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# Strategies of international financial capitalism and the integration of the Spanish electricity system: the Levantine coast\*

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Many studies have been carried out about the role of investment in international electricity markets, with special attention paid to qualified agents in the constitution of the first urban systems. A most recent and important work is the book *Global Electrification*.<sup>1</sup> In the research, Hausman, Hertner and Wilkins (2008, p. 4) describe the “role of multinational enterprise and international finance in making global electrification possible”. The authors identify electrification as a global phenomenon that has been linked to various development models since its inception at the end of the 19th century. Multinational corporations and international finance had a crucial influence on global electrification. Business strategies, under changing leadership over time, followed patterns that transcended the national framework. As Ferreira and Bartolomé (2019) have emphasized, the strategies of multinational

\* The concepts of “Levant” or “Levantine”, criticized at present for their ambiguity and lack of definition in historical and administrative terms, are used in this article for purely practical reasons to refer to the electricity companies that were developed in the provinces of Castellón and Valencia. We have left to one side the activities of other companies developed in the province of Alicante, because they were outside the regional electrical system configured in East-Central Spain before the 1950s.

1. Partial approaches to the intricate world of foreign investment had been made in previous research from different points of view. Several authors identified the characteristics of the host countries, where electrification was linked to the performance of companies and the behavior of international finance (Doria & Hertner, 2004). Previously, in the so-called battle of the electricity systems, other studies made a connection between the electrotechnical manufacturers and the strategies of the financial entities (Hertner, 1986; Segreto, 1992; David, 1992). Some authors have gone further into the study of national varieties that holding companies and investment companies set up in Europe (Broder, 1984; Lantier, 1994; Segreto, 1994b and 1994c; Bussière 1992; Paquier, 2001).

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electricity companies (trusts-consortia-holding companies) adapt to complex problems, some common to those of other network industries and others sectoral (technological, economic and political), that allow understanding of their organizational evolution.<sup>2</sup>

Among these problems, perhaps one of the least studied —the object of this article— is recognizing the interactions of foreign investments with local electricity companies because, ultimately, they were the ones that determined the different national/regional electrical configurations and developments.<sup>3</sup>

The presence of foreign investment was relevant to the development of the Spanish electricity market until the 1960s.<sup>4</sup> International studies suggest that throughout the three waves of foreign investment until the Second World War, the participation of foreign financing in the Spanish electricity sector remained at similar percentages to that in the rest of the peripheral countries, although higher than that in the countries with early industrialization, that is, almost a third of the total investment (Hausman, Hertner, & Wilkins, 2008). Since the national investment is the dominant component, Spanish experts have focused on the success of regional capital, as well as on the importance of industrial banking, but much less on the role played by foreign capital (Valdaliso, 2006; Aubanell, 2007; Rubio & Garrués, 2016).<sup>5</sup>

Was foreign investment relevant in the configuration of the Spanish regional electricity markets? Based on what happened in other peripheral electrifications, to date companies and markets in Spain have been considered as merely passive agents. These investigations began with Núñez (1993), who studied the case of the electrification of the southern peninsular and its connection with Germanic interests, and continued with Capel (1994) and Fernández (2009) analyzing how gas companies with French capital diversified their investments in the incipient business of electric lighting. The capitalization strategies of

2. These authors —without pretending to be exhaustive— among the technological factors, highlight the expansion of hydroelectricity and the formation of large distribution networks; among economics they highlight the “peak load problem” and the high sunk costs of electricity investments; and, among politicians, those caused by World War I and the Great Depression, which encouraged greater state intervention and a nationalist reaction to foreign investment.

3. Hausman, Hertner & Wilkins (2008) explain, for example, how the largest Spanish electricity company of the first half of the 20th century, Barcelona Traction, Light and Power Company (1911) was created by Canadian businessmen following the financial model and operative practices in Latin America. On this occasion, however, the Toronto group diversified the distribution of its bonds into the traditional British market as well as into France and Belgium. Years later, in 1924, the control of Barcelona Traction passed into the hands of the Belgian holding Sofina, although it maintained its Canadian management, until its bankruptcy in 1949.

4. About the long-term impact of foreign MNEs on host economies focusing on the case of Spain, as a late industrializing country, see Puig and Alvaro (2016).

5. In Latin America, for example, the opposite has happened. The importance of direct foreign investments with respect to local investments is why the former has been given special relevance by researchers. See, for example, the studies by Lanciotti (2008) and Saes (2013).

large companies based in mature electricity markets, such as Catalonia (Alcalde, 2004; Hertner & Nelles, 2007) and Madrid (Aubanell, 2007), were complemented by Hidalgo and Garrués (2015), who analyzed the role played by Belgian and English capital in the process of the oligopolization of the Levantine electricity market until the 1950s.<sup>6</sup> Recently, Bartolomé (2012, 2014) considered an international trend in Iberian electrification by studying Spanish companies that settled in other territories.

Curiously, for an electrical market such as the Spanish one, where traditional electrical systems have been dominant (Garrués, 1997, 2012),<sup>7</sup> the analyses carried out to date in Spain have been limited to specific cases of large companies —successful ones, of course—and the role of external fi-

6. The development of foreign investment in Spain in other peripheral markets, nearby and economically related due to their weak industrialization, such as those present in the main Andalusian cities or to the south of the Levant (Alicante and Murcia), are only comparable with those analyzed in this article during first wave of investments carried out in the late 19th and early 20th centuries (Núñez, 1993). But these markets, on the contrary, are not a comparative benchmark during the second wave of foreign investment. The leap in business scale and scope, derived from the massive exploitation of hydroelectricity and the transmission of electricity over long distances, which transcends the business from the local to the regional, was directed in these neighboring territories by national capitalism, probably because the dynamism of its demand was clearly lower than the Valencian market (Tedde & Aubanell, 2006).

7. The term Traditional Electric System (TES) defines the evolution (origins, development and crisis), characteristics and operation of the industrial organization established by small and medium-sized electricity companies before the integrated electricity system (IES) was consolidated (from the regional networks to national/international networks), as well as the behavior of the businessmen who managed them; both protagonists of peripheral electrification in Spain from the end of the 19th century until the Second World War, approximately. This definition is not closed; it is a construct that can be improved and adapted to other variable economic and historical contexts as research on non-integrated systems progresses, in this case for the Levantine electricity market.

In a stylized manner, the simplest TES was made up of local universal electricity companies (production, transport and distribution) with a production center and a consumption center —rural or urban— very close to each other. As of World War I, the expansion of hydroelectricity, thanks to the technical advances that generalized the transport of energy over long distances, allowed large and medium-sized companies to expand their resource endowment (reservoirs, production plants and distribution substations), while the geographical dispersion of the points of consumption expanded and their applications (domestic, industrial and traction) intensified. Companies with sufficient financial muscle adopt, after increasing investment, the minimum efficient scale to make profitable economies of scale, scope, network and agglomeration derived from the dynamism of their consumer markets. The growth of the electricity businesses, via horizontal expansion —due to the addition of production, transport and distribution centers— gave rise to the formation of the first integrated electricity systems. This growth also allowed an internal restructuring of the electricity businesses. A few large electricity companies specialized in the most lucrative activity, the sale of electricity at high voltage, leaving for new subsidiaries and/or old small and medium-sized universal companies the less remunerative activities, the transport and distribution at medium and low voltage of the least attractive points of consumption: rural areas and urban peripheries with lower population and industrial density. As a result of competitive struggles and collusive agreements, and a weak system of state regulation, business integrated electricity systems, with uneven rhythm and characteristics, from local to regional and even national levels, gave rise to the current national integrated electricity systems.

nancing in certain public services in more mature electricity markets. It is necessary to clarify that this study does not intend to analyze the strategies of the international electricity and financial companies, although it takes them into account to study their effects on the organization of Spanish electricity, mainly from the information offered by its subsidiaries and competitors.<sup>8</sup> For this reason, the object of this paper is to determine the impact that foreign capital had on local business strategies and, thus, on the configuration and dynamics of the new integrated regional electricity systems.

The article, building upon a good number of primary sources located in the Iberdrola Historical Archive in Alcántara (Cáceres),<sup>9</sup> as well as the secondary ones cited in the text, is organized in five sections. The first presents the German-Swiss and Belgian international financial groups that acted in the Levantine market: Elektrobank, Sofina and Électrobel. The second section describes the first foreign interventions from the early 20th century to the 1920s: Lebon, Electra Valenciana and Hidroeléctrica del Turia. The third section focuses on the competitive struggle in the dynamic 1920s, taking into account: (a) the initiatives of English capital, *SAFE* and its subsidiary *Cooperativa Valenciana de Electricidad*, (b) the strategies of Électrobel-Hispanobel, and (c) the productive integration concerning the Turia river: *REVA* and *Elektrobank*. The fourth section explains how the market went from being a competitive market to an oligopolistic market, mainly showing the strategies of *LUTE* and *Hydroelectric Group*. The last section, taking into account the incidence of foreign investment in the integration of the Levantine electricity system based on collaboration/inter-company competition, reopens the debate regarding the asynchronous consideration of the theoretical model of local monopolies regarding the Spanish case.

### **Who were the most important international actors in the Levante market? The German-Swiss financial groups and the Belgian connection**

The main electrical manufacturing companies in Germany and Switzerland, in the form of holding companies, financed, managed and invested in

8. In this work, the strategies of the holding companies have been analyzed based on their results in the Levant and taking into account, mainly, the information provided by their subsidiaries.

9. This archive contains quantitative and qualitative information on Spanish companies, as well as those that were initially formed as subsidiaries of foreign interests in Spain. The information consulted is the following: *Hidroeléctrica Española*. Correspondence with Bernardo Gómez Igual (1925–1928) and Correspondence with *Unión Eléctrica Levantina* (1917–1936); Collection of documents of subsidiary companies. *LUTE* minutes of the sessions of the Board of Directors (1930–1960) and *Volta, S.A.*; and other documentation (1913–1960).

foreign electricity companies.<sup>10</sup> As part of the wave of investment funds that began in 1890, another holding group was developed in Belgium at the end of the 19th century, also attracting capital from other countries —French and German. The intensification of capital in the electricity business from 1890 encouraged the development of consortia of investors in foreign ventures.<sup>11</sup> Some of them were developed in the form of “*unternehmergeschäft*”,<sup>12</sup> with the support of investment and/or portfolio companies. These companies were a combination of financial companies and operators that either worked directly in foreign markets or under more or less independent subsidiaries and binding contracts for the acquisition of electro technical equipment.<sup>13</sup>

Elektrobank was behind almost all the German<sup>14</sup> investment initiatives in the Levantine electricity sector,<sup>15</sup> whose purpose was to extend the electricity business of Catalonia to the Levant and, with it, the use of electro technical material from AEG [Figure 1]. This German holding, linked to Deutsche Bank, controlled a large network of financial interconnections, with the participation of Swiss, French and Italian banks. In the strategy of concealment of German assets after the First World War, Elektrobank acted by making extensive use of indirect control systems<sup>16</sup> during the interwar period. The agreement signed by *GE* and *AEG* in January 1922 verified the reduction of the Franco-Belgian holdings and the sustained increase of US interests (Morgan Group/General Electric), which took control of Sofina.<sup>17</sup>

Sofina was set up as a German holding company in Brussels (1898).<sup>18</sup> For three decades it dominated, as the policy coordinator of AEG, one of the

10. Sureda (1959); Broder (1982) (1985a); Feldman (1990); Bussière (1992); Hertner (1987); Segreto (1994a); Loscertales (2002); Doria and Hertner (2004); Hausman, Hertner and Wilkins (2008).

