CHAPTER 9

Public Services in Spain: The Role of Water Supply Companies

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9.1 Introduction[1]

This chapter studies the drinking water supply companies in Spain during the second industrial revolution. The period studied spans from 1840 to the early decades of the twentieth century. A long-term approach allows us to analyse the changes that the management of this public service has undergone. The strong growth in the demand for drinking water, prompted by the increase in population that took place in small- and medium-sized cities over this period, led to an organisational model characterised by *regulation* and in which the technique of *administrative concession* has prevailed.

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The historical analysis of drinking water supply companies is of particular interest for several reasons: firstly, because of the leading role that this group of companies acquired throughout the nineteenth century; secondly, because this business phenomenon generated a unique and characteristic typology, and exhibits features that allow us to examine the various forms that the sector took; and finally, it is worth noting the novelty that these companies represented from the technological point of view and the significant concentration of investment—both national and foreign—that their creation brought with it. The academic literature has focused on the study of these elements, especially with the works of Falkus (1977), Goubert (1988), Guillerme (1988), Hassan (1998), Millward (2007) and Tomory (2015, 2017), among others.

In Spain these companies operated within a legislative framework characterised by the emergence of techniques such as the natural monopoly and the administrative concession, which have played a predominant role in the development of public services and in the improvement of health and hygiene. The study of these companies provides an insight into certain forms of market organisation, as well as explains their national and international expansion (Lorrain 2002; Fernández 2014; Matés-Barco 2016). However, until a few years ago, despite the importance of the sector, it was one of the most forgotten by historiography.

In 1840, the first company dedicated to the supply of drinking water—*Mina Pública Aguas de Tarrasa*—was established, and throughout this decade, incipient initiatives to implement a modern supply service are observed. This stage ended in 1936 due to the change in course that occurred with the outbreak of the Spanish civil war. From that date onwards, private companies began to languish, which culminated in the progressive municipalisation of the water supply service by town councils.

The information gathered makes it possible to describe these companies as a whole, their role in the business context and the basic factors that have governed their organisational development in the medium and long term. The sources used have been abundant and varied. Firstly, there are the yearbooks and official censuses from the first half of the twentieth century; for example, the *Anuario Financiero y de Sociedades Anónimas de España* (Financial and Public Company Yearbook of Spain), the *Anuario Financiero de Bilbao* (Financial Yearbook of Bilbao), the *Anuario Técnico Industrial de España* (Technical Industrial Yearbook of Spain) and the *Estadística de la Contribución de utilidades de la Riqueza Mobiliaria* (Statistics on the Contribution of Earnings from Movable Wealth).

Secondly, the reports and existing documentation in the archives of the Ministries of Finance and Public Works, as well as the municipal ones—especially in Madrid and Barcelona—have provided very complete information on companies and supply projects. Thirdly, the *Revista de Obras Públicas* (Journal of Public Works), founded in 1853, together with the official reports and statistics of the time, has furnished relevant data.[2] Likewise, the annual reports of the companies and the commemorative books published at different times have been useful. Finally, it is worth mentioning the *Catálogo de Sociedades de abastecimiento de agua potable* (Catalogue of Drinking Water Supply Companies), which presents an exhaustive study of the existing bibliography and detailed information on each of the 273 water companies that operated in Spain between 1840 and 1990. This set of sources provides an interesting panorama and offers a very complete list of private companies dedicated to the supply of water (Matés-Barco 2014, 2018a).

After this brief introduction, the second section deals with the role of the supply companies within the business context. The third section analyses the different types of companies according to the size of their investments. Section four describes some of the essential characteristics of these companies and of the supply sector: the duration of the concessions, as well as their stability and survival over time. The fifth and sixth sections deal with the nature of this business, as well as business strategy and the struggle for market control. Finally, some brief conclusions are drawn.

9.2 The Business Context of Water Supply Companies

Between 1840 and 1936, Spain experienced a period of continuous growth in the number of private companies dedicated to the supply of water. These companies were primarily based in the large cities and in the areas with the greatest urban development and characterised by economic dynamism (Villar-Chamorro et al. 2019). After this period of expansion, private companies began to decline between 1940 and 1980 and progressively disappeared from the business panorama. Only a few companies were able to resist the onslaught of interventionism.

[2] *Estadística de Obras Públicas*, 1895–1900; *Reseña Geográfica y Estadística de España*, 1888; *Revista de Obras Públicas*, 1851–1990; *Dirección General de Contribuciones*, 1901–1933.

The spread of water companies in Spain occurred slowly, to the point that during the second half of the nineteenth century they were only operating in 47 towns, when at this time there were more than 8000 municipalities. These companies sought out the main cities, but they were also found in small towns that already had an entity in charge of the supply. However, there were many companies that could not withstand the difficulties of a sector that was just starting up, and folded soon afterwards. To date, we know of the incorporation of 83 companies before 1900, most of which were centred in the big cities.

