 'non-traditional' agricultural and horticultural exports. Analyses typically emphasise that the global South became the principal source of import demand for basic grains such as wheat (González-Esteban, 2018). Within the span of roughly two decades, import-oriented policies generated food dependence in countries that had been largely self-sufficient at the end of World War II. By the early 1970s, many Third World economies found themselves caught in a "scissors": one blade was their growing reliance on imported staple foods, the other the erosion of foreign-exchange earnings from traditional tropical exports. Were subsidised U.S. wheat surpluses to diminish, maintaining domestic food supplies would have required securing alternative hard-currency sources to finance these rising import needs (Bernstein, 2015).

It is the emphasis placed on this growing dependence on basic grains in the Third World that allows authors such as Winders (2009b) to construct the "mirror-image" narrative in relation to the 1st *FR* (in which, as we have seen, the Global South was characterised as an exporter of staple grains). However, as we will show, this simplification overlooks major shifts in trade patterns between the two *FR*s, some of which do not necessarily fit within the centre–periphery framework to which *FR* analysis is typically confined.

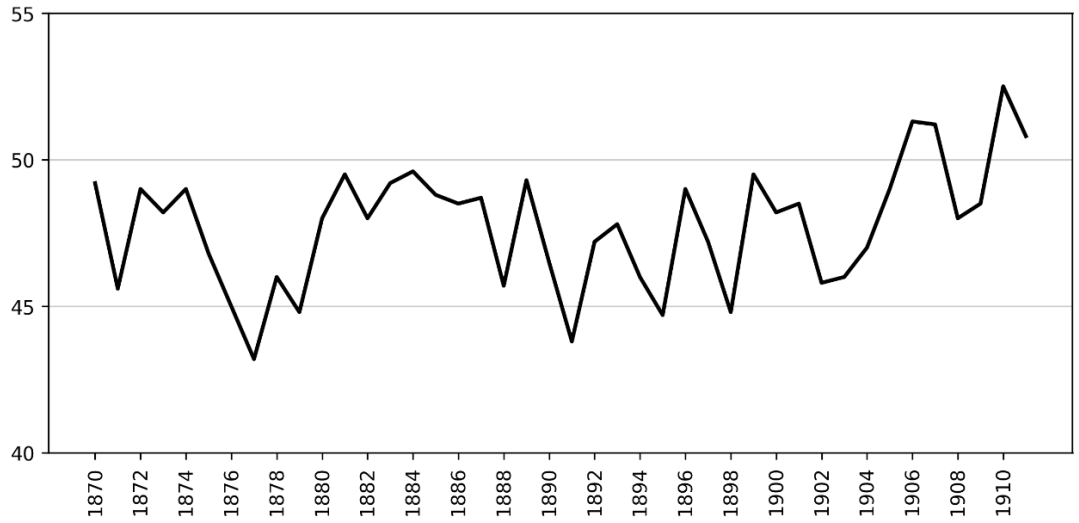
3. Agricultural trade flows (1850 – 1973)

As argued above, the FR narrative built around the "mirror image" thesis presents at least two important qualifications. First, it relies heavily on wheat (Winders, 2009b). This emphasis is not arbitrary: wheat occupied a pivotal position in wage formation, urban provisioning, and political stability in industrializing Europe and later in the postwar Global South. As Tilzey (2017, p. 89) notes, cereals functioned as strategic commodities in the regulation of labour costs and social reproduction, which explains their privileged status within FR analysis. Second, the narrative focuses primarily on the centre–periphery axis, overlooking the significance of intra-core and intra-periphery trade. Both limitations ultimately reflect a broader issue: the relative scarcity of systematic quantitative analysis of international agricultural trade (Collantes, 2018; 2025). For this reason, the following section presents the available empirical evidence in order to assess the extent to which a wheat-centred perspective is justified and whether the mirror-image interpretation proposed by Winders (2009b) is supported by the data. To facilitate comparison between the two periods, particular attention is paid throughout the analysis to three common dimensions: the geographical origin and destination of trade flows, the relative importance of intra- and inter-bloc exchanges, and the composition of trade by major product groups.

