Belgian investment in tramways and light railways. An international approach, 1892–1935[i]

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Foreign capital has been of paramount importance in the creation of urban infrastructures because of the magnitude of the investments involved, their technological complexity, and the management difficulties associated with such undertakings. This was especially true in the emerging field of elec- tricity and other associated activities such as tramways. Investment was often motivated by a desire to open up new industrial markets, and certain coun- tries began to concentrate on specific sectors.[1] German capital focused on electrical engineering, the French on urban gas lighting, and the Belgians on tram companies and light railways, in some cases acting as a bridgehead for German electrical groups.[2] Meanwhile the British concentrated on telegraph, services, water supplies and tramways.[3]

Hitherto, historical research has concentrated on individual borrower coun- tries or on the specifi fi of electricity.[4] In this article the international invest- ments made by Belgium are analysed both geographically and quantitatively, within the urban transport sector, a sector which has been little researched and in which Belgium played a leading role in several countries.[5] The article looks at the importance of foreign ownership in transport enterprises, a subject of on-going debate in transport historiography. The hypothesis that the article puts forward is that the promotion of tramway enterprises abroad, via Belgian capital, is linked with the search for new markets for the steel and engineering industries. To this end new evidence will be provided which sheds light on this relationship. This contribution will help us to better understand the role of Belgian capital in promoting tramway networks throughout the world, the motives behind such investment and the mechanisms and strategies used.

There are two clearly discernible stages with respect to the periods in which tram enterprises were set up abroad by Belgian firms. In the first of these periods, up to the First World War, the importance of tramway companies increased steadily, while the second, the inter-war period, was one of decline. The expansion of tramway networks and their electrification took place largely in the first stage. Once the basic networks were in place, the economic and political convulsions of the 1920s and 1930s led to the second stage. This article focuses on the first of these periods, which is more important from an historical perspective. The broader context of Belgian finance provides us with a backdrop against which we can better situate Belgian foreign investment in tramways. To this end I will first analyse the geographical distribution of tramway companies registered in Brussels for the years 1892, 1913 and

1935.[6] Second, I will study certain data pertinent to the main Belgian holding companies active in the tramway sector: the founding of the companies, their capital and share ownership. I also attempt to analyse the portfolios of these groups in order to carry out a geo-economic evaluation of their development. Finally, I shall illustrate the evolution of Belgian holding companies by analysing the progress of the Compagnie mutuelle de tramways, one of the most important holding companies.

The growing importance of Belgian foreign investment in tramways up to 1914

Belgium based its industrial development on several favourable factors of a geographical, historical and organisational nature.[7] The surplus of the indus- trial revolution's basic resources, coal and iron, was a great advantage and this determined the nature of Belgian industrialisation, which focused on the iron, steel and mining industries. Fundamental to the consolidation of this model were advances taking place in the banking system.

During the second quarter of the nineteenth century, Belgian financial systems developed to such an extent that the financial sector was to become the most important in the economy, acting as a motor of industrialisation and giving rise to the mixed banks.[8] The mixed banks, those that operated both as commercial and merchant banks, promoted industrial enterprises and pub- lic utilities through the provision of long-term loans and through their finan- cial participation in these companies. Mixed banking in Belgium began in the 1830s when the Société générale was forced to accept shares in industrial companies with financial problems in return for the cancellation of debts. From 1870 onwards, and especially after 1895, the activities of the Belgian mixed banking system became increasingly international in outlook. This trend was led by the Société générale and subsequently imitated by others.[9] Thus it was within this context that the model of the 'holding company' reached maturity.[10] One of the main advantages of this model was that the banks no longer had to manage their own industrial portfolios. That side of their business was entrusted to specialist organisations, reducing the amount of capital they had tied up, and so indirectly extending banking control and the modernisation of the sectors involved.