The global numbers point to some interesting aspects of the sector. The first shows that the sector was beginning to develop in Spain despite the limited business fabric in the country and the reluctance of private capital to invest in this type of economic activity. The second aspect is that the attraction of large cities is evident; of the 47 cities that had a company before the end of the nineteenth century, 18 had more than 20,000 inhabitants in 1860, and as many again were close to that figure. Within this group, it is worth mentioning that some important centres—Almeria, Bilbao, Malaga, Zaragoza, Las Palmas, Palma de Mallorca and San Sebastian—did not have private initiatives before 1900, and it was the city council that was directly responsible for the management of the service. The long conflict that took place in Malaga starting in 1870, between the city council and the various concession companies, is an example of the vicissitudes that many Spanish cities went through to obtain a modern supply of drinking water (Heredia-Flores 2013). The third and final aspect is the appearance of companies that, at a fairly early stage, were responsible for supplying small municipalities. This presence denoted, in an incipient way, a trend that became more pronounced in the first decades of the twentieth century.

Table 9.1 shows the role that water supply companies played in the business context. The classification of business sectors in 1922, when water companies were at their peak, indicates a similar trend in the following years. The group of water supply companies was in 15th place, on a par with groups such as insurance, public works, tobacco or electrical equipment companies. Logically, the first positions were occupied by banks, electricity and gas companies, railways and mining corporations. Compared to the more than 1.4 billion pesetas of paid-up capital that the banking or electricity companies had established, the 166 million pesetas of the water companies may seem an insignificant figure. But these great differences can be put into perspective if one observes, for example, that the textile

Table 9.1 Water supply companies (1922–1934). Number of companies and amount of capital and outstanding bonds. Both percentages are in relation to the rest of the business sectors

Year	*Companies*		*Authorised capital*		*Paid-up capital*	*Outstanding bonds*
	Number	*Percentage*	*Millions of pesetas*	*Percentage*	*Millions of pesetas*	*Millions of pesetas*
(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
1922	101	2.66	166	1.67	151	103
1926	110	2.53	192	1.69	171	156
1927	116	2.48	204	1.57	175	187
1930	122	2.65	236	1.54	204	300
1931	117	2.58	177	1.12	158	316
1932	117	2.53	223	1.42	197	312
1933	122	2.57	215	1.36	188	270
1934	120	2.50	214	1.34	186	268

Sources: Author's own elaboration with data from *Anuario Financiero y de Sociedades Anónimas de España*, [AFSAE]; *Sociedades de Aguas Potables y de Riegos*, Madrid, 1922–1934; *Anuario Financiero de Bilbao*, which includes the *Historial de los Valores Públicos y de Sociedades Anónimas de España* [AFB]; *Aguas*, Bilbao, Banco de Vizcaya, 1930–1934

companies—of great importance in Spain—were in the 11th place with 234 million pesetas of paid-up capital, that is, barely above the water companies. The 1920s show how water supply companies were at the same level as tramways, public works, insurance or electrical equipment companies. In 1930 their numbers increased, and their capitalisation also grew. This was their high point and from then on, they began to decapitalise and suffer the ravages of inflation.

Except for the electrical companies, banks, railroads and mining companies, which represented very high percentages in terms of capital (14.91%, 11.06%, 10.81% and 6.30%, respectively, in 1927), or new sectors such as telephones, which had 9.35% of capital, water supply companies moved within a large and numerous group which ranged from 1.04% for cement companies to 3.92% for textiles. These figures from 1927 show that, between the sixth place occupied by textile companies in terms of paid-up capital and the 22nd place for those firms dedicated to shipbuilding, there was a group of sectors made up of companies engaged in shipping, chemicals, machinery, steelworks, sugar, tramways, public works, insurance, cement and so on. The comparison with the tramway companies, a typically municipal service, shows that the water supply companies moved within similar parameters to those described in other public services. In other words, they were not out of step with other sectors that could to some extent be representative of the economic situation of the time (Martínez López 2008; Núñez and Buendía 2008).

These figures indicate that water supply companies were a group that had been on the rise since the second half of the nineteenth century. The number of companies and their capitalisation increased, and it was increasingly common for small or medium-sized towns to have a water supply company to manage the service. The peak was between 1930 and 1932, and it continued with small fluctuations until practically the civil war. From 1934 onwards, the loss of importance of the companies is observed, which became more acute and began to be felt especially after the civil war. During the conflict itself, companies such as *Aguas de Córdoba* were municipalised, and from then on the number of companies decreased and their decapitalisation continued unabated.

Gregorio Núñez has pointed to the presence of the public debt of a good part of the Spanish municipalities in the first third of the twentieth century as an indicator of the modernisation drive at the local level. In the same vein, José Luis Hernández-Marco has shown how local town councils resorted to private investment and emerging capital markets, both local and national, as well as to the modern financial institutions of the time (Hernández-Marco 2008; Núñez 2008).

Before 1900, the sources are not very precise, and it is difficult to know the exact number of companies. However, there are sufficient data to carry out a detailed study of the sector. The public companies, as an organisational model, provided the most significant support in the expansion of the water supply service in Spanish cities. The companies that did not adopt this typology were merely marginal in providing the service, limited to small neighbourhoods or the smaller towns.