From the outset of the first era of globalisation, agri-food trade accounted for a very substantial share of total trade. Although comprehensive agrifood global data are not available prior to the early twentieth century, it is possible to construct an informed approximation using the database compiled by Federico and Tena (2019), which provides estimates of the relative weight of different countries in world exports of primary products.

While this category also includes minerals, a comparison for the early twentieth century between the shares represented by the periphery in agri-food exports and in total primary product exports between these data and those from the International Institute of Agriculture, which include only agri-food exports, reveals no significant differences. As shown in figure 1, between 1870 and 1913 the centre and the periphery participated in these exports in broadly similar proportions, each accounting for roughly 50 per cent of the total.

Figure 1. Percentage Share of the Periphery in World Exports of Primary Products, 1870–1913 (Constant Prices, Current Borders, Millions of 1913 US Dollars)[3]



Source: Authors' calculations based on Federico and Tena (2019).

When the estimate is restricted to agri-food products alone, something that becomes possible using the data compiled by the International Institute of Agriculture in Rome, the predecessor of the FAO founded after the Second World War, whose statistics begin in the first decade of the twentieth century, it appears that peripheral and core countries shared world agri-food exports in roughly equal proportions (Aparicio et al., 2018). Thus, the geographical origin of exports was far more evenly distributed than that of imports, since the latter were heavily concentrated in Europe.

Europe, particularly the United Kingdom, remained the primary destination for global agri-food exports, receiving 76% in 1909–13. Outside Europe, only North America, driven largely by the United States, accounted for a substantial share, with 13.5% of total

[3] The core comprises Europe and the United States, while the rest of the world is classified as periphery, following conventions commonly employed in the *FR* literature. Although any such classification involves a degree of simplification, it is adopted here primarily to facilitate comparison with interpretations derived from the FR approach. Primary products correspond to the category employed by Federico and Tena (2019), which includes agricultural and mineral products.

imports. More than one third of the exports originated in Europe itself, and to a large extent were destined for the continent. Asia and the United States were also significant exporters.

Table 1. Percentage Distribution of Exports and Imports of Agri-Food Products across the World's Regions, 1909–1938

	Europe	North & Central America	South America	Asia	Africa	Oceania	Total
Imports							
1909-13	76.0	13.5	1.3	7.4	1.3	0.5	100
1924-28	62.8	20.9	1.5	12.8	1.5	0.6	100
1928-32	61.9	19.9	1.6	14.3	1.9	0.6	100
1934-38	59.9	20.5	1.6	15.1	2.2	0.7	100
Exports							
1909-13	34.8	20.8	12.2	20.0	5.2	7.0	100
1924-28	21.6	24.3	13.8	27.1	6.1	7.1	100
1928-32	21.6	20.7	13.2	29.6	6.8	8.0	100
1934-38	17.5	16.6	14.2	33.3	8.8	9.7	100

Source: Aparicio, Pinilla and Serrano (2009).

The diversity of European countries participating as exporters of agri-food products was remarkable. Countries such as France, with wine as its principal export item (Ayuda et al., 2020), alongside Italy (Federico, 1988) and Spain (Pinilla and Ayuda, 2009) as suppliers of Mediterranean products stand out in particular. The Russian Empire and Romania were also major grain exporters. The United States likewise emerged as a highly significant global supplier of agri-food products (Lipsey, 2000; Morilla et al., 1999), with North America accounting for 20.8 per cent of the world total.

If we focus on the three most important traded products, it becomes clear that although most of the five principal destinations were overwhelmingly European, the geographical origins of these exports were far more diverse, encompassing European countries, the United States, the Settler Economies, or African, Middle East and Asian countries.

Table 2. The Five Most Important Countries in Exports and Imports of the Three Most Traded Products, 1909–1913

Cotton		Wheat		Wool	
Importers	**Exporters**	**Importers**	**Exporters**	**Importers**	**Exporters**
United Kingdom	United States	United Kingdom	Russia	United Kingdom	Australia
Germany	India	Germany	Argentina	France	Argentina
France	Egypt	Belgium	Canada	Germany	New Zeland
Japan	China	Netherlands	United States	Belgium	South Africa
Austria	Iran	Italy	Romania	United States	Uruguay

Source: Own elaboration based on International Institute of Agriculture,1910-1939.