Belgian mixed banks and holding companies were neither hierarchical in structure nor centralised, as was the case in the United States or Germany. In fact it was not until after the Second World War that a new system of business organisation was imposed on Belgian companies by the Americans and Germans.

A sectoral analysis of large Belgian businesses confirms the clear predominance of heavy industry throughout the whole of the period 1892–1938

(Table 1) – a period in which, with the exception of 1938 itself, transport companies (railways and tramways) constituted the biggest companies in Belgium. The temporary drop in the number of businesses in the transport sector at the end of the nineteenth century was due largely to company mergers and the decline in the construction of the new railways. This trend was reversed by the impetus that came from the explosive growth in urban transport both in Belgium and elsewhere during the early twentieth century.

Table 1 The fifty largest Belgian companies, 1892–1938[a]

Sector	*1892*	*1900*	*1910*	*1920*	*1930*	*1938*
Transport	27 (64)	19 (54)	26 (65)	17 (46)	7 (20)	3 (6)
Metals and metal processing	7 (13)	12 (18)	7 (11)	14 (27)	11 (27)	10 (22)
Non-ferrous metals	2 (4)	2 (3)	2 (2)	4 (8)	4 (8)	3 (7)
Electricity and gas	5 (9)	6 (9)	8 (9)	5 (5)	11 (6)	12 (21)
Coal	3 (3)	5 (6)	3 (4)	1 (1)	2 (2)	4 (5)
Various[b]	6 (7)	6 (10)	4 (9)	9 (13)	15 (27)	18 (39)
Total	50 (100)	50 (100)	50 (100)	50 (100)	50 (100)	50 (100)

Notes *a* By assets, including only industrial limited liability companies quoted on the Brussels stock exchange. The percentages, in brackets to the right of these figures, represent the sum of the fifty biggest Belgian companies' assets. *b* In 1938 half these companies were colonial companies.

Source H. Wee, 'Large firms in Belgium, 1892–1974: an analysis of their structure and growth', in D. C. Coleman and P. Mathias, *Enterprise and History* (Cambridge, 1984), pp. 202–3.

The period 1870–1914 was the Golden Age of foreign investment, and this was to be especially intense during the decade prior to the First World War.[11] Belgium, despite its small size, was to exercise appreciable weight in terms of investment.[12]

From 1870 onwards mixed banking and especially the Société générale played a major role, both directly and indirectly via its holding companies, in the setting up of Belgian firms abroad, especially in the transport sector.[13] This occurred largely as a response to the relative saturation of the Belgian railway market, which meant that there were few further opportunities for internal investment. The banks responded by channelling their resources into tramway projects abroad in order to stimulate demand for their coal and metal subsidiaries. This market saturation was a general feature in Western Europe: the share of railways and tramways as a proportion of fixed capital investment decreased sharply after 1860 in most countries.[14]

It should also be emphasised that, whilst Belgian capital began to find its way into foreign markets, foreign investment was also on the increase in Belgium, owing to fiscal and institutional factors.[15] These flows of capital reflected the growing internationalisation of capital, acting in different sectors; in the case of Belgium this involved investment in tramways abroad and foreign investment coming into Belgium, aimed mainly at the electrical and financial sectors. Much of this foreign investment in Belgium was French, and French capital became the strongest investment force in Belgium after the unification of the French and Belgian monetary systems within the framework of the Latin Monetary Union of 1865. The Franco-Prussian War accelerated the flow of French capital into Belgium. German investment in Belgium, which had been non-existent prior to 1880, also grew spectacularly up to the First World War, especially in the chemical, electrical and metallurgical sectors, and in the Belgian colonies. This investment was viewed in a somewhat negative light because of its supposed 'imperialistic' nature.[16] From 1895 German capital, in particular the electrical giant AEG, created holding companies in order to manage their foreign investments. German investment took place in politically sensitive regions such as France or Latin America either directly or via the bridgeheads of Brussels and Zurich.[17] German participation in Belgian holding companies was usually carried out indirectly, through Belgian banks in which German participation was predominant.[18]