In 1870 there were 22 water companies that were responsible for home supply, in 1890 there were 30, and by 1900 the number had already reached 48. From the latter date onwards, more specific data are available to help understand the situation and the evolution of the sector. The information has been extracted mainly from the *Anuarios Financieros*, the *Anuario Técnico Industrial de España* and the *Estadística de la Contribución* *de Utilidades de la Riqueza Mobiliaria* (ECURM). The data from the *Estadística de la Contribución* do not appear to be very exhaustive, given that for 1905 it only includes 19 companies and in 1910 it includes 37. These low figures may be related to the contributory nature of the source, which would lead many companies to try to avoid these responsibilities. However, the data provided by the same source for 1915 are already considerably more representative: 56 companies, and more in line with what is found in others from the same period, although their limitation is still apparent. The data from the *Anuarios Financieros* seem to be more complete, since they had a purely informative purpose. In 1913, a total of 70 companies were known to exist, and a significant advance was noted, from 101 companies in 1922 to 120 in 1934, with some small variations in those years, as shown in Table 9.2.

Observation of the business phenomenon between 1922 and 1934, the final years of the period of plenitude, shows the state of the sector in its maximum splendour. Both the number of drinking water supply companies and the amount of invested capital indicate that the sector occupied an important place in the group of Spanish public limited companies. It was one of the sectors with the highest number of companies, and although in absolute figures it increased throughout this period, its percentage compared to the rest of the sectors decreased progressively. The same occurred with the overall amount of capital invested: steady growth despite the appearance in 1931 of an ostensible decline in investment, which was the result of the political instability suffered that year. The restrictions imposed by the strengthening of interventions by the state and the refusal of local city councils to allow increases in water rates slightly delayed the sector in comparison with previous years. In 1930, when the sector was at its peak, the number of companies rose to 122, a fairly significant figure given the characteristics that prevailed in the sector: a tendency for companies to set up in large cities, local monopolies and taking advantage of economies of scale. The number of water companies is also significant when compared to the quantity of cities with more than 10,000 inhabitants at that time, which was 178, as it implies that just over 60% of communities of that size had some kind of water supply company. The same sources peg the number of water companies at 95 for 1950, a figure that indicates the decline these firms began to experience during the dictatorship.

Table 9.2 Number of drinking water supply companies

Year	*Number*
1870	22
1890	30
1900	48
1905	19
1910	37
1913	70
1922	101
1926	110
1927	116
1930	122
1931	117
1932	117
1933	122
1934	120

Sources: Author's own elaboration with data from *Reseña Geográfica y Estadística de España* (1888); Dirección General de Contribuciones, *Estadística de la Contribución de Utilidades de la Riqueza Mobiliaria* [ECURM], Madrid, 1905, 1910 and 1915; Anuario Técnico e Industrial de España, *Empresas y sociedades de abastecimiento de aguas*, Madrid, 1913; Anuario Financiero y de Sociedades Anónimas de España, *Sociedades de Aguas Potables y de Riegos*, Madrid, 1922–1950; *Anuario Financiero de Bilbao*, which includes the *Historial de los Valores Públicos y de Sociedades Anónimas de España*, *Aguas*, Bilbao, Banco de Vizcaya, 1930–1934

9.3 The Investment Capacity of Drinking Water Supply Companies

The role played by investments in the process of urban transformation that Spanish cities experienced in the last third of the nineteenth century and first third of the twentieth century was very important. The share of fixed capital that the cities incorporated in the planning and development of road infrastructure, urban services and so on involved a substantial mobilisation of financial resources. The significant immobilisation of capital that had to be carried out and the slowness with which it could be recovered made it quite risky. Nevertheless, from the early stages and despite the inherent difficulties, entrepreneurs were willing to invest in the water supply business. But this involvement was made in response to a series of considerations, one of the most important of which was obtaining concessions under a monopoly regime (Bigatti 2014; Matés-Barco 2004, p. 169).

The existing data show that investment flows were significant in the 1880s. The same can be said of the first decades of the twentieth century, which saw a strong push by investors based on the good results obtained by the companies in the final stages of the nineteenth century. Some of these firms had been operating for quite some time and were earning profits which they, in turn, reinvested. It was common to resort to self-financing. At the same time, expectations of future profits were influenced by the results obtained in previous years. Business surpluses were a key determinant of capital formation. Investment also followed an upward trend from the late nineteenth century, which became more pronounced in the 1920s. As the scale of the water supply business grew, the use of borrowing became exponentially greater, as did the allocation of reserves.

Figure 9.1 shows the evolution of resources in the long term, specifically in the period 1903–1936. It shows rather timid growth, almost imperceptible, until 1915. The low level of investment is due to the economic recession at the end of the nineteenth century, and to the fact that the service was not yet very widespread in the smaller towns. This situation led to certain reservations on the part of investors. The final decades of the nineteenth century had been a hive of activity in the sector, at least in large cities like Barcelona. New companies emerged, and after a few months or years they ceased to exist. It was not surprising that investors were distrustful of the fact that companies were not yet well established in the market. On the other hand, except for a few very specific firms, the levels of profits and profitability were not very high either, providing an explanation for the reticence on the part of investors. It seems clear that demand was weak in these years and poorly consolidated.