The interwar period brought significant shifts in regional participation during the transition from the first to the second FR. Europe's role as an importer declined sharply,

falling to 59.9% of global trade by 1935–38. Although it remained the leading importing region, its dominance was no longer overwhelming, a decline largely explained by the strong protectionist turn following 1929 (Madesen, J 2001; De Bromhead et al. 2019). The United States also emerged as an increasingly important importer, but the most striking growth occurred in Asia, which doubled its relative share in global trade (Table 1; Aparicio et al., 2018).

Export patterns changed equally dramatically. The periphery's share of exports expanded across almost all regions, Latin America, Asia, and Africa. In Europe, the most notable development was the near-total withdrawal of the new Soviet Union from the grain market. Latin America intensified its export efforts to offset the steep declines in food and agricultural commodity prices during the 1930s (Ocampo and Parra-Lancourt, 2010). Tropical agricultural economies were relatively insulated from European protectionism, as most of their products did not directly compete with European goods. Meanwhile, Africa and Asia, which had entered international markets later, further expanded their exports. In Asia, much of this growth was directed regionally, as exemplified by rice: approximately 90% of global rice exports originated within the continent, which accounted for 70% of total imports (Aparicio and Pinilla, 2019; Latham and Neal, 1983).

Regarding product composition, IIA data show that, using the SITC2 two-digit classification, textile fibers were the dominant category at the close of the first globalization, accounting for just over one-third of global trade in 1909–13. Cereals were the second largest category, representing 21.7%, followed by sugar and coffee, tea, and spices, which each accounted for less than 9%. At the three-digit level, the top three products—cotton (15.3%), wheat and wheat flour (12.1%), and wool (10.9%)—reflect the centrality of staple foods and fibers for clothing in both warm and cold climates (Table 3).

The transition between FRs, marked by shocks, crises, and structural transformations, also reshaped the composition of international agri-food trade. Previously dominant products lost considerable weight. Wheat, affected by persistent overproduction, fell to just 7.5% of total agri-food exports, while cereals overall lost eight percentage points amid declining prices and oversupply (Aparicio and Pinilla, 2019). Cotton's share declined to 11.3%, and wool to 8.3%.

Table 3. Percentage Composition by Product of Global Agri-Food Exports, 1909–1938 (1925 Prices, US Dollars) (SITC 2)

		1909-1913	1924-1928	1928-1932	1934-1938
0	**Food and live animals chiefly for food**	54.3	55.7	55.1	52.3
01	Live animals	1.0	2.9	2.7	2.4
02	Meat and meat preparations	4.3	5.7	5.2	4.7
03	Dairy products and eggs	5.9	6.3	6.5	6.5
04	Cereals and cereal preparations	21.7	17.2	16.9	14.8
05	Vegetables and fruit	4.6	5.0	5.1	5.4
06	Sugar, sugar preparations and honey	8.9	11.4	11.2	10.2
07	Coffee, tea, cocoa, spices	7.8	7.3	7.4	8.3
1	**Beverages and tobacco**	2.6	2.8	2.9	2.7
11	Beverages	1.0	0.8	0.9	0.9
12	Tobacco and tobacco manufactures	1.7	2.0	2.0	1.8
2	**Crude materials, inedible, except fuels**	41.5	39.6	40.0	42.7
22	Oil seeds and oleaginous fruit	4.6	4.7	5.1	5.5
23	Crude rubber	2.5	7.7	8.8	11.1
26	Textile fibres (not wool tops) and their wastes (not in yarn)	34.4	27.2	26.1	26.1
261	Silk	3.3	3.8	4.1	3.5
268	Wool and other animal hair (excluding tops)	10.9	8.4	8.3	8.7
263	Cotton	15.3	12.3	11.3	11.3
264	Jute	1.8	1.2	1.1	1.2
4	**Animal and vegetable oils, fats and waxes**	1.6	1.9	2.1	2.3
42	Fixed vegetable oils and fats	1.6	1.9	2.1	2.3
	total	100.0	100.0	100.0	100.0

Source: Own elaboration based on IIA, 1910-1938.