The creation of tramways and light railway companies, both in Belgium and abroad, underwent a series of fluctuations, which are shown in Table 2.[19] These fluctuations reflect the different stages of Belgian investment up to 1913 and, in turn, the general business cycles of the Belgian economy.[20] They suggest that the main variable in the choice of investment is the state of the Belgian financial market up to 1913 rather than the investment options of the borrowing countries. The first tramway companies, of which the light railway companies constituted a small minority, were to appear in the 1870s. These companies came about largely as a result of the stock market boom which accompanied the institutional liberalisation of 1873 and the arrival of French capital after the Franco-Prussian War, which increased throughout the early 1880s.[21] Later in the 1880s and in the early 1890s there was stagnation with regard to investment, coinciding with the agrarian depression and stock market crisis. During this period almost all Belgian investment in tramways took place either in Belgium itself, where the holding companies were set up, or in France, Italy and Germany.

The period 1894–1913 witnessed intense growth in investment in tramways. This was a consequence of the expansion of the economy as a

Table 2 Tramways and light railways set up by Belgian companies, 1874–1933

Period	*Average No. Of companies*	*company capital* (*BFr million*)	*Average company* Capital (*BFr million*)
1874–1878	8	82.3	10.3
1879–1883	30	300.2	10.0
1884–1888	3	14.0	4.7
1889–1893	3	52.0	17.3
1894–1898	28	223.6	8.0
1899–1903	11	305.8	27.8
1904–1908	24	237.8	9.9
1909–1913	19	225.4	11.9
1914–1918	1	18.0	18.0
1919–1923	0	–	–
1924–1928	3	172.5	57.5
1929–1933	1	30.0	30.0

Source *Recueil Financier*, 1893, 1915 and 1936.

whole, an expansion which helped to nullify the effects of the earlier stock market crises.[22] In the case of the tramways, the saturation of the railway markets stimulated the need to look for new markets for the coal and metal industries.[23] Growth in this period was also undoubtedly linked with the process of electrification. The technological advances that were taking place generated a plethora of opportunities for investment which had a 'knock-on' effect upon other industries. In Madrid, for instance, the Société générale de tramways électriques d'Espagne, a Belgian company that controlled the Madrid network, bought 105 Belgian electric motors for trams between 1900 and 1908 in addition to 100 from Westinghouse and fifty-seven from the American-French Thomson Houston.[24] The electrification of trams implied not only a strong increase in investment but also a change in the composition of the assets. As assets the tramways themselves were now more valuable in that they represented an increasing proportion of overall investment. Electric traction gave rise to increases in flexibility, speed and capacity, and resulted in cheaper fares. The electrification of tramways also signalled the change from a middle-class to a truly 'popular' form of transport in the broadest sense.[25]

The electrification of tramway networks was the main goal of Belgian holding companies. They were especially interested in the big cities because of the size of these markets and the economies of scale they offered. The companies' *modus operandi* was: first acquire the operating companies which were too small to carry out electrification unaided, then proceed to unify the whole network and finally carry out the electrification work itself. Financial resources for tramway operators usually came from their holding companies, which issued shares or, more commonly, debentures. In the small cities the tram operating companies were often owned by local businesses, which obtained their finance from local banks, which themselves were often linked with the tram network enterprise. The electrification and expansion of the tramway networks implied a considerable increase in demand for vehicles and the materials needed for electrification. Tramcar bodies usually came from Belgian manufacturers while the United States and Germany supplied the electrical equipment, with German electromechanical concerns often acting through Belgian firms.

The years between 1894 and 1913 constitute a stage in which Belgian tramway investment became more international in character, the majority of the new investment being channelled into Russia, the Middle East, Spain and Italy.[26]

The opportunities for internal investment in Belgium became scarcer as the urbanisation process continued and railway and tramway networks were completed. These circumstances served as an incentive for