From 1916–1917 onwards, there was a continuous rise in investment, which was not interrupted until 1934. Several factors indicate that the consolidation of the sector was taking place: the implementation of the service in a greater number of towns, an increase in the number of subscribers and, finally, higher levels of profits and profitability. This is the period of greatest expansion in the sector. The growth trend can be seen starting in 1922 and the peak was reached in 1930. From that year onwards, stabilisation began to be detected in the sector as a consequence of the interventionist influence that had been exercised for several years. With the civil war and the post-war period, investments entered an impasse

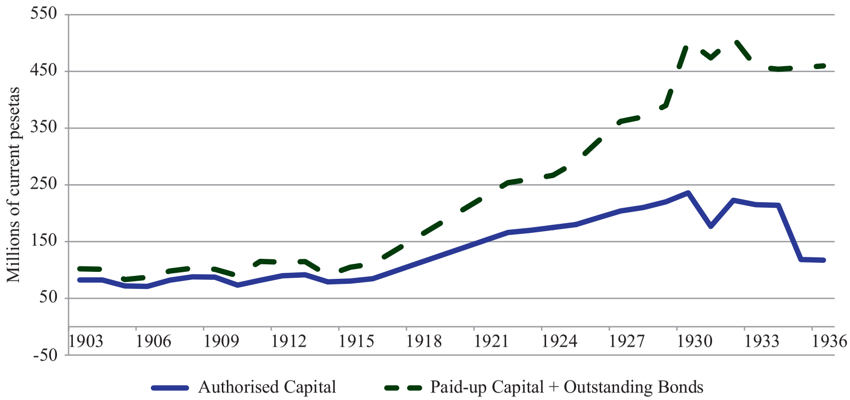

Fig. 9.1 Drinking water supply companies: Evolution of invested capital (1900–1936). (*Sources*: Author's own elaboration with data from Dirección General de Contribuciones, *Estadística de la Contribución de Utilidades de la Riqueza Mobiliaria, Madrid*, 1905–1915. Anuario Técnico e Industrial de España, Empresas y sociedades de abastecimiento de aguas, Madrid, 1913. Anuario Financiero y de Sociedades Anónimas de España, *Sociedades de Aguas Potables y de Riegos*, Madrid, 1922–1936. Anuario Financiero de Bilbao que comprende el Historial de los Valores Públicos y de Sociedades Anónimas de España, *Aguas*, Bilbao, Banco de Vizcaya, 1930–1934)

to which no easy solution appeared. The economic crisis, inflation and the freezing of rates did the rest, and the paralysis of investment was constantly manifesting itself in the inability of water companies to increase their supply networks.

Two divergent trends can be seen in the size of water supply companies. On the one hand, the degree of investment per inhabitant was fairly homogeneous, since they tried to deal with the supply needs by providing a minimum service, intended only for home supply and with a basic technological level. On the other hand, investment in these companies was quite uneven and was usually closely related to the size of the city. These enterprises were not particularly noted for their large scale, since the structure of the supplies themselves led to the existence of a great variety of companies. Before 1880 it was common for small companies to appear, even in large cities, as the practice of creating monopolies was not yet very well established; however, between 1881 and 1900, the emergence of companies of considerable size began.

The known data on total assets refer, for the most part, to the most profitable and longest-running companies. Most companies had, at the peak of their activity—in the 1920s—total assets ranging from four to eight million pesetas. Logically, the two biggest companies in the sector, *Aguas de Barcelona* and *Aguas Potables y Mejoras de Valencia*, were much larger than this.

In the second half of the nineteenth century, many of these companies emerged thanks to the contributions of foreign capital—British, French and Belgian—which also contributed their knowledge, technology and industrial materials. As Fernández-Paradas (2009, p. 110; 2016) indicates, this phenomenon was not exclusive to water supply companies, but was the result of a trend that was occurring in some public services, most notably the railways and the first gas, tram and electricity companies.

According to data from Costa Campi, investments made in the nineteenth century by water companies, with the total or partial participation of foreign capital, amounted to 40,670,400 pesetas. French capital predominated with 48.6% of total foreign investment, followed by English with 34.56% and, finally, that of Belgian origin with 16.82%. More specifically, Table 9.3 shows the breakdown of investment and the percentage compared to total foreign investment in Spain (Costa 1981; Matés-Barco 2002; Castro-Valdivia and Matés-Barco 2020).

Table 9.3 Investments by foreign water supply companies in Spain (nineteenth century)

	Total investment (pesetas)	*Percentage of total foreign investment*
France	19,768,750	23.71
England	14,057,900	28.57
Belgium	6,843,750	16.45

Sources: Author's own elaboration with data from Costa (1981, pp. 45–83), Matés-Barco (2002, pp. 301–316)

9.4 The Characteristics of the Drinking Water Companies

The information provided by the sources of the time and the data existing in the accounting records of some companies allow us to reveal several characteristics of the drinking water supply companies.

Firstly, it is worth noting the change in the concession regime for the supply of water to communities, which varied over the years. While in the early stages, 1840–1880, they were generally granted for an unlimited period of time, later concessions included the 99-year clause, which had been established in the Water Law of 1879. This was the predominant model, although in the early years of the twentieth century it became quite frequent to grant concessions for a shorter time period: 20, 25, 30, 40, 50, 60 and 75 years. Some specific cases are as follows: *Hidráulica Santillana* (1905), which obtained the concession for 50 years; *Aguas, Luz y Fuerza de la Segarra* (1912), for 25 years; *City of Las Palmas Water* (1913), for 60 years; *Aguas Potables de Ripollet-Sardañola* (1917), for 20 years; *Aguas de Argentona a Mataró* (1922), for 60 years; *Aguas de León* (1923), for 75 years; *Hidráulica Carpense* (1923), for 30 years; *Aguas de Villafranca* (1924), for 60 years; and, finally, *Aguas de Viladecans* (1931), for 40 years.[3] These modifications seem to be related to the progressive interest shown by town councils, from about 1900, in obtaining the reversal of the concessions.