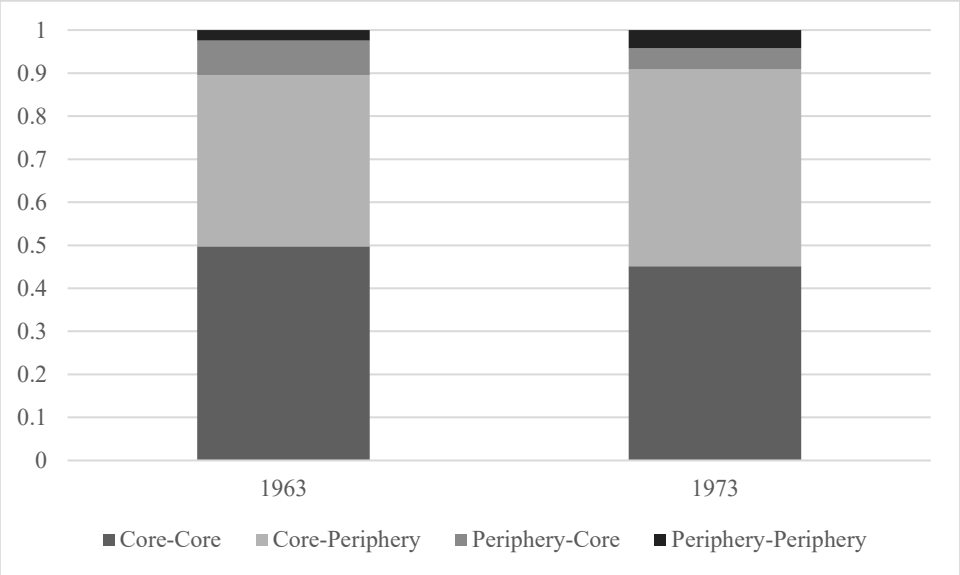
To provide evidence on the second FR, we use data from UN-COMTRADE. This database reports bilateral trade flows by country from 1962 to the present. Although the 2nd *FR* is generally associated with the period 1947–1973, detailed bilateral evidence is only available from the early 1960s onwards. Consequently, our analysis focuses on the years 1963 and 1973, which provide a representative picture of the structure and composition of international agricultural trade during the final phase of the 2nd *FR*.

Since our interest lies in relative shares, we work with trade in nominal values. Moreover, given that not all countries were actively engaged in agricultural trade, we rely on a representative sample of world trade including the largest economies[4]. For the second food regime, we classify as the core all countries for which data are available (see footnote 4) in Europe, North America, and Oceania, while the periphery comprises the countries located in Latin America, Asia, and Africa. Unlike the first food regime, we exclude

[4] Specifically, we use data for the following countries: Algeria, Argentina, Australia, Austria, Belgium-Luxembourg, Brazil, Canada, Chile, Colombia, Côte d'Ivoire, Denmark, Ecuador, Egypt, Finland, France, Germany, Germany (Federal Republic/West), Greece, Hong Kong SAR, India, Indonesia, Ireland, Italy, Japan, Malaysia, Mexico, Morocco, Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Peru, Portugal, Saudi Arabia, Spain, Sudan, Sweden, USA, United Kingdom, and Uruguay.

Oceania and Canada from the periphery, as they gradually became industrialized regions. In addition, we have information for a wide range of agricultural products, classified according to the United Nations' SITC Revision 2 at the three-digit level. This allows us to gain a broader view of world trade, rather than focusing exclusively on wheat.[5]

Figure 2. Trade flows in grain trade between blocs (%)



Source: UN-COMTRADE and Serrano (2007). Grains correspond to SITC Rev.2 three-digit codes 041–045 (wheat, rice, barley, maize, rye, oats, millet, and sorghum).

Figure 2 shows intra- and inter-bloc trade between the core and the periphery for the case of basic grains (widely used in FR analysis). At first sight, basic grains appear to confirm the classic narrative of the second FR. That is, in both years core–periphery trade was highly significant, followed by core–core trade. For example, in 1963 the world's leading exporter of basic grains was the United States, followed by Canada, Australia, and Argentina (although the latter cannot be considered periphery). However, the main export destinations for the United States were India, Japan, and Canada. Thus, even in the case of basic grains, the mirror image is open to qualification. The same applies to Canada: its main importers in that year were the United Kingdom, Japan, and China. On the other hand, periphery–core and periphery–periphery trade remained marginal. Still, although basic grains are a key product in international trade, other agri-food commodities carried equal or even greater weight. Table 4 shows that wool, meat, coffee, oilseeds, and cotton were also crucial for understanding world trade.