11. Ferreira and Bartolomé (p. 337).

12. “*Unternehmergeschäft*” is a German word used to define those types of electro-manufacturing holding companies in Germany and Switzerland that founded and financed service companies, especially electricity ones, with the main objective of opening up a market for their products, especially in the European periphery and in South America due to its high aversion to the risk of local capital.

13. In 1914, for example, the Swiss holdings Elektrobank and Indelec had direct and shared investments in 16 European countries. Since 1906, Elektrobank negotiated the shares of the Compañía Barcelonesa de Electricidad in several European stock markets. In 1944 almost half of the 80,000,000 pesetas of the capital stock of Compañía Sevillana de Electricidad was in the hands of Elektrobank. The work of promoting the sales of Swiss products in Spain from 1917 to 1944 meant that orders were placed with the Swiss industry for an amount of more than 41,000,000 Swiss francs. Marguerat and Roulet (1992).

14. His registered offices were in Switzerland (1895).

15. E.g., the lighting proposal to the City Council of Valencia in 1906.

16. Normally the parent group, in the form of a Swiss nationality trust, controlled its subsidiaries through direct and/or cross-company participations.

17. Broder (1985a, p. 93); Malló (2011, p. 169).

18. Heineman (1929) (1931); Broder (1982) (1985a) (1985b); Kurgan-Van Hentenryk (1987); Bussière (1992); Brion (1994); Dalla-Corte Caballero (2006); Duchenne (2008); Hausman, Hertner and Wilkins (2008).

most powerful multinational groups on the planet. Likewise, its origins were linked to the introduction of General Electric's financial practices and methods for Europe.<sup>19</sup> Sofina progressively consolidated a vast and complicated global system of interconnections (holdings, subsidiaries and operating companies), playing a fundamental role in the protection of German international interests. From 1929, the restructuring of Sofina made the holding more global,<sup>20</sup> and its wide variety of international shareholders<sup>21</sup> and provision of public services was impressive.<sup>22</sup> Sofina's investments in Spain should be interpreted in light of the business opportunities that were able to arise from "electric Europe", organized in a federal way but unified from a financial point of view. This project coincided with the extensive reorganization/concentration of electrical interests within investment and merchant banking in the first half of the 1930s. At this stage, in fact, the large Belgian companies specializing in the electricity industry, such as Sofina and Électrobel, were consolidated.

The concealment of the property was repeated in the case of the *Électrobel* Group, the creation of Hispanobel (October 1929), and the subsequent process of control of REVA.

Électrobel was a creation of Banque de Bruxelles, whose main shareholding was German, which had the support of Banque Paribas<sup>23</sup> and the Société Générale de Belgique before the First World War. Given the Belgian dependence on American and German technologies and given Paribas' need to revise its electricity strategy in the mid-1920s, Électrobel sought the forming of an international electricity group that would end the German hegemony of Sofi-

19. GE created UEG in 1892 as a foreign affiliate, becoming its main subsidiary company in Germany until in 1904 all UEG holding companies became dependent on AEG. In 1898, when Sofina was created, UEG was a foreign subsidiary of GE; in 1894, UEG constituted Gesfürel. Both UEG and Gesfürel formed part of the constitution of Sofina, therefore, GE was linked to Sofina. UEG controlled 64% of the founding capital, while Belgian financiers invested the rest.

20. Thus, Sofina sought additional financing on an international scale. On 19 October 1928, a new company was established – Trust Financière de Transports et d'Entreprises Industrielles – and on 22 January 1929, Sofina completed the merger with that company, transferring all of its assets and liabilities as well as its name. What emerged was Société Financière de Transports et d'Entreprises Industrielles (Sofina), the so-called new Sofina. Hausman, Hertner and Wilkins (2008).

21. They included American, Belgian, British, French, Italian, Spanish, and even some German firms.

"Although the Germans had become involved once more, Belgian interests were 'the deciding factor' in the chain of command. Complexities and networks notwithstanding, Sofina was a Belgian enterprise, with Dannie Heineman in charge." Hausman, Hertner and Wilkins (2008, p. 154)

22. In 1929, for example, its companies sold more than 3,750 TWh and transported more than 800 million passengers.

23. Broder (1985a); Bussière (1992).



na in Belgium.<sup>24</sup> Nevertheless, the failure of the *Électrobel* project is explained, as part of the restructuring process of the European electricity sector at the beginning of the 1930s, by the weak financial commitment of its main shareholders, as well as by the tactical errors of its main promoter.<sup>25</sup>

### **The first foreign intervention: Lebón, Sociedad General de Electricidad and Electra Valenciana**

Before the first electricity factory was built in Valencia (1893),<sup>26</sup> the French industrialist Eugenio Lebon had set up a small experimental plant in 1872.<sup>27</sup> In 1902, Eugenio Lebón y Cie was the most important company in the supply of gas and electricity. At the beginning of 1910, Lebón y Compañía had two thermal power plants in Valencia (3,790 HP) to supply electricity to the capital and ten nearby towns. In the face of the strong patriotic reaction that arose during the Great War against foreign interests, Lebón ceded its municipal network to *Electra Valenciana* in 1921 (Tedde & Aubanell, 2006).

Previously, Lebón y Cie had signed an energy purchase contract with *Hidroeléctrica Ibérica*, which began operating in 1909 when the Molinar waterfall (75 km) came into service. *Ibérica's* strategy was to place its huge productive resources in the Levantine market, without entering into competition with its traditional distributors, but rather offering them a price that would allow them to expand [Table 1]. This policy was intensified when the dominant position of *Ibérica* (*Española* in the Levant) was initially threatened by *Electrobank*. In fact, the Swiss holding company, holder of three waterfalls in the river Mijares, competed for Valencia's public lighting contract.

24. In 1927, the Belgian groups studied separately the rationalization of their regionalized electricity market under the control of a central body. The solution of Henri Urban (Chairman of *Paribas*) was to merge the participating companies, giving rise in January of 1929 to *Électrobel*. The new French-Belgian group (with a portfolio of 2,500 billion francs and direct electricity operators in Belgium and indirect subsidiaries in Europe and the Middle East) became a clear rival of *Sofina*. However, the rivalry between two of its three main control banks (*Banque de Bruxelles* – 50% – and *Société Générale* – 13%) was its main weakness. Its control group was divided between *Banque de Bruxelles* (50%), *Paribas* and its group (30%) and *Société Générale* (13%).

25. The poor integration of *Banque Paribas's* strategies in the group required *Électrobel* not to interfere, against the consolidation policy of Urban, in the relations maintained between its subsidiaries and those of *Sofina*.

26. The earliest French presence in the Levantine public lighting service occurred in the city of Valencia, in 1853, with the gas company Lebón padre e hijo, Cie.

27. The first thermal power plant for commercial purposes in Valencia was set up in 1882 in the Plaza de San Esteban by *Sociedad Valenciana de Electricidad*, a subsidiary of *Sociedad Española de Electricidad* created in Barcelona.

**TABLE 1.** - *Water turbines belonging to Hidroeléctrica Ibérica linked to the Levantine market (1904)*

Production	River	Power (HP)		Place of consumption	km
		Dry season	Average water		
Molinar (Albacete)	Júcar	14,000	21,000	Valencia	75
				Alcoy	80
				Alicante	90
Fanzara (Castellón)	Mijares	2,300	4,600	Castellón	30
Total		44,535	89,970		

Source: *La Energía Eléctrica* (1904). nº 9, 10 de mayo, pp. 178-179.

In 1913, foreign capital made one of the first attempts to cartelize the Levantine electricity market through Sofina<sup>28</sup> —not Barcelona Traction, the dominant company in the Catalan market, as the press claimed<sup>29</sup> —when Eduardo D. Trowbridge tried to create the Sociedad General de Electricidad de Valencia. This group wanted to use substantial amounts of energy (40,000 HP)<sup>30</sup> to reach an agreement with all the distribution companies in the electricity market in Valencia. To the extent that this company was not successful

28. Not Barcelona Traction, the dominant company in the Catalan market, as the press claimed. See the interesting explanation in *La Energía Eléctrica* (1913, p. 272). AISA. Hidroeléctrica Española, S.A. Correspondence with subsidiaries. Correspondence with Electro-Hidráulica del Turia (1930–1936). AISA. Hidroeléctrica Española, S.A. Correspondence with subsidiaries. Correspondence with Electra Valenciana (1910–1915). “In 1912, AEG and its partners sold most of their Barcelonesa stock to F.S. Pearson. This Canadian group founded a company called Barcelona Traction, Light & Power and promoted a new project based on hydroelectric power plants and the construction of a regional network. The initial project failed, and the company was transferred to Sofina in 1913.” Lanciotti and Bartolomé (2014, p. 726), Hidalgo (2020, pp. 443-444).

29. See the interesting explanation in *La Energía Eléctrica* (1913, p. 273) on the subject, and Lanciotti and Bartolomé (2014).

The Canadian advantages for large scale international investments in public utilities were not a strong domestic electrotechnical industry but “lay in experience with home electric utilities, access to British capital markets, and the ability to tap U.S. engineering talent”. Hausman, Hertner and Wilkins (2008, p. 65). The strategy of Barcelona Traction was “an extension of what the Canadians had been undertaking in Latin America”. Hausman, Hertner and Wilkins (2008, p. 88). This is, to transfer their domestic knowledge (industrial and financial) to the setting up and running of utilities abroad, operating in overlapping circles of relationships.