Secondly, there was great instability in the companies at the early stages of the sector. This peculiarity allows us to divide the companies set up throughout the second half of the nineteenth century into three groups:

[3] Anuario Técnico e Industrial de España [ATIE], *Empresas y sociedades de abastecimiento de aguas*, Madrid, 1913, 19; Anuario Financiero y de Sociedades Anónimas de España, [AFSAE], *Sociedades de Aguas Potables y de Riegos*, Madrid, 1931, 129.

(1) those that lasted in the water market for little more than two or three years, (2) those that did not survive beyond 20 years and (3) those that managed to hang on for a long time, some until they reached the end of their concession period.

For the first case—companies with a very short duration—we can cite examples such as *Jean Bouchard*'s company, which was founded in 1860 to supply water to La Coruña and by 1861 had already discontinued the service. In the same city, the *Luis Petit* company was in charge of the supply between 1863 and 1866. This situation was repeated in other cities, both with national companies—*Compañía de Aguas Potables de Muntanya* (1883–1890) and *Compañía General Anónima de Aguas de Barcelona* (1881–1890)—and with foreign ones.[4] Examples of foreign water companies with a short duration include *Cádiz Water Works*, which operated between 1872 and 1876, and *Barcelona Besós Waterworks*, which operated between 1892 and 1895.

For the second group, companies that were not established in the market for more than 20 years, again the cases were repeated massively in Barcelona (Matés-Barco 2019a).[5] *Palau, García y Cía* was set up in 1857 and managed to maintain its supply until 1865, the *Compañía de Aguas de Barcelona* was in charge of the supply between 1867 and 1882; the *Empresa del Alto Vallés* supplied some areas of the city between 1869 and 1890, as did the *Compañía de Aguas de Sants* between 1869 and 1887; and finally, the *Compañía de Aguas de San Martí de Provençal* between 1878 and 1895. In other cities the problem was repeated; for example, the British company *Alicante Water Work* was in charge of the water supply in that city between 1883 and 1898.

Among the companies that remained in place over the very long term, several cases can be cited.[6] In Valladolid, the *Sociedad Industrial Castellana*, which had managed the supply since 1876, ceded its rights to the city council in 1959. Similar situations occurred with *The Seville Water Works Company* (1881–1957) and *Aguas de Alicante* (1898–1956). Other companies ceded their concessions some years before their termination dates;

[4] Anuario Financiero de Bilbao que comprende el Historial de los Valores Públicos y de Sociedades Anónimas de España [AFB], *Aguas*, Bilbao, Banco de Vizcaya, 408; AFSAE, 1927, 512–515.

[5] AFSAE, 1935, 278; AFB, 1948, 409.

[6] AFSAE, 1934, 339; AFB, 1950, 402.

for example, *Aguas Potables de Villafranca* (1881–1921), *Aguas Potables de Cádiz* (1885–1927) and *Aguas Potables de Córdoba* (1891–1938).

The existing statistics for the first decades of the twentieth century allow us to draw attention to other peculiarities. Of the 70 companies included in the 1913 *Technical and Industrial Yearbook of Spain*, some 23 had been founded before 1900, which shows that a third of the companies had managed to establish themselves in the business of water management despite the initial difficulties of the sector. However, this success is more nuanced when we learn that 82 companies were founded during the nineteenth century. A certain instability can be seen in many of the early initiatives, although it is observed that companies established in medium or large cities managed to survive. The estimate, made after considering those population centres with more than 10,000 inhabitants in 1900, is even more evident when the analysis is raised to those that were above 30,000 inhabitants.

Of the companies founded before 1900, only those that had made significant investments managed to survive, although it does not seem that their stability was as much due to the size of the company as to the conditions of the city. A small company in a medium or large city had significant growth potential, to the extent that it was able to cope with the investments needed to extend the supply network. The large investments of the big companies were mostly made at the end of the nineteenth century.

Before 1900, in almost all the large cities there was a household water supply network managed by a private company. The security provided by the term of the concessions, generally quite high and specified by the Water Law at 99 years, allowed these companies to be very stable. The history of some of these companies in their initial stages shows the instability they went through at the start, but it can also be seen how they endured with guarantees beyond 40 or 50 years. The relationship of some companies such as *Aguas de Jerez* (1868), *Sociedad Industrial Castellana* (1876), *Aguas del Gévora* (1878), *Aguas Potables de Cádiz* (1885), *Aguas Potables de Córdoba* (1891) or *Aguas de Arteta* (1893) with the length of their concession is sufficiently evident, since it was not until well into the 1920s that they began to suffer the effects of municipalist policies, and they remained profitable until then.