[5] We also rely on the following products: 001, 011, 012, 013, 022, 023, 024, 025, 041, 042, 043, 044, 045, 046, 047, 048, 051, 052, 053, 054, 055, 061, 062, 071, 072, 073, 074, 075, 081, 091, 099, 111, 112, 121, 122, 221, 261, 262, 263, 264, 265, 266, 267, 411, 421, 422, 431. For the correspondence of each product code, as well as further methodological details on the database, see Serrano (2007).

Table 4. Agrifood products with the greatest weight in world exports (%)

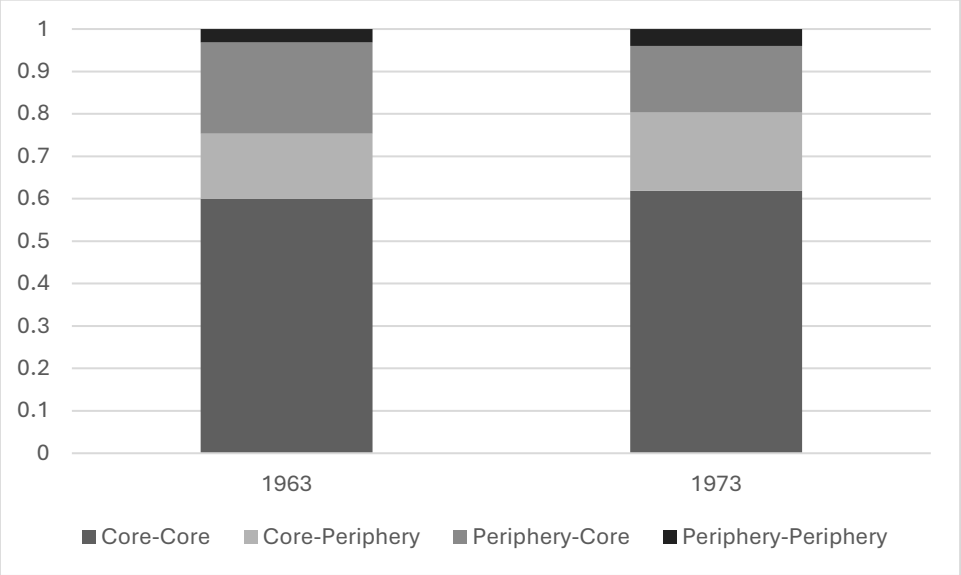
1963	%	1973	%
Wheat	9	Fresh and frozen meat	11
Wool and other animal hair	8	Wheat	8
Fresh and frozen meat	7	Oilseeds	7
Coffee	6	Animal feed	6
Cotton	5	Maize	6

Source: Author's elaboration based on UN-COMTRADE.

In fact, when broadening the focus to all agrifood products, the picture changes (see Figure 3). While core–core trade remains significant, periphery–core trade exceeds core–periphery trade. In other words, the pattern resembles that of the first FR.

What happens with the direction of flows in key products beyond grains? Table 5 reports the top three exporters of the world's leading products in 1963 and their main import partners.

Figure 3. Trade flows in total agri-food products between blocs (%)



Fuente: UN-COMTRADE and Serrano (2007). Agrifood products include those listed in footnote 2

Once again, the mirror image interpretation appears to capture only part of the observed trade dynamics . That is, beyond wheat, core–periphery flows are far from clear in other commodities with comparable weight in world trade. In meat, another classic example in FR narratives (Wesz et al., 2021), trade flows were much more complex than a simple core–periphery pattern, while in coffee, a highly relevant commodity, flows were clearly periphery–core. This reflects the fact that, in addition to institutional factors, purely economic variables help explain the direction of trade (Huberman et al., 2017).