30. It wanted to be generated from a future regulated reservoir to electrify the Compañía de Ferrocarriles del Norte, as well as supply the markets of three local companies: HEV, EM and HPS (see the final list of abbreviation in the appendix). The Trowbridge project was recovered by REVA managers in 1928, camouflaging the regulation of the waters of the Turia River after the appearance of an agricultural business. Hidalgo (2020, pp. 442-445).



in this task,<sup>31</sup> the result was the formation of alliances between companies, which were taken over several years later. Electra Valenciana, for example, took over the services of two of the main distributors of the capital of Valencia,<sup>32</sup> obtaining low voltage distribution throughout the city from Hidrola.<sup>33</sup>

## The dynamic twenties

### *The participation of English capital: SAFE and its subsidiary CVE*

In order to get their technology to market more quickly, British investors sponsored the creation of “cooperatives”, to remove the small distributors by offering lower electricity prices than those then existing in the market. These enterprises, instigated by certain local industrialists and backed by powerful foreign investors, became the defenders of the popular cause against the electricity oligopoly in the 1920s. At that time, the agreement between Barcelona Traction and Hidrola to respect the Catalan and the Levantine markets, respectively, was still in force (Tedde & Aubanell, 2006).

The most important association was the Cooperativa Valenciana de Electricidad (CVE), created in 1922 by the Federación Patronal de Valencia to solve the problems of electricity supply in the capital. For this purpose, CVE had signed a joint-venture agreement with several English firms resulting in the foundation of Sociedad Anónima de Fuerzas Eléctricas (SAFE) in London<sup>34</sup> (Hidalgo, 2012).

31. Such as in the acquisitions of Hidro-Eléctrica de Valencia and the waterfalls of Las Agujas and Tous.

32. Lebón y Compañía (1913) and Electro-Hidráulica del Turia (1918). AISA. Hidroeléctrica Española, S.A. Correspondence with subsidiaries. Electra Valenciana. Agreement between Electra Valenciana and Lebón y Compañía. AISA. Hidroeléctrica Española, S.A. Subsidiary Companies. Volta, S.A. and documentation on the sale of the Electro-Hidráulica del Turia business to Volta and Electra Valenciana (1917–1922).

33. With this alliance, Electra Valenciana consolidated itself as a solid distributor in exchange for losing its hegemonic position in its market. Hidrola, in contrast, managed to expand its market while waiting for the launch of the Villora waterfall in exchange for taking on half of Electra Valenciana’s losses and releasing this company from the exclusivity in the supply.

34. The Federación Patronal de Valencia presented to the City Council the project of CVE, which had previously signed a contract to purchase energy with the London firm Harper Brothers.

The Board of Directors of SAFE was composed of representatives of British industrial equipment companies (British Thomson-Houston, Armstrong & Whitworth, Babcock & Wilcox, Harper Brothers) and CVE, with two executive committees, one in London and the other in Valencia. AISA. Subsidiary Companies. Contract between the Cooperativa Valenciana de Electricidad and the Sociedad Anónima de Fuerzas Eléctricas (SAFE) for the supply, construction and laying of the distribution network. AISA. Subsidiary Companies. Sociedad Anónima

In 1925, the financial difficulties CVE had to build the Grao-Valencia thermal plant and to extend the distribution network in and around the city compelled SAFE to sign an electricity purchase agreement with Energía Eléctrica del Mijares and other distributors. A year later, Power Securities took control of SAFE (Hausman, Hertner & Wilkins, 2008) and, in June 1929, SAFE and Financiera (Sofina's Spanish subsidiary)<sup>35</sup> signed an agreement to enable the exchange of energy of two of its subsidiaries, CVE and Sociedad Valenciana de Electricidad, respectively.<sup>36</sup>

In short, the consolidation of the SAFE-CVE tandem and the competition from the Sociedad Valenciana de Electricidad and, later, from Energía Eléctrica del Mijares worried Hidroeléctrica Española (Hidrola), although it did not affect its position of dominance in the Valencia market. As in other peninsular markets, the development of the Spanish electricity sector at this stage did not come as much from the internal growth of the existing companies as from the start-up of large companies/new plant projects (Núñez, 1995).

In summary, the British penetration into the distribution of electricity in the Levant market was a failed attempt that, ultimately, only reflected the growing loss of its competitiveness against French and American rivals and, above all, the German electricity sector<sup>37</sup>. However, at the business level, we cannot specify its scope because we do not know the terms of the agreement with Financiera. That is, whether the British allocations in the field of electricity commercialization could be partially covered by the maintenance of a privileged distribution channel of electromechanical equipment. Let us remember its main business objective. What we are sure of is that this strategy of penetration into the market via cooperatives, although it was occasionally practiced by some large Spanish electricity companies (e.g., Ibérica in Bilbao and Hidrola in Madrid) at the beginning of the 20th century, is an original strategy in a foreign company of electrical equipment material in the 1920s.<sup>38</sup>

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de Fuerzas Eléctricas (SAFE). Minutes book of the Executive Committee/Executive Committee/Permanent Executive Committee (12/10/1922–21/10/1926). AISA. Subsidiary Companies. Comercial Valenciana de Electricidad. Management contract between Sociedad Anónima de Fuerzas Eléctricas (SAFE) and Cooperativa Valenciana de Electricidad (1930).

35. Barcelona financial company, subsidiary of the Belgian Sofina, and identified in some sources as Sofineta.

36. AISA. Subsidiary companies. Sociedad Anónima de Fuerzas Eléctricas (SAFE). Minutes book of the board of directors. (28/10/1922–21/5/1956).

37. Puig, Álvaro and Castro, Rafael (2008).

38. Castro-Balaguer (2011); Álvaro-Moya, Adoración (2012).

*The Belgians of Électrobel and their link with Hispanobel*

Hispanobel was established in Brussels in October 1929 by the Catalan group Pescara and the Belgian *Électrobel* to regroup their interests in Spain (Tramelec and Sociedad Valenciana de Tranvías), and above all to develop the activity of Regadíos y Energía de Valencia (REVA). Hispanobel had as its social goal a wide range of activities related to the use of water concessions for agricultural uses (irrigation and cultivation) and industrial uses (commercial and industrial electrification). The company could act in several countries, particularly in Belgium, and, above all, in Spain. For this purpose, it had a share capital of 400 million Belgian francs: the money that several financiers used to found *Électrobel* (Brion & Moreau, 2013).

From its creation, Hispanobel managed the industrial assets that *Électrobel* had in Spain, among them REVA. In its investment portfolio, the Belgian holding company had majority control of five major Levantine electricity companies (SVE, UEL, HEV, HM and HEA) [Table 3]. The operating life of Hispanobel was short, because it was ultimately swept away by the bankruptcy of REVA and indirectly by the struggle sustained by *Électrobel* with Sofina and with the large Spanish electricity companies.

**TABLE 2.** ▪ *Technical equipment and market of the companies of the electricity group of REVA in 1929*

Companies	Power station		kW		Localities served by province			Total population
	(1)	(2)	(1)	(2)	Valencia	Castellón	Alicante	
Valenciana de Electricidad	3	1	4,850	2,500	15			353,882
Unión Eléctrica Levantina	5	1	600	250	40			77,344
Hidroeléctrica del Mijares	5	3	2,290	570	6	38		175,500
Hidro-Eléctrica de Valencia	4	2	1,300	455	18		4	76,469
La Hidro-Eléctrica Ayelense	1		40		4			22,279
Total	18	7	9,080	3,775	83	38	4	705,474

Source: Correspondence with Unión Eléctrica Levantina (1917–1936). May 1930. Hidroeléctrica Española, S.A. Archive of Iberdrola. Alcántara (Cáceres). (1) Hydraulic. (2) Thermal.

Hispanobel's investments in the Levant were a total failure, taking into account that its parent company, *Électrobel*, had to cover losses at an estimated half of its capital stock; especially when its banks, Banque de Bruxelles and Société Générale,<sup>39</sup> could not come to its aid. Hispanobel's problems

39. Additionally, the Urban's efforts to make Société Générale even more committed to solving the problems of *Électrobel* in Spain failed.

stemmed from the paralysis of the REVA project when the planned state subsidies of the Government of Primo de Rivera in the 1920s were cancelled. As a result of all of the above, *Électrobel* lost its solid initial position in the European reorganization of the electricity businesses (Bussière, 1992).

At the end of 1929, the two Belgian banks cited had drawn closer in order to put an end to the electricity competition (Hausman, Hertner & Wilkins, 2008). Likewise, Sofina and Société Générale signed a secret agreement several months later to rationalize their electricity companies, delimiting, among other issues, their areas of influence; which, in the end, resulted in a reorganization of *Électrobel* (Broder, 1985a; Brion & Moreau, 2013).

Just two years after it was set up, Hispanobel went into liquidation and *Électrobel* recovered its Spanish assets,<sup>40</sup> including those of REVA.

### *The productive integration of the River Turia: REVA and Elektrobank*

REVA was set up in July 1928 in Barcelona by the Swiss interest of Elektrobank and a group of Catalan companies. If the founding capital of the company (4 million pesetas) was adjusted to the cost of the initial studies, the final project was more ambitious: 150 million Swiss francs.<sup>41</sup> The Belgians of *Électrobel* soon displaced Swiss capital, when its subsidiary Hispanobel took control of the shares that Elektrobank had in REVA.

The strategy of REVA was to achieve wide economies of scale and scope with the new regulation of the Turia River. This initially consisted of the construction of three dams and five hydroelectric power stations to generate electricity and irrigation. The key to the business lay in obtaining the succulent subsidies that the state offered for this type of project (Bartolomé, 2011). But, while it achieved this objective, the strategy of REVA was to get an electrical market in the Levant by purchasing the largest number of their distributors, at the same time as curbing the expansion of Hidrola (Tedde & Aubanell, 2006) [Table 3].

REVA's profit prospects were most likely calculated while taking into account the yields obtained by Belgian investors in other international electricity markets and in the confident expectation to exploit the third most dynamic (agricultural, industrial and urban) market in Spain, but not sufficiently integrated from the electrical point of view (Garrués, 2012).

40. In Société des Tramways et de l'Electricité de Bilbao, in Sociedad Valenciana de Tranvías and REVA.

41. As a first step, six months after its creation its managers considered increasing the initial capital of the company by an extra 60 million pesetas.

The ambitious regulation project failed when REVA could not obtain the concessions and, consequently, the corresponding state subsidies on the Turia River (RD 05/13/1929).<sup>42</sup> The suspension of the public works plans established by the new dictatorial government of Primo de Rivera did nothing more than reflect the political and economic instability of Spain, as well as the international financial consequences of the 1929 crisis. But in this general context, the opposition raised by Grupo Hidroeléctrico played a large part in the denial of the concessions (Lanciotti & Bartolomé, 2014) by mobilizing all its available resources, from its political contacts in Madrid to the associations of irrigators, to put the brakes on such dangerous competition.

By prioritizing irrigation projects over electricity production, REVA had to abandon its Turia hydroelectric regulation project. In 1931, the company sold the shares of its distributors and producers in Électrobel to a new company (LUTE) that was progressively responsible for organizing the Levant electricity market. This process accelerated definitively once Sofina acquired some of the main Levant producers.<sup>43</sup>

What was the real power of the electricity group led by REVA? In 1929, the group, with an installed potency of 12 MW, produced 17% kilowatts less than the companies controlled by Hidrola. It distributed mainly in 125 localities of Levant, to a population of about 705,474 inhabitants, with about 67,000 subscribers<sup>44</sup> [Table 2].