These data show that there were no considerable differences between companies based in large or small cities. Nor can it be forgotten that many of these companies went through periods of doubt and instability in the big cities. In the initial years, companies emerged that only lasted a few years, or even a few months, due to the inexperience and novelty that existed in the sector. Before the emergence of a strong company that could cope with the vicissitudes of the business, many attempts were made that did not succeed. What occurred in Barcelona, Cádiz, Valencia, Cartagena, Murcia, Pamplona, Córdoba and Valladolid are clear examples. In the big cities there were companies that managed to establish themselves in the market and survive for many years, perhaps much more easily than in the smaller towns. But at the start, the larger cities also suffered the appearance of water companies that lasted for just a short time in the market, and that can be said to have paved the way for other stronger firms. The difference, therefore, with the smaller towns was that the failures of the first companies in the big cities led to the appearance of larger companies, capable of managing the supply for many years, while in the smaller towns this dissolution soon left the service in the hands of the town councils. Everything points to the fact that by 1900–1905, the sector was coming of age, with an organisational, technical and business profile that enabled it to deal with all kinds of situations. This fact is confirmed by the abundant number of companies founded between 1900 and 1915.

9.5 The Nature of the Drinking Water Business

To a large extent, the characteristics of the water companies were determined by the nature of the business. This type of initiative was characterised by the fact that it was attractive to the small saver, symbolised by the father of the family who was looking above all for a stable, very predictable investment, but something more profitable than the securities of the state. The dividends from these investments, which were between 5% and 6%, were well above the 3% offered by government bonds and it was logical that this new alternative was chosen. In addition, companies tended to raise resources by issuing bonds because the market demanded it, but also because it was a way of limiting risk and providing a more secure income that would attract this type of investor. On the other hand, some of these investments came with the backing and prestige of major foreign companies, which contrasted with the much-maligned reputation traditionally granted to government securities throughout the nineteenth century (Castro-Valdivia et al. 2019).

In the early days, the family element was important in the organisation of the small companies, although over time they evolved into more modern type of businesses. Due to their specific characteristics, water supply companies grew from the second half of the nineteenth century onwards on the basis of an organisation in which small and medium-sized companies predominated, which were thinly capitalised and, on many occasions, had a family structure. The internal markets, with their relatively low levels of earnings, delayed the industrialisation process, and therefore generated a rather weak organisational structure in the water companies. The family element—without being the most predominant—is seen in the continuity that existed for several generations due to the control of some companies. Among various examples, there is the Carbonell family in *Aguas de Cerro Muriano*,[7] the Castelltor-Gabarró family in *Aguas de Rigat*,[8] Abarzuza in *Aguas Potables de Cádiz*,[9] the Guisasola family in *Aguas de León*,[10] the Pastor family in *Aguas Potables de Aspe*[11] and, finally, the clan made up of the various groups of the families Garriga-Nogués, Garí Gimeno, Garí Rossi, Más Sardá, Borrás and Calvell, which from around 1920 were gradually consolidated in the control of *Aguas de Barcelona*.

The predominance of small- and medium-sized companies based on a clearly family business structure was a fairly characteristic system in the final decades of the nineteenth century and the first third of the twentieth century. Despite this, there were companies that, due to their development and size, gradually incorporated more advanced forms of organisation, born of the separation between ownership and management, of which *Aguas de Barcelona* was the most significant example.

After carrying out an analysis of the payroll of directors and board members of the various companies, three essential points can be noted. The first is the interrelationship observed between the various business groups, as evidenced by the presence and control of various boards of directors. The process of business concentration that took place during the Francoist period can be seen in the years when the sector was at its peak. Valencia and Barcelona form part of these nuclei. In terms of the former city, the Spanish companies of *Abastecimientos*, *Aguas Potables y Mejoras de Valencia* and *Omnium Ibérico* emerged. This group became, in

[7] AFSAE, 1933, 340.

[8] AFSAE, 1931, 129; AFSAE, 1932, 169; AFSAE, 1933, 337; AFSAE, 1935, 278; AFB, 1950, 408; AFB, 1970, 95; Anuario Financiero y de Empresas en España [AFEE], *Aguas y Balnearios*, Madrid, 1983, 65.

[9] AFSAE, 1927, 512–515.

[10] AFSAE, 1930, 221; AFSAE, 1934, 339; AFB, 1948, 409; AFSAE, 1950, 402.

[11] AFSAE, 1930, 200.

1947, the property of *Aguas de Alicante*[12] and *Aguas y Saltos del Zadorra*. With regard to the city of Barcelona, *Aguas de Barcelona*, *Aguas Subterráneas del Río Llobregat*, *Aguas del Río Besós*, *Artesa*, *Empresa Artesiana de Riegos*, *Centro Levantina de Riegos y Captaciones*, *Aguas de Reus*, *Sorea* and *Saur*, would become another important conglomerate. This entire complex business world eventually ended up within the *Aguas de Barcelona* group when it took over the supply rights for Valencia and Alicante. The connection between the Valencian and Catalan groups was already evident in 1940, immediately after the civil war. The list of board members would be endless. The policy of controlling the market and absorbing competing companies was already far reaching in the case of *Aguas de Barcelona*. Shortly before the civil war, *Hidráulica Santillana* and *Aguas Potables y Mejoras de Valencia* also chose this course, although it seems that the impasse caused by the war dispelled these intentions.[13]

The second point can be glimpsed after a long-term chronological viewing of the members of the boards of directors. Two aspects stand out. First, in the early years there was a significant representation of foreign names. Second, one observes the presence of directors from *Aguas de Barcelona*, which was the most important business group in this field and was beginning to control a large part of the water supply market in the main Spanish cities.