Table 5. Main exporting countries and their main import partners in 1963

	Exporter→Importer
Wheat	**USA**→India **Canada**→United Kingdom **Australia**→China
Wool and other animal hair	**Australia**→Japan **England**→USA **Argentina**→USA
Fresh and frozen meat	**Netherland** →Germany **Argentina**→ England **Australia**→USA
Coffe	**Brazil**→USA **Colombia**→USA **Côte d'Ivoire** →France
Cotton	**USA**→Japan **Mexico**→USA **Sudan**→India

Source: Author's elaboration based on UN-COMTRADE.

4. Discussion

The empirical evidence presented above allows for a reassessment of the "mirror-image" thesis that moves beyond a stylized opposition between two FRs. The conventional narrative contrasts a first regime in which the periphery exported staples to an industrial core with a second regime in which the direction of grain flows was reversed under U.S. hegemony and state-managed surplus disposal (Winders, 2009b). While this formulation captures an important political shift—especially in the governance of wheat markets—it becomes less persuasive once the full structure of trade is examined across products, blocs, and the transition period.

In the first FR, the international division of labour was not organized around a simple model in which peripheral regions supplied agricultural commodities to a manufacturing core (O'Rourke and Findlay 2007). Around the eve of the First World War, roughly half of global agri-food exports originated in countries that can be classified as core economies (i.e. European and North American countries). Asia, Latin America, Africa, and Oceania were undoubtedly important exporters, but intra-core trade was already fundamental. Southern European countries exported wine and horticultural products; Russia and Eastern Europe were major cereal suppliers; and substantial volumes circulated within Europe itself. The system was therefore characterized by a dense network of exchanges within the core, rather than by a unidirectional periphery-to-core flow.

The commodity structure reinforces this point. Textile fibers accounted for the largest share of world agri-food trade at the end of the first globalization, and the principal exporter of cotton was the United States—a core economy that was also already the fourth-largest exporter of wheat. Even within cereals, leading exporters were not exclusively peripheral. The first FR thus combined settler exports to Europe with

significant core-based agricultural production and extensive intra-core trade. The image of a polarized agricultural periphery feeding an industrial centre therefore captures only part of a more complex reality (Meissner and Tang, 2018).

The interwar transition further complicates the narrative. During this period, peripheral regions significantly increased their share of global agricultural exports. The contraction of European demand and the turn toward protectionism did not eliminate peripheral participation; in many cases, it encouraged export diversification and regional reorientation. Latin America expanded its export presence, while Africa and Asia consolidated or increased their roles in global markets. At the same time, intra-periphery trade gained relevance. The Asian rice economy is a particularly clear case: a very large proportion of global rice exports both originated and were absorbed within Asia (Ayuso-Díaz, 2022). These South–South circuits functioned as regional subsystems embedded in the global economy but not reducible to core demand.

Equally important, the interwar years saw a notable diversification of product composition. Wheat lost relative weight within total agri-food trade, cereals as a whole declined in importance and the composition of trade became considerably more diversified than it had been in the late nineteenth century (Aparicio and Pinilla, 2019; Delgado et al., 2023). This shift is analytically significant because the mirror-image thesis relies heavily on wheat as the emblematic commodity of regime change. Yet wheat no longer occupied the same proportional position within global agricultural trade as it had before 1914.

It is true that within the domain of basic grains the second FR displayed a marked expansion of core-to-periphery flows. U.S. surplus disposal and related policies contributed to rising grain imports in many developing countries, generating new forms of food-import dependence. However, even in cereals, intra-core trade remained substantial. Wealthy countries—including the United Kingdom and other Western European economies—continued to import significant quantities of wheat. The grain market was therefore structured not only along a North–South axis but also around differentiated demand within the core.