Meanwhile, to avoid competition in Castellón, Hidrola promoted the grouping of all its facilities into a new company, Unión Eléctrica Valenciana, and in Valencia it reached a supply agreement with the subsidiaries of REVA and of common tariffs with SAFE [Map 1].

REVA and its subsidiaries were integrated into LUTE in 1931 [Figure 2 and Table 3]. In the merger negotiations in Brussels, Électrobel and Sofina agreed to maintain the existing tariffs in the shared markets. Both cooperated in the elaboration of a plan to separate and make viable the agricultural businesses of REVA's electricity companies (Brion & Moreau, 2013).<sup>45</sup>

42. The Royal Order of May 13, 1929 suspended the processing of all and any projects which intended to make use of the Turia river, until the dam of Loriguilla, which was to supply the city and the garden of Valencia, was built.

43. SVE, UEL, HM, HEA and HEV.

44. An extensive and detailed list of the localities supplied and the power plants and their installed power of all the agents that operated in Levante between 1881 and 1960 can be consulted in Hidalgo's doctoral thesis (2020).

45. Thus, in September 1931, an agreement was signed between LUTE, Électrobel and Hispanobel for the segregation of the electricity businesses of the REVA group.

*How was the electricity market organized in the 1920s and early 1930s and what changes had occurred since its inception?*

Before regional integrated electrical systems (IES) were imposed after World War II, the Levantine electrical district was characterized by the early overlap of two electrical systems: one, the business electricity system of Hidrola, the dominant company in this market, and, two, the traditional electricity system (TES) developed in this territory between the end of the 19th century and the First World War. With the new opportunities that came about from then with high voltage and hydroelectricity (Hughes, 1993),<sup>46</sup> on the one hand, Hidrola's growth in the Levantine market accelerated and, on the other hand, a new path of penetration into regional electricity businesses was thrown open to foreign investment. To this end, foreign companies tried to equip themselves with new production and distribution resources of their own, but they also made an effort to control or reach contractual agreements with the old Levantine TES independent of Hidrola [Map 1]. That is, through several medium-sized electricity companies (Volta, Energía Eléctrica del Mijares, Unión Eléctrica Levantina, La Electro-Textil), as well as a good number of small commercial distributors (SECE, Hidro-Eléctrica de Valencia, Electro-Hidráulica del Turia, Herencias Pardo-Sánchez, Viuda de Federico Estela, Bort y Cía)<sup>47</sup> [Table 3]. In this scenario of interaction and confluence between the old TES and the new IES, complex market situations emerged. Competition and inter-business cooperation intermingle depending on the play of forces that were established in each district, city, and town (Hidalgo, 2020).

46. It should be clarified that the term “regional electrical systems” only coincides with that developed by Hughes in the importance of technological aspects (hydroelectricity, high voltage and interconnection development) for the expansion of the scale of business operations until reaching the regional scope. The regional electrical systems that Hughes talks about are planned according to master plans (chapter XII) and are intended to rationalize the distribution of electricity to achieve the benefits of a universal system. Its configuration demanded, under a certain combination of ideas and technological culture, values and institutions, where the joint action of a broad community of actors (politicians, engineers, businessmen and builders) gave rise to a “systems culture” (Chapter XIII). This path began in Spain, by delegation of the state to companies, much later with the creation of UNESA (López-García & Garrués-Irurzun, 2014). To contrast what happened in Spain with what happened in other countries regarding the rationalization of interconnection systems and state intervention, especially after World War I, see among others Hausman (2008).

47. Hidalgo (2020, p. 271 and appendices).



**TABLE 3.** • *The productive evolution of the Levantine electricity market and business concentration (GWH)*

Companies	Competitive (1900-32)	Oligopolistic (1933-43)	Duopolistic /Monopolistic (1944-53/60)	%		
	1925	1943	1953	1925	1943	1953
1. HIDROLA	122	221	568	63	63	93
2. VOLTA*	18	–	–	9	–	–
3. LUTE	–	85	–	–	24	–
4. SOC. VALENCIANA	17	–	–	9	–	–
5. TES** (>100)	36	47	45	19	13	7
6. Levante	193	353	613	100	100	100
7. Levante/Spain (%)	9.9	10.6	9.2			
HHI***	4,396	4,714	8,698			

Source: Prepared by the authors.

LUTE: *Comercial Eléctrica* (1924-50); *Compañía Industrial de Electricidad* (1925-40); *La Hidroeléctrica Castellonense* (1918-40); *La Electro Industrial* (1919-40); *Sociedad Española de Construcciones Eléctricas* (1912-52); *La Eléctrica Enguerina* (1898-48); *Sociedad Anónima de Fuerzas Eléctricas* (1922-57); *Cooperativa Valenciana de Electricidad*; *Comercial Valenciana de Electricidad* (1943-52); *Riegos y Energía de Valencia* (1928-53); [REVA: *Sociedad Valenciana de Electricidad* (1901-57); *Sociedad Hidroeléctrica de Valencia* (1984-44); *Hidroeléctrica del Mijares* (1920-43); *La Hidroeléctrica Ayelense* (1895-50); *Unión Eléctrica Levantina* (1916-50); *Sociedad Valenciana de Electricidad* (1901-1957)].

VOLTA: *Distribución Eléctrica Valenciana* (1929-32); *Electra Valenciana* (1910-57); *Compañía Eléctrica Utielana* (1941-63); *Distribuidora de Energía Eléctrica de Torrente* (1943-69); *Dynamis* (1920-68); *Electra de Levante* (1924-60); *Electra Valenciana* (1910-57); *Energía Eléctrica del Mijares* (1923-60); *Hidroeléctrica de Levante* (1930-60); *La Electra del Gabriel* (1901-60); *La Electricista Alcoyana* (1894-60).

\* From 1927 it was under the effective control of HIDROLA. \*\* TES: Traditional Electricity System.

\*\*\* IHH: Herfindahl–Hirschman Index

It should be borne in mind that in this article the term competition is used in a broad sense, which goes beyond that which refers to effective price competition. This term refers to the potential competition or competitive threat that one or more electricity companies, installed or not in the market, may present to those already established in it. In short, it tries to take into account the real possibilities of entry that one or more electricity companies could have in a specific market by using the hydroelectric exploitation of new production and distribution centers and/or existing ones.

### **From competition to oligopoly: the delicate balance between local and foreign capital**

On March 13, 1930, LUTE was set up in Barcelona, subscribing to the promoter (Financiera/Sofina) all of the shares put into circulation. Why did

LUTE become from its inception “the other” great Spanish-Levant firm? Primarily, because of the strong support of foreign capital, specifically for the participation of Sofina, just when the initiative passed to powerful financial groups which promoted new plants. This allowed quick control over a wide group of companies, as well as the acquisition of the electricity businesses of the Banco de Castellón [Figure 2].

In 1931, LUTE was in control of seven electricity companies from Valencia, owned by *Électrobell/Hispanobel*;<sup>48</sup> months later, it governed SAFE and CVE groups, and as of 1932 participated in five societies in Valencia (SVE, UEL, HEV, HEA and HM) and others in Castellón (HM, ET, CIE, HC y CE)<sup>49</sup> [Table 3]. After that, this important electricity group acted in the Levantine market for two decades, until Hidrola absorbed it in 1953<sup>50</sup> [Map 2].

Electrobél, one of LUTE’s main shareholders, secured its interests by creating a management-union with Financiera/Sofina. The interference of Financiera (Sofina in Spain) in the market of the Levant meant breaking the old agreement with Hidrola, which led to an unstable market. The first consequence was that this company broke off negotiations with a British group<sup>51</sup> to acquire the thermal power plant of Valencia (SAFE).<sup>52</sup> The second effect, according to the new competitive situation, was that it had to face the denunciation of some of its supply contracts with small and medium clients before the courts of justice.

In the electricity sector, ensuring the long-term stability of investments requires establishing entry barriers to new competitors. Given the risk involved in the entry of companies backed by major European financiers in 1927, Hidrola’s strategy changed with respect to its main distributors. The solution that was considered most appropriate was the concentration of the electricity businesses. As a consequence, in 1932, the Spanish electricity group was clearly established in the Levant [Figure 3]. In this market, Hidrola was composed of one generator, three medium producers/distributors (Volta, EEM, EL) and two significant distributors (EV and DEVA).

48. Hidalgo (2020, p. 285; pp. 460-461).

49. AISA. Subsidiary Companies. Compañía de Luz y Fuerzas de Levante (LUTE). Minutes book of the Board of Directors. N° 1 (31/03/1930–28/05/1942).

50. AISA. Subsidiary Companies. Comercial Valenciana de Electricidad. Correspondence on the merger by absorption of Comercial Valenciana de Electricidad and Compañía de Luz y Fuerza de Levante, S.A. (LUTE) (1951–1952).

51. This group was formed by the British construction companies British Thomson-Houston, Armstrong & Whitworth and Babcock & Wilcox and the managers of Harper Brothers, Power Securities and Balfour Beatty.

52. In those days, Financiera’s agents continued with the promotion of electricity cooperatives that began in the 1920s.

The position and independence of the small producers and distributors became even more vulnerable with the competition generated by the entry of British and Belgian capital in the 1920s. The competitive advantage of the new generators was in their ability to place important blocks of energy, adjusting production to demand (Antolín, 2003), through the control of pre-existing distributors in the market. This commercial policy contrasted with the one traditionally developed by Hidrola to supply electricity through distributors, without establishing strong ownership links with them. One of its most distinguished executives, José Luis de Oriol, raised on numerous occasions, not without resistance by other managers, the need to organize the market of the province of Valencia through “successive controls”. This strategy was finally carried out by consolidating the relationship with the Sociedad Valenciana de Electricidad, reaching agreements with Energía Eléctrica del Mijares, SAFE and CVE, as well as seeking new markets in the province of Castellón (Tedde & Aubanell, 2006).

The disastrous consequences of the Levantine competitive market on the results of the companies after 1928 explain why two years later the “Mutual Aid Pact” was signed.<sup>53</sup> At the proposal of Hidrola, a group of important Spanish companies (Ibérica, Viesgo, Unión Eléctrica de Cartagena, Electra Valenciana, Unión Eléctrica Vizcaína, Electra Madrid, Lima and Volta)<sup>54</sup> agreed on the constitution of a long-term mutual assistance fund —20 years—in response to third-party competition (Aubanell, 2000). The fund was established through the contribution of 3.5% of the gross revenue from the sale of electricity. The agreement sought, on the one hand, to assure the signatories a 6% dividend that did not affect financing and, on the other hand, to endow the companies affected by the competition with a maximum aid of 15% of the average income of the previous two years.