Finally, it is worth noting the presence of a good number of small- and medium-sized investors, which can be detected in most of the companies and must have been very numerous in the large private firms. Even in a state initiative such as the *Canal de Isabel II*, it can be seen from the outset: in 1855 there were 872 subscribers, most of them small- and medium-sized bondholders. The same situation took place with the small companies that were able to offer shares at a cost of 50 or 100 pesetas, which sought to attract small savers.

9.6 Business Strategy and Control of the Market

Although the drinking water supply sector showed a preference for small- and medium-sized companies, not particularly integrated and very individualised due to the nature of the business itself, there were some business conglomerates that showed interest in extending their operations to other

[12] AFB, 1970, 121; AFEE, 1983, 65–69.
[13] AFB, 1950, 397; AFEE, 1983, 67.

cities and entering into other relatively similar activities. However, rather than talking about *business groups*, it is perhaps more appropriate to refer to the acquisitions and diversification practised by some companies (Matés-Barco 2019b).

The basic strategy of the companies was to exercise *control of the market*. For a sector like the supply of water, with its natural monopolistic characteristics, it was very important to dominate large areas. In addition, it had to have a diversified demand, free from any competition. The decision to invest was made after consideration of the size of the market or its future potential, and with knowledge of the expansion of demand. During the nineteenth century, entrepreneurs made great efforts to create their own market. Its growing size, thanks to the increase in population, was undoubtedly the main factor that encouraged the corporate structure, since demand skyrocketed and production benefited from economies of scale (Matés-Barco 2009).

One of the fundamental causes of this phenomenon can be found in the characteristics of the so-called *Unternehmergeschäft*. Peter Hertner has described this situation by referring to the actions of the large German electrotechnical producers before the First World War: they created their own markets by setting up local and regional electricity, tram and lighting companies in other countries (Russia, Italy, Spain and Latin America) and with those customers who were suffering from a chronic shortage of capital, especially the local corporations. The newly established companies were obliged to purchase electrotechnical supplies from their large industrial founding partners (Hertner 1990, p. 206). A relatively similar situation arose with some English or French producers of pipes and ferrous materials: they set up companies in third countries with the obligation to purchase their products and thereby develop their industries of origin.

As economies of scale were relatively low in the water supply sector, many entrepreneurs brought with them a substantial portion of their operational skills and a certain know-how, which had to be applied in a timely and tailor-made manner in each specific situation. These entrepreneurs also most likely provided privileged access to “mature” financial markets, such as those in Paris and Brussels. The same actions have been detected in some British cement manufacturers, who were also interested in developing this type of business that consumed their products.

These operations were a further step towards internalisation with the aim of reducing the risks of sales in foreign markets. Nevertheless, they did entail serious risks: the accumulation of a growing volume of capital in shares which the businesses were forced to keep in their portfolios, and which tended to dangerously reduce their liquidity. Foreign producers found the solution by creating financial holdings with major banks. These were responsible for acquiring the bonds and shares of newly created public utilities and holding them in their portfolio during the initial construction and development period. Once the business had "matured," they sought to sell much of the capital to small- and medium-sized investors or even to domestic "banking groups" to fill the gap left by the foreigners.

This process, which was often practised by Belgian, British and French companies, can be seen in particular in the *Compagnie Générale des Conduites d'Eaux*, of Belgian origin, and the *Crédit Général Liégeois* with the creation of the *Compañía Anónima General de Aguas de Barcelona* in 1867 (Matés-Barco 2018b).[14] Later, in 1882, French capital—through the *Société Lyonnaise d'Eaux et de l'Eclairage*—replaced the Belgian capital and brought about a change in the company, which became known as *Sociedad General de Aguas de Barcelona*. In 1898, the Belgian company repeated the same policy with the creation of the *Société d'Eaux d'Alicante*.[15] In the first case, in 1920, a group of Catalan bankers ended up acquiring the Barcelona company; and in the second, in 1926, the Alicante company was acquired by a company in the sector—*Aguas Potables y Mejoras de Valencia*—which was eventually integrated into *Aguas de Barcelona*.

Some companies, in order to control the market, looked to other types of strategies, for example, imposing limits on the entry of potential competitors. On many occasions, the companies requested the concession of a high volume of water, an amount above the flow needed to supply the population. In this way, in areas close to large markets, they ensured that they could expand supply in proportion to the growth in demand, and it was also a way of preventing other companies from being able to obtain concessions to supply areas of the community that had not yet been reached by the supply network. This strategy was used by *Aguas de Barcelona* (1882) right from its earliest days.[16]

Clashes and takeovers between companies occurred with some frequency in various Spanish cities. The cases of Madrid and Barcelona were

[14] AFSAE, 1930, 200.

[15] AFSAE, 1927, 512–515.

[16] AFSAE, 1922, 52–53; AFSAE, 1935, 278–302; Anuario Financiero de Valores Mobiliarios [AFVM], *Sociedades de aguas*, Madrid, 1917, 531.

the most significant, but they also occurred in others such as Pamplona.[17] Likewise, the eagerness of foreign companies to invest in the Levantine and Catalan area—mines, dissemination of their products and so on—seems to explain the concentration that occurred in the companies that succeeded them.