When total agri-food trade is considered, the symmetry implied by the mirror-image metaphor weakens further. During the second FR, periphery-to-core flows remained quantitatively more important than core-to-periphery flows in aggregate terms. Commodities such as coffee, cotton, and several tropical products continued to move predominantly from peripheral producers to core consumers. At the same time, core-to-core exchanges represented the largest single component of global agricultural trade (Serrano and Pinilla 2014). Industrial livestock systems, rising incomes, and technological change generated dense circuits of exchange among advanced economies themselves. In quantitative terms, the most significant axis of the second FR was core–core, not core–periphery. In this respect, intra-European trade played a key role. In 1966–73, 21% of global agri-food imports and exports took place between countries that would

be the EU-15 in 1995 (Aparicio et al., 2009)[6]. The elimination of trade barriers among the Member States, the implementation of the Common Agricultural Policy, and technical progress produced two crucial effects: the achievement of European food self-sufficiency and the intensive integration of European markets. By around 1985, intra-group trade accounted for roughly 80% of these countries' agri-food exports and imports (Serrano and Pinilla, 2011; Martín-Retortillo and Pinilla, 2015).

These findings also highlight a broader methodological point. Institutional change—shifts from British-led liberalism to U.S.-centred interventionism, the emergence of surplus management mechanisms, and the embedding of agricultural exceptionalism in postwar trade rules—clearly mattered. The governance of grain markets in particular differed substantially between the two FRs. Yet the geography of trade cannot be explained solely through institutional arrangements. While a systematic analysis of these determinants lies beyond the scope of this article, the evidence presented here suggests that changes in relative costs, agro-climatic specialization, productivity levels, technological developments and transport conditions remained important drivers of trade patterns across both regimes. Purely economic variables retained considerable explanatory power across both regimes. Factor endowments, agro-climatic conditions, relative productivity levels, technological change, income growth, and dietary transformation shaped the direction and composition of trade flows in ways that institutions alone cannot account for. Coffee continued to flow from tropical regions to temperate consumers not because of postwar surplus policy but because of ecological specialization. The expansion of meat and feed trade among core economies reflected industrialization of agriculture and rising consumption rather than hegemonic strategy alone.

Taken together, the evidence suggests that the transition between the first and second FRs should not be understood as a symmetrical inversion of trade directions. The first FR already combined substantial intra-core trade with significant exports from both core and peripheral regions. The interwar period strengthened peripheral participation and expanded intra-periphery circuits while reducing the relative centrality of wheat. The second FR introduced a politically distinctive pattern in basic grains but preserved—and in some cases deepened—periphery-to-core specialization and core-to-core integration.

The metaphor of "mirror images" therefore captures a visible shift in the political management of grain markets but overstates the structural discontinuity between FRs. What changed was not a simple directional reversal but the hierarchy among commodities, the relative weight of regional subsystems, and the institutional mechanisms governing surplus and market access. A more accurate interpretation would describe the shift between FRs as a reconfiguration of an already complex and multi-directional global agricultural system in which institutional regimes and economic

[6] In 1973, twelve countries were members of the European Communities. They were joined in the 1980s by Greece, Portugal and Spain.

fundamentals interacted continuously, rather than as two symmetrical and opposed trading orders.

5. Conclusion

This article has reassessed the transition between the first and second FRs through a systematic quantitative examination of international agri-food trade, broadening the empirical base beyond wheat and incorporating intra-core and intra-periphery exchanges. Using evidence from the International Institute of Agriculture and UN-COMTRADE, it has shown that the first FR was not structured around a simple periphery-to-core division of labour, since roughly half of global agricultural exports already originated in core economies and intra-core trade was substantial. The interwar period, often treated merely as a phase of disruption, emerges instead as a crucial moment of transformation: peripheral regions increased their share in global exports, intra-periphery trade gained relevance—particularly in Asia—and the relative weight of wheat declined within a more diversified commodity structure. Although the second FR did generate a distinctive pattern of core-to-periphery grain flows and new forms of food-import dependence, especially in basic cereals, total agri-food trade remained dominated by core–core exchanges, while periphery-to-core specialization persisted in key commodities. The "mirror-image" thesis therefore captures an important political shift in the governance of grain markets but overstates the structural discontinuity between regimes. Rather than invalidating the *FR* perspective, these findings suggest the need to incorporate a more differentiated understanding of trade flows, one that gives greater attention to intra-bloc exchanges, commodity diversity and the coexistence of institutional and economic determinants.. From this perspective, the contribution of the article is not to reject the insights of the FR literature, but to refine some of its empirical foundations and to highlight the potential benefits of a closer dialogue between FR analysis and quantitative approaches to international agricultural trade.

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