The Levantine electricity sector accelerated its process of oligopolization between 1933 and 1943, also, due to the resulting balance of forces among the groups of Hidrola and LUTE. In 1932, after tough negotiations, these companies signed an agreement that established a “Joint Committee for the Intervention in the Electricity Market of Valencia and Castellón”.<sup>55</sup> The alliance, established initially for a minimum of 15 years, allocated the distribution of electricity in the south-eastern Spanish region. LUTE renounced the distribution of electricity in the provinces in which Hidrola operated,

53. The details of which are documented in Hidalgo (2020, pp. 333-37; pp. 467-78).

54. AISA. Collection of documents of subsidiary companies. Volta, S.A. Various (1930). Archive of Iberdrola. Alcántara (Cáceres).

55. AISA. Collection of documents of subsidiary companies. Volta, S.A. Joint Committee Agreement between the Spanish Hydroelectric Group, its subsidiaries and LUTE for the best use of resources and electric power (1946–1947).

handing over its facilities in Alicante. Likewise, a criterion was set for the distribution of new customers according to the characteristic coefficients of each company. Rules and actions were drafted to defend against possible competitive interference, especially if it was foreign. The tariffs and supply conditions for all types of services were set and revised up to 500 kW of power installed.

However, to properly understand the change in business strategies, it is necessary to bear in mind the strong conditioning that the deglobalization process had from the end of the 1920s on the restructuring of the investment policies of international electricity holding companies, and, in this case, on Southern Europe (Ferreira and Bartolomé, 2019). The key to the success of national policies in restricting the opportunities of electricity holding companies and their subsidiaries in Spain, must also be understood as a result of the diversification and investment concentration policy that they undertook worldwide, for economic reasons, in the face of changes in the general political context in these critical years.

## Discussion

*What impact did foreign investment have on the configuration and integration of the Levantine and, by extension, the Spanish electricity system, during the interwar period?*

What really distinguished the Levantine electrification model in the first third of the twentieth century from what happened in the most dynamic regions of the country, such as the Basque Country, Catalonia or Madrid, was the late influx of foreign capital. The second wave of international investment not only accelerated the process of integration of the Levantine electricity market but also had a significant impact, due to the defensive attitude of the Spanish electricity-financial lobby, on the dynamics (competitive/oligopolistic) of their regional electricity systems.

This investment disrupted the previous status quo of the regional electricity companies, generating a period of intense competition in a market dominated by traditional electricity systems. It must be borne in mind that it is perfectly compatible to defend two positions that, in principle—in the literature on the subject—seem antagonistic. The first, that in the Spanish electricity industry of the 1940s, the conditions typical of a competitive market did not exist, but rather an oligopoly that operated with a high degree of monopoly (Muñoz Linares, 1954; Antolín, 1999). The second, that in some regional markets still at that time, but especially in earlier stages, competitive situations arose because the electricity companies that acted as leaders had not consol-

idated their monopoly positions (Garrués, 1994). In this sense, the Levantine case is a good example (Hidalgo, 2012, 2020).<sup>56</sup>

What is not questionable is that the new operators in the Levantine market, and in its rapid territorial expansion, modified the relationships that had been established for years between the different electricity companies. Foreign investment materialized in the formation of large electricity groups at a regional scale over which they had direct control, such as SAFE, Sofina, *Électrobel*, Hispanobel or LUTE, or indirect control, in the case of subsidiaries. Without being de jure, in reality, they acted as true regional holdings. Their structure, entangled and obscured, served to bypass state intervention, as well as to raise multinational funds initially attracted by low entry costs. Their actions sought to reproduce in the Levant the “absolute control strategies” of the energy markets that certain holdings had carried out in other international markets in the 1920s, such as in France or Belgium. The result, given the context of the international financial crisis (Ferreira and Bartolomé, 2019) and the peculiar organizational and institutional structure of the Levantine market (Hidalgo, 2020), turned out to be a failed business story for European promoters.<sup>57</sup>

The modification of the status quo forced the leading regional company, Hidrola, to develop a “strategy of successive controls”, which varied according to whether they sought to maintain relationships between related companies, reach agreements with competitors, or extend into new markets to defend against the “intrusion” of international financial capitalism. In a gradual way, the process of business concentration which occurred began to affect, firstly, the companies specialized in power generation and, subsequently, the rest of the distributors/suppliers. This integration did not initially mean a large adjustment in the number of installations in the Levantine electricity market, although the case was different for its main electrical companies after the creation of the Joint Control Committee (1932) in defense of regional interests.

56. Regarding the first question, it is necessary to point out that the managers of large Spanish hydroelectric plants in the 1920s acted in a coordinated manner when it came to defending the status quo. This became visible, first, before other national producers, such as, for example, the irruption of a new producer such as Saltos del Duero (Morlán, 2006; Aubanell, 2006). Later, there is also a certain collective action, in the heat of the nationalist policy of the Primo de Rivera dictatorship, against foreign interests. In fact, the support of the state (hydraulic concessions, financial aid and nationalization of capital) was important in the development of the large Spanish electricity companies and, as has been indicated with respect to hydraulic concessions, decisive for the expansion of Hidrola in the Levant Spanish in the 1920s and 1930s (Aubanell, 2006).

The Franco dictatorship, as regards foreign electricity investment, strengthened the positions of the Spanish electricity oligopoly (Rubio & Garrués, 2016; Fraile, 1999; Alcalde, 2004) and, as seen in this article, also the dominant company in the Levantine market, Hidrola.

57. Despite this, after the Civil War some foreign subsidiaries of the Iberian Peninsula once again became recipients of investments, first, as a refuge for capital, and sometimes, as in Portugal, linked to electrification projects. Lanciotti and Bartolomé (2014).

In theory, the incidence of foreign capital did not have to lead to business concentration. However, when involved in strong competition with local interests, the electricity companies affected—in the first instance Hidrola—were forced to modify their traditional strategies. Among these, the following would seem to be particularly noteworthy aspects: increasing their productive resources, reordering their consumption sectors, modernizing their technological conditions, and, especially, promoting the integration of their traditional electrical systems. The competition was very positive for the process of Levantine electrification, but, as this fight was carried out without any type of regulation or plan, its economic valuation is debatable in terms of social and dynamic efficiency.

The competition between the two large groups—the foreign and the national—evolved towards a situation of commercial and financial equilibrium, where the more consolidated local companies strengthened their market power defensively, through barriers of entry. In other words, foreign investment reinforced the ties between the various companies that were part of the so-called Hydroelectric Group and that materialized in the signing of the well-known “Mutual Aid Pact” (1930); a tool created ad hoc for the mutual defense of the interests of the national production companies linked to the Banco de Vizcaya (Bartolomé, 2018). The creation of the “Joint Committee for the Intervention of the Electricity Market of Valencia and Castellón”, signed two years later between Hidrola and LUTE, was a harsh reality for the Belgian holding. The refined strategy of “absolute control” of secondary energy markets, so effective in other peripheral countries, failed in Spain. After four years of unsuccessful financial effort, the distribution of the Levant electricity market was not in favor of foreign companies, as is shown by REVA’s liquidation.

While it is true that neither of the two large business groups managed to eject the other from the market, in the end, the signing of a collusive agreement relatively satisfied both. The best proof of this is that the agreement remained in force, thanks to the economic nationalism of the first period of the Franco dictatorship, for some twenty years.

## References

- ALCALDE, R. (2004). *El cas “Barcelona Traction”. Política i capital en el final de la Canadenca*. Barcelona: Doctoral Thesis at the Universidad de Barcelona.
- ÁLVARO-MOYA, A. (2012). *La inversión directa estadounidense en España. Un estudio desde la perspectiva empresarial (c. 1900-1975)*. Madrid: Banco de España, 60.
- ANTOLÍN, F. (1999). “Iniciativa privada y política pública en el desarrollo de la industria eléctrica en España. La hegemonía de la gestión privada, 1875-1950”. *Revista de Historia Económica*, XVII, 2, pp. 411-445.



- (2003). “Global Strategies and National Performance: explaining the singularities of the Spanish electricity supply industry”. *Business and Economic History On-Line*, pp. 1-19.
- AUBANELL, A. (2000). “Estrategia empresarial y estrategia financiera de la Sociedad Hidroeléctrica Española, 1907-1935”. *Revista de Historia Industrial*, 17, pp. 153-185.
- (2007). “Il capitale straniero nell’industria elettrica a Madrid”, in M. Doria; R. Petri, *Banche, multinazionali e capitale umano nell’era della globalizzazione economica (secoli XIX-XX)*. Milan: Franco Angeli, pp. 199-221.
- BARTOLOMÉ, I. (2009). “Un holding a escala ibérica. Electra del Lima y el Grupo Hidroeléctrico (1908-1944)”. *Revista de Historia Industrial*, 39 (Año XVIII), pp. 119-151.
- (2011). “¿Fue el sector hidroeléctrico un gran beneficiado de la política hidráulica anterior a la Guerra Civil? (1911-1936)”. *HISPANIA. Revista Española de Historia*, LXXI (239, september-décembre), pp. 789-818.
- (2012). “The smaller the market, the better the rent capturing: electrification in north Portugal during the interwar period”. *Revista de Historia Económica / Journal of Iberian and Latin American Economic History*, 30 (Issue 02 / September 2012), pp. 287-320.
- (2014). “La inserción internacional de la primera electrificación española y los antecedentes del mercado ibérico (1890-1940)”. *Revista de Historia de la Economía y de la Empresa*, 8, pp. 97-122.
- (2018). “Les antécédents de la régulation du service d’électricité en Espagne (1890-1945)”. *Histoire, Économie & Société*, 3, pp. 47-73.
- BRION, R. (1994). *Le rôle de la Sofina*. In M. Trédé-Boulmer, *Le financement de l’industrie électrique, 1880-1980*, Paris: PUF, pp. 217-232.
- BRION, R.; MOREAU, J.-L. (2013). *Inventaire des archives du groupe ELECTROBEL alias Compagnie Générale d’Entreprises Électriques et Industrielles et des sociétés qui l’ont précédée (1862-1989)*. Brussels: Archives Générales du Royaume.
- BRODER, A. (1982). “L’expansion internationale de l’industrie allemande dans le dernier tiers du XIX<sup>e</sup> siècle: le cas de l’industrie électrique (1880-1913)”. *Relations Internationales*, Spring (29), pp. 65-87.
- (1984). “La multinationalisation de l’industrie électrique français, 1880-1931: Causes et pratiques d’une dépendence”. *Annales (E.S.C.)*, 39 (5), pp. 1020-1043.
- (1985a). “Le financement et le contrôle de l’industrie électrique dans les pays de la façade nord de la Méditerranée: 1890-1929”. In VVAA, *Banque et investissements en Méditerranée à l’époque contemporaine: actes du Colloque de Marseille, 4-5 février 1982*, Marseille: Chambre de commerce et d’industrie de Marseille, pp. 85-102.
- (1985b). “Électricité et relations internationales dans l’entre-deux-guerres”. *Relations Internationales*, pp. 269-287.
- (2001). “Les investissements suisses en Espagne (1890-1955)”. In M. Cerutti, S. Guex, P. Huber (eds.), *La Suisse et l’Espagne de la République à Franco (1936-1946)*. Lausanne: Antipodes.

- BUSSIÈRE, É. (1992). *La France, la Belgique et l'organisation économique de l'Europe, 1918-1935*. Paris: CHEEF.
- CAPEL, H. (1994). *Las tres chimeneas. Implantación industrial, cambio tecnológico y transformación de un espacio urbano barcelonés*. Barcelona: Fecea.
- CASTRO-BALAGUER, R. (2011). *Génesis y transformación de un modelo de inversión internacional: el capital francés en la España del siglo xx*. Doctoral thesis. Madrid: Universidad Complutense de Madrid.
- DALLA-CORTE, G. (2006). "Empresas, instituciones y red social: la Compañía Hispanoamericana de Electricidad (CHADE) entre Barcelona y Buenos Aires". *Revista de Indias*, 66 (237), pp. 519-544.
- DAVID, P. (1992). "Heroes, herd and hysteresis in technological history: Thomas Edison and the 'Battle of the systems' reconsidered". *Industrial and corporative change*, I (1), pp. 129-180.
- DÍAZ MORLÁN, P. (2006). "Saltos del Duero (1918-1944)". In G. Anes Álvarez, *Un siglo de Luz. Historia Empresarial de Iberdrola*, Bilbao: Iberdrola, pp. 279-324.
- DORIA, M.; HERTNER, P. (2004). "Urban growth and the creation of integrated electricity systems: The cases of Genoa and Barcelona, 1894-1914". In A. Giunti, P. Hertner, *Urban growth on two continents in the 19th and 20th centuries. Technology, networks, finance and public regulations*. Granada: Comares, pp. 230-247.
- DUCHENNE, G. (2008). "Esquisses d'une Europe nouvelle: l'europhisme dans la Belgique de l'entre-deux-guerres (1919-1939)". (Peter Lang, ed.). *Euroclio: Etudes et documents* (40), pp. 1-712.
- FELDMAN, G. (1990). Penetración extranjera en las empresas alemanas tras la Primera Guerra Mundial: el problema de la überfremdung". In L.-L. and Teichova, *Empresas multinacionales, finanzas, mercados y gobiernos en el siglo xx*, Vol. II. Madrid: Ministerio de Trabajo y Seguridad Social, pp. 113-141.
- FERNÁNDEZ, M. (2009). "Empresas y servicio de alumbrado público por gas en España (1842-1935)". *Transportes, Servicios y Telecomunicaciones*, december (16), pp. 108-131.
- FERREIRA DA SILVA, A; BARTOLOMÉ RODRÍGUEZ, I. (2019). "Electric power industry." In SILVA LOPES, T.; LUBINSKI, C.; TWOREK, H., *The Routledge Companion to the Makers of Global Business*. Abingdon: Routledge, pp. 332-348
- FRAILE BALBÍN, P. (1999). "Spain: Industrial Policy under Authoritarian Politics". In J. Foreman-Peck; G. Federico (eds.), *European Industrial Policy: The Twentieth-Century Experience*. New York: Oxford University Press, pp. 233-267.
- GARRUÉS, J. (1994). "La formación del mercado eléctrico Vasconavarro e Hidroeléctrica Ibérica". In M. Gárate; P. Martín-Aceña (coords.), *Economía y Empresa en el norte de España: (una aproximación)*. San Sebastián: Universidad del País Vasco.
- (1997). *Empresas y empresarios en Navarra: la industria eléctrica, 1888-1986*. Pamplona: Gobierno de Navarra.
- (2012). "Traditional Electricity Systems: Fensa (1927-1991)". *Revista de Historia Económica / Journal of Iberian and Latin American Economic History* (Second Series) (30), pp. 245-285.

- HAUSMAN, W.; HERTNER, P.; WILKINS, M. (2008). *Global electrification. Multinational enterprise and international finance in the history of light and power, 1878-2007*. New York: Cambridge University Press.
- HEINEMAN, D. (1929). “L'Équilibre économique”. *Pan Europa* (9/10).
- (1931). *Esquisse d'une Europe Nouvelle. Conférence doné le 28 novembre 1930 à Cologne et le 2 décembre 1930 a Barcelone*. Brussels.
- HERTNER, P. (1986). “Financial strategies and adaptation to foreign markets: the German electro-technical industry and its multinational activities: 1890s to 1939”. In A. Teichova; M. Lévy-Leboyer, *Multinational enterprise in Historical perspective*, Cambridge: Cambridge University Press, pp. 145-159.
- (1987). “Les Sociétés financières Suisses et le développement d'industrie électrique jusqu'à la Première Guerre Mondiale”. In F. Cardot, *1880-1980: Un siècle de électricité dans le monde*. Paris: PUF.
- HERTNER, P.; NELLES, V. (2007). “Contrasting Styles: A Comparison of the Entrepreneurship, Technology and Finance of German and Canadian Investment in Barcelona Electrification”. *Revue Economique*, 58 (1), pp. 191-214.
- HIDALGO, A. (2012). “Competencia y colusión en el mercado valenciano antes de la Guerra Civil”. *Revista de Historia Industrial*, 48 (1), pp. 81-117.
- (2020). *Mercado energético y empresas eléctricas. La electrificación de Levante*. Doctoral thesis. Universidad de Extremadura.
- HIDALGO, A.; GARRUÉS, J. (2015). “Inversión extranjera en el sector eléctrico levantino”. In P. Sunyer; E. Ribera; M. Checa-Artasu, *Actas del III Simposio Internacional Historia de la electrificación. Estrategias y cambios en el territorio y en la sociedad*. Barcelona: Universidad de Barcelona.
- KURGAN-VAN HENTENRYK, G. (1987). “Le régime économique de l'industrie électrique belge depuis la fin du XIX<sup>e</sup> siècle”. In F. Cardot, *Un siècle d'électricité dans le monde*, Paris: Presses Universitaires de France, pp. 119-133.
- LA ENERGÍA ELÉCTRICA (1913). *Las compañías eléctricas de Valencia*, 14, 25 de julio, p. 273
- LANCIOTTI, N. (2008). “Foreign Investments in Electric Utilities: A Comparative Analysis of Belgian and American Companies in Argentina, 1890–1960”. *Business History Review*, 82, pp. 503-528.
- LANCIOTTI, N.; BARTOLOMÉ, I. (2014). “Global strategies, differing experiences. Electricity companies in two late-industrialising countries: Spain and Argentina, 1890-1950”. *Business History*, 56 (5), pp. 724-745.
- LANTIER, P. (1994). “Holdings et sociétés d'investissement”. In M. Levy-Leboyer, *Histoire de l'électricité en France*, Paris: Fayerd, pp. 954-982.
- LÓPEZ-GARCÍA, S.; GARRUÉS-IRURZUN, J. (2014). “¿Estado emprendedor? El transporte de electricidad en España (1918/82-1985)”. In XI Congreso Internacional de la AEHE 4 y 5 de septiembre 2014. Madrid.
- LOSCERTALES, J. (2002). *Deutsche Investitionen in Spanien 1870–1920*. Stuttgart: Franz Steiner Verlag.

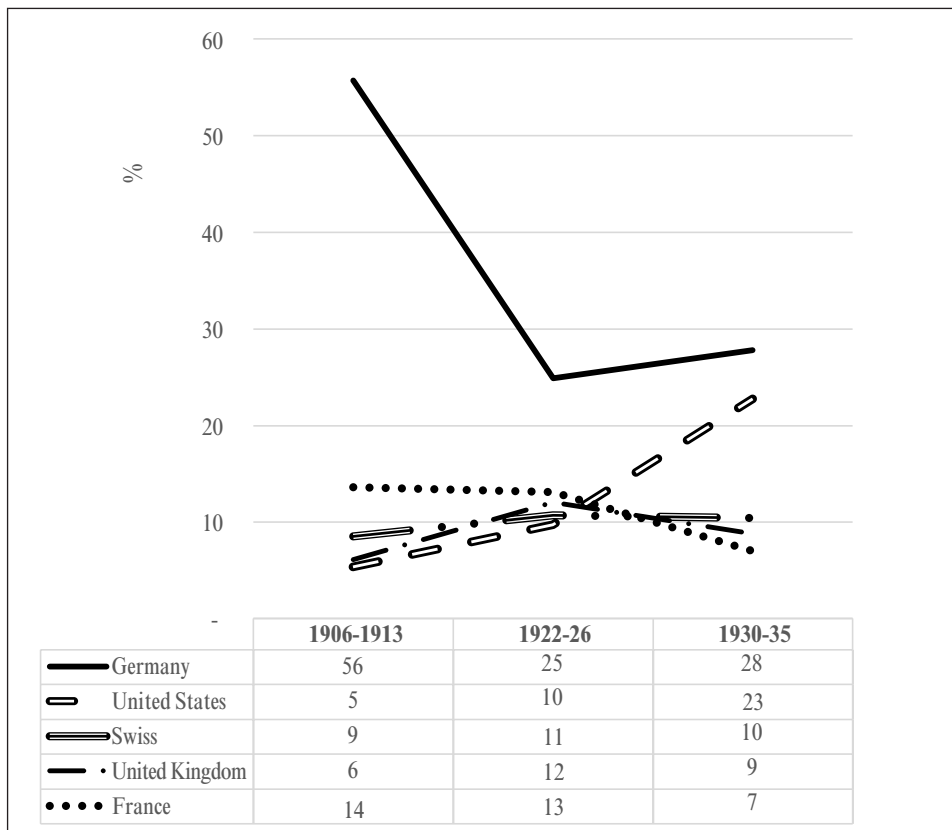
- MALLO, O. (2011). *El cártel español: historia crítica de la reconquista económica de México y América Latina (1898-2008)*. Madrid: Foca.
- MARGUERAT, P.; ROULET, L. E. (1992). *Diplomatic Documents of Switzerland*. Vol. 15, doc. 270, dodis.ch/47874, Bern.
- MUÑOZ LINARS, C. (1954). *El monopolio en la industria eléctrica*. Madrid: Aguilar.
- NÚÑEZ, G. (1993). *La Sevillana de electricidad (1894-1930) y la promoción multinacional en el sector electrotécnico*. Granada: Némesis.
- (1995). “Empresas de producción y distribución de electricidad en España (1878-1953)”. *Revista de Historia Industrial*, 7, pp. 39-80.
- PUIG, N.; ADORACIÓN, A.; CASTRO, R. (2008). “Las empresas multinacionales extranjeras en España”. In F. Ribera (ed.), *Los números uno en España*, Barcelona: Dobleer Editorial, pp. 19-46.
- NEUFELD, J. (2008). “Corruption, quasi-rents and the regulation of electric utilities”. *The Journal of Economic History*, 68 (4), pp. 1059-1096.
- PAQUIER, S. (2001). “Swiss holding companies from the mid-nineteenth century to the early 1930s: the forerunners and subsequent waves of creations”. *Financial History Review*, 8/ 02/ October 2001, pp. 163-182.
- PUIG, N.; ALVARO, A. (2016). “The long-term impact of foreign multinational enterprises in Spain: new insights into an old topic”. *Journal of Evolutionary Studies in Business, Special Issue International Business in Southern Europe in a Long-Term Perspective*, 1 (2), pp. 14-39.
- RUBIO, J. A.; GARRUÉS, J. (2016). “Economic and Social Power in Spain: Corporate Networks of Banks, Utilities and Other Large Companies (1917-2009)”. *Business History*, pp. 858-879.
- SAES, A. (2013). “Modernizing Electric Utilities in Brazil: National vs. Foreign Capital, 1889–1930”. *Business History Review*, 87(2), pp. 229-253.
- SEGRETO, L. (1992): “Du ‘Made in Germany’ au ‘Made in Suisse’. Les sociétés financières suisses pour l’industrie électrique dans l’entre-deux-guerres”. In M. Trédé, *Electricité et électrification dans le monde*, Paris: Presses Universitaires de France, pp. 347-368.
- (1994a). “Financing the electric industry worldwide: strategy and structure of the Swiss electric holding companies, 1895-1945”. *Business and Economic History* (23), pp. 162-175.
- (1994b). “Le rôle des investissements suisses dans l’industrie électrique française jusqu’à la deuxième guerre mondiale”. In M. Trédé-Boulmer, *Le financement de l’industrie électrique 1880-1980*, Paris: Presses Universitaires de France, pp. 199-216.
- (1994c). “Le rôle du capital étranger dans l’industrie électrique”. In M. Lévy-Leboyer; H. Morsel, *Histoire générale de l’électricité en France. L’interconnexion et le marché 1919-1946*, Paris: Fayard, pp. 982-1019.
- SUREDA, J. (1959). *El caso de “Barcelona Traction”*. Madrid.
- TEDDE, P.; AUBANELL, A. (2006). “Hidroeléctrica Española (1907-1936)”. In G. Anes Álvarez, *Un siglo de Luz. Historia Empresarial de Iberdrola*, Bilbao: Iberdrola, pp. 192-277.

- TENA, A. (1988). “Importación, niveles de protección y producción de material eléctrico en España (1890-1935)”. *Revista de Historia Económica*, VI, nº 2.
- VALDALISO, J. (2006). “Los orígenes de Hidroeléctrica Ibérica, Hidroeléctrica Española y Saltos del Duero”. In G. Anes, *Un siglo de luz. Historia empresarial de Iberdrola*, Bilbao: Iberdrola, pp. 97-129.

## Abbreviations

- BANQUE PARIBAS: Banque de Paris et des Pays-Bas  
CE: Comercial Eléctrica  
CIE: Compañía Industrial de Electricidad  
CVE: Cooperativa Valenciana de Electricidad  
DEVA: Distribución Eléctrica Valenciana  
EEM: Energía Eléctrica del Mijares  
EL: Electra de Levante  
ELECTROBANK: Bank für Elektrische Unternehmungen  
ÉLECTROBEL: Compagnie Générale d’Entreprises Électriques et Industrielles  
EM: Eléctrica de Montesa  
ET: Electro-Textil  
EV: Electra Valenciana  
FINACIERA: Sociedad Financiera de Industrias y Transportes  
HC: Hidroeléctrica Castellonense  
HEA: Hidro-Eléctrica Ayelense  
HEV: Hidro-Eléctrica Valenciana  
HISPANOBEL: Compagnie Hispano-Belge d’Entreprises Electriques et Industrielles  
HM: Hidro-Eléctrica de Valencia  
HM: Hidroeléctrica del Mijares  
HPS: Herencias Pardo-Sánchez  
LUTE: Compañía de Luz y Fuerza de Levante  
REVA: Regadíos y Energía de Valencia  
SAFE: Sociedad Anónima de Fuerzas Eléctricas  
SGBEE: Société Générale Belge d’Entreprises Électriques  
SOFINA: Société Financière de Transports et d’Entreprises Industrielles  
SVE: Sociedad Valenciana de Electricidad  
TRAMELEC: Société des Tramways et de l’Electricité de Bilbao  
UEG: Union Elektrizitäts Gesellschaft  
UEL: Unión Eléctrica Levantina

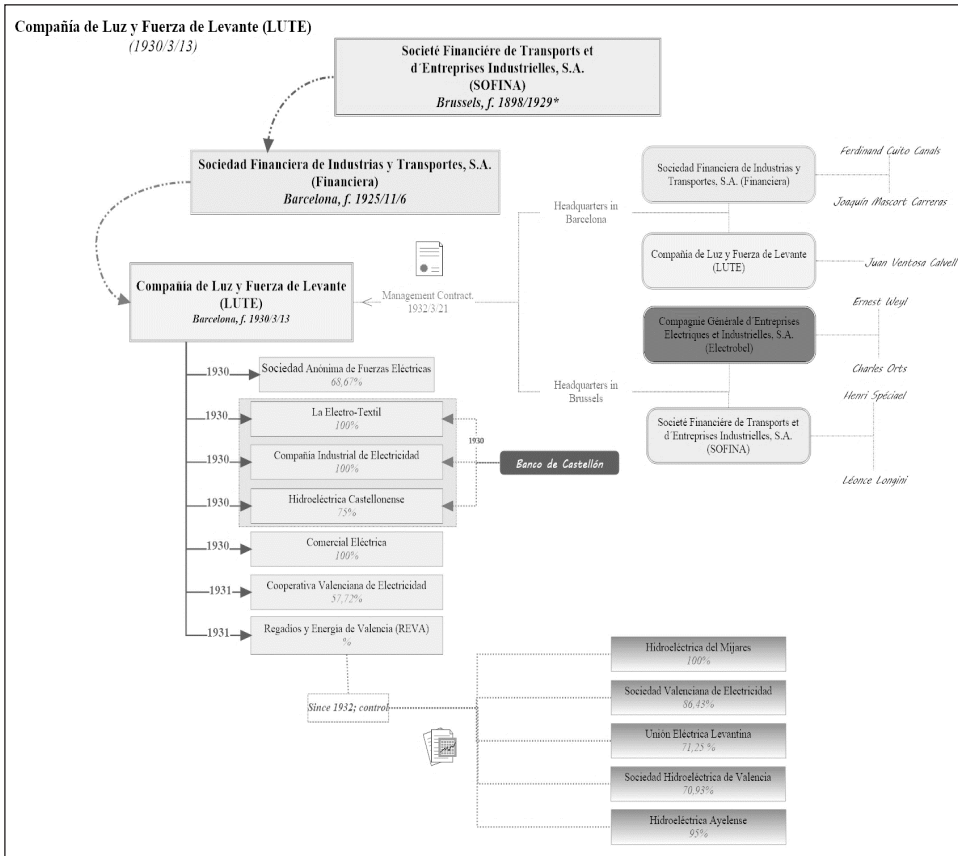
**FIGURE 1.** - *Import of electrical equipment in Spain in the first third of the 20th century (annual average of several years; %)*



Source: Prepared by the authors from Tena (1988).

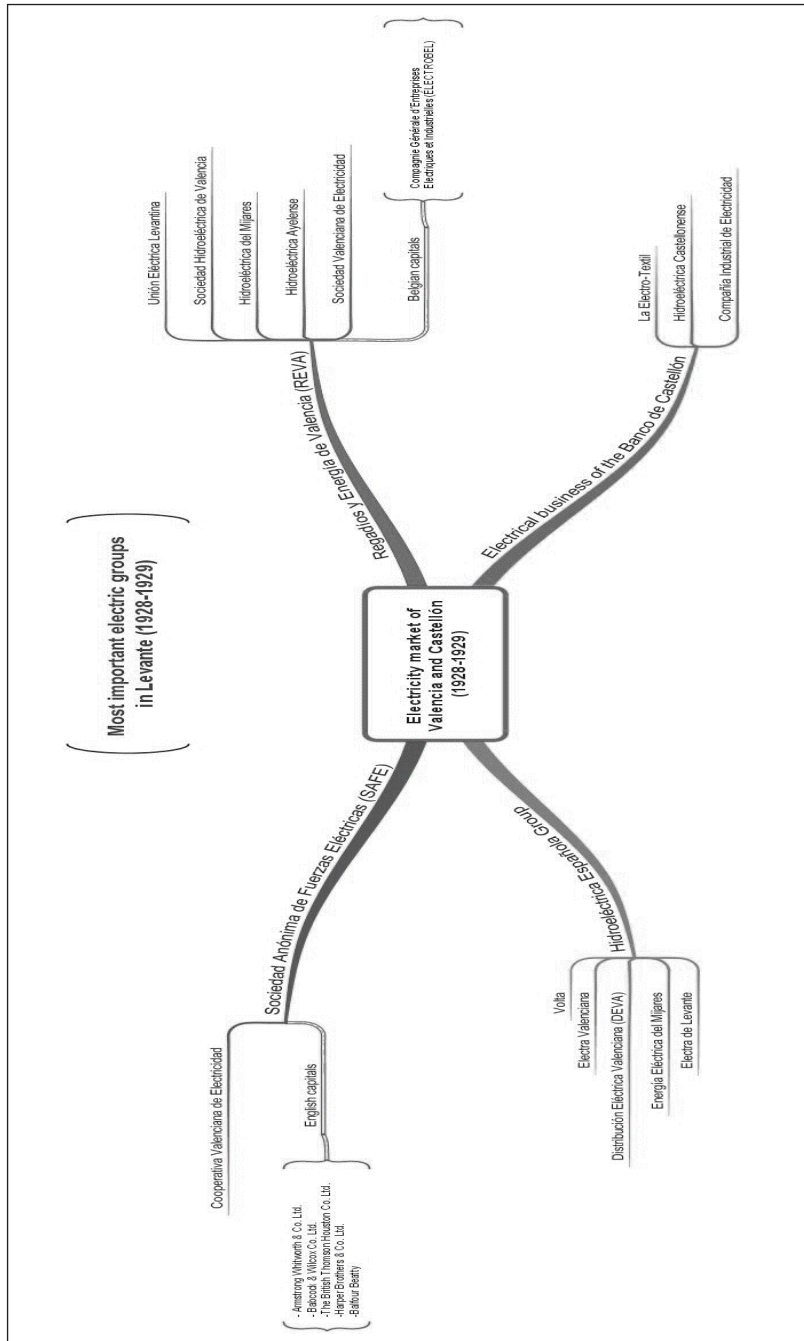


**FIGURE 2.** • LUTE governance structure and its implementation in the Levantine electricity companies



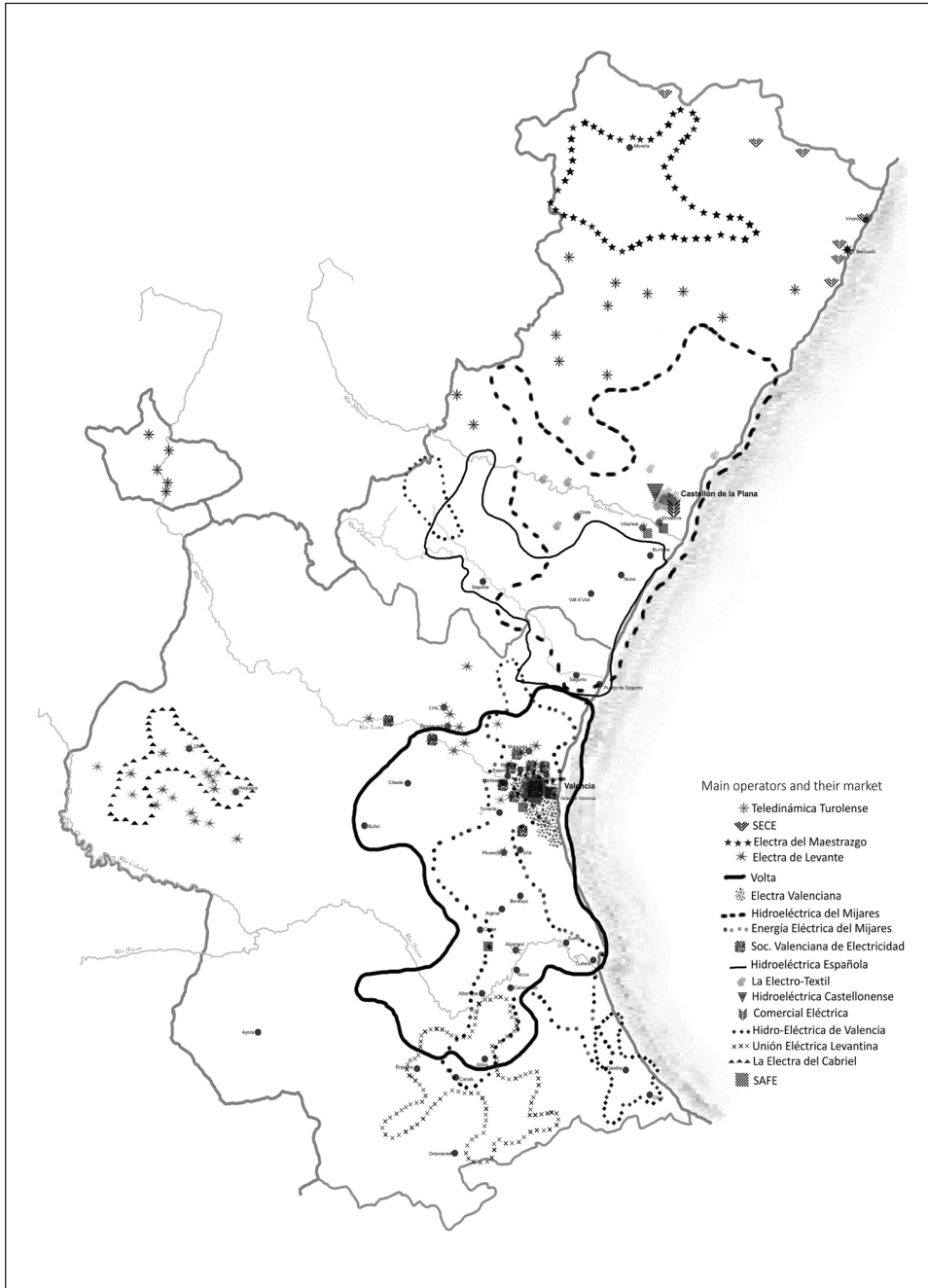
Source: Hidalgo (2020, p. 459).

FIGURE 3. • Large electrical groups in Levante (1928–1929)



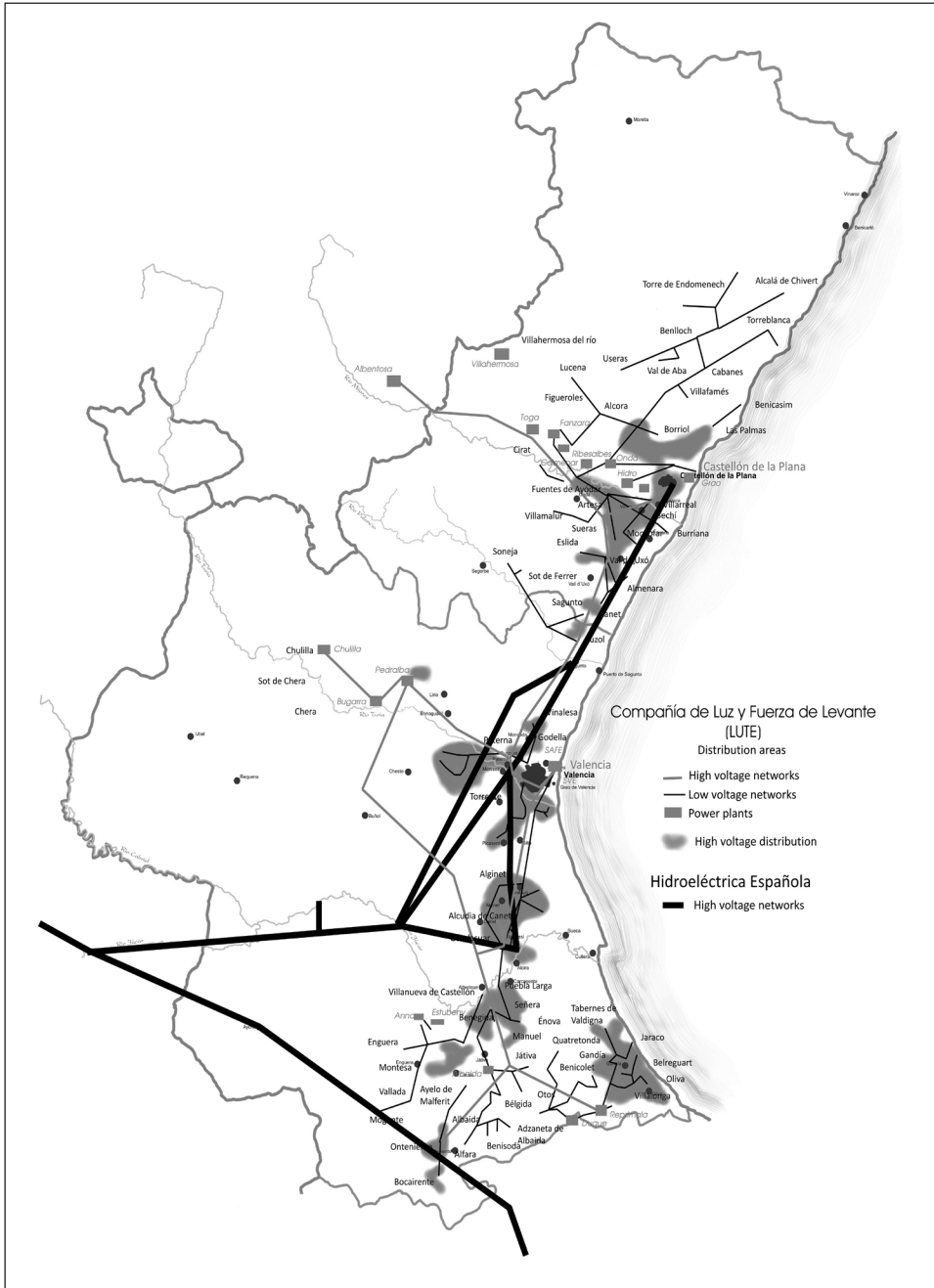
Source: Hidalgo (2020, p. 463).

**MAP 1.** ▪ *Overlapping distribution areas of the main electricity operators in 1930*



Source: Authors' work from Hidalgo (2020).

**MAP. 2. - Structure of the high and low voltage distribution networks of Hidroeléctrica Española and LUTE in 1940**



Source: Authors' work from Hidalgo (2020).



***Strategies of international financial capitalism and the integration of the Spanish electricity system: the Levantine coast***

ABSTRACT

Among the national varieties of investment employed in European electricity development, Spanish studies have focused on the strategies of large electricity companies based in mature electricity markets, such as Catalonia or Madrid, but only in traditional electricity systems, such as the Levantine. The purpose of this article is to answer the following question: What impact did foreign investment have on the configuration of the Levantine/Spanish electricity systems during the interwar period? The article concludes that, compared to the theoretical model of local monopolies applied generically to the Spanish case, the second wave of international investment not only accelerated the process of integration of the Levantine electricity market, but had a significant impact, due to the defensive attitude of the Spanish electricity-financial lobby, on the dynamics (competitive/oligopolistic) of regional electricity systems in Spain.

KEYWORDS: foreign investment, utilities, business history, Spain.

JEL CODES: N24, F23, L22, L53 .



***Estrategias del capitalismo financiero internacional y la integración del sistema eléctrico español: la costa levantina***

RESUMEN

Entre las variedades nacionales de inversión empleadas en el desarrollo eléctrico europeo, los estudios españoles se han centrado en las estrategias de las grandes compañías eléctricas con sede en mercados de electricidad maduros, como Cataluña o Madrid, pero solo en sistemas eléctricos tradicionales, como el levantino. El propósito de este artículo es responder a la siguiente pregunta: ¿qué impacto tuvo la inversión extranjera en la configuración del sistema eléctrico levantino durante el período de entreguerras? El artículo concluye que, en comparación con el modelo teórico de monopolios locales aplicado genéricamente al caso español, la segunda ola de inversión internacional no solo aceleró el proceso de integración del mercado eléctrico levantino, sino que tuvo una influencia significativa, debido a la actitud defensiva del lobby financiero español de electricidad, en la dinámica (competitiva/oligopolística) de los sistemas eléctricos regionales en España.

PALABRAS CLAVE: inversión extranjera, servicios públicos, historia empresarial, España.

CÓDIGOS JEL: N24, F23, L22, L53.