In Spain there was no price competition, as there was in England, as a strategy of some companies to increase market share. In some large cities, concessions were granted for very specific and limited areas of the city. In Barcelona, some companies were granted concessions to supply neighbourhoods or adjoining towns such as Sants, Hospitalet or some streets in the old town. The small size of these companies, a consequence of the limited areas they supplied, made them easy prey for more powerful companies.

In the early stages of implementation of the water supply service, there was the theoretical possibility of granting several concessions to different companies to supply one city. However, in small- and medium-sized cities, it was very rare for two water supply concessions to be granted, as the very dynamics of business eventually eliminated such a procedure. In the twentieth century, and especially from 1924 onwards, the specifications in which it was made public stated that the concession was exclusive.

The difficulties these companies encountered in integrating themselves in a given market in the early stages of development of the sector are noteworthy. It was common to find towns in which various companies were trying to establish themselves in the management of this public service. After successive failures, one of the companies—however small—always succeeded in achieving stability and taking over the market, usually lasting for quite some time. This trend shows that once the first period of uncertainty was overcome and the company was relatively consolidated, the possibilities of stability in the medium term were practically assured. This is a typical aspect of the sector, which itself is stable. But it can also be explained by the dominance that the companies had over the market; the existence of the monopoly ensured them, however small, of a certain level of profitability, and thus they managed to survive.

It was also often influenced by the contracts they had with the town council itself: water for public institutions, street cleaning, markets, slaughterhouses and so on. This allowed them to have an important client that ensured them, in a fixed way and in spite of the existence of special rates

[17] AFB, 1934, 388–413; AFSAE, 1935, 278–302; AFB, 1950, p. 408; AFEE, 1983, 65.

for these establishments, of part of their income. It was not the main factor that allowed these companies to move forward, but in the early years of their existence it must have been the anchor point that allowed them to enter the business and persist for quite some time. The figures fluctuate and change greatly over time.

One strategy that some water supply companies employed to grow was to diversify their economic activity and get into other types of business, such as electricity. This was the case for *Aguas de Barcelona*, which participated in *Compañía Española de Electricidad y Gas Lebón* and in *Electricidad de San Fernando y Chiclana*. In this same course of action, this strategy encouraged the vertical integration of companies dedicated to the manufacture of materials. The same strategies can be seen in companies in Valencia, Cadiz, Madrid and so on.[18]

In short, the normal evolution of the sector saw the most powerful companies displace others that were already established, acquiring their concessions and absorbing other companies that were set up as subsidiaries. An integral part of this strategy also consisted in entering into other businesses, especially the electricity business.

9.7 Conclusions

Water supply companies occupied an important place among the various sectors in the Spanish economy. Without reaching the level of the largest groups—banks, electricity providers and railways—they came to be situated among the top 20 business sectors that operated in Spain.

From the first stages, the number of water companies grew steadily, which explains the improved ranking among the business sectors. The large cities proved to be very attractive to private operators, who saw considerable commercial and business opportunities in managing a drinking water service. Slowly but steadily, the activity of the private companies was transferred to other medium and smaller-sized towns. Logically, there was a direct relationship between the size of the community and that of the water companies operating there. In spite of the difficulties encountered in the initial attempts to get a foothold in the water business, with the passage of time greater stability was achieved, and it can be seen that the most

[18] AFB, 1950, 406; AFB, 1960, 172; AFB, 1970, 121; AFVM, 1917, 531; AFSAE, 1932, 190; AFB, 1950, 408; AFEE, 1983, 67.

competitive and best placed companies were among those that had been operating for the longest time.

The water supply companies were of great importance, especially during the period of maximum expansion of the sector between 1900 and 1936. The regional distribution in its first years coincided with the Spanish industrial and urban map. There was a clear relationship between regions with a strong urban or industrial growth rate and the establishment of firms dedicated to the supply of drinking water.

The growing number of companies that began to emerge in the first decades of the twentieth century is evident, providing a palpable sign of the importance of the sector. The persistent legislation of this period was another important point, which led the town councils to see private sector actors as the agents capable of solving the water supply problem.

At the same time, the alignment of existing business strategies in Great Britain and France played a significant role. As the century progressed, foreign investment began to dry up—due to the conflict that broke out in 1914 and the subsequent legislation that appeared in Spain with a very nationalist slant—leaving a large part of the sector in the hands of Spanish capital. These years saw the period of maximum expansion and the opportunity for some Spanish businessmen to take control of these companies.

The very nature of the business—natural monopoly, regulated and controlled sector, pricing policy—explains to a great extent the functioning of these companies throughout the period. Among them, it is worth mentioning the withdrawal of competition, the control of the market and the progressive predominance of large companies. The trend led to the disappearance of smaller companies due to their acquisition by larger firms and the gradual municipalisation of the service by the town councils.

Finally, a large number of these companies are the result of the investment interest of foreign capital in Spain and of the initiatives promoted by local leaders with industrial interests. In some companies, small investors and the predominance of the family component are observed. The permanence of some of these companies over time—despite the ups and downs—shows that they enjoyed relatively secure profitability and stability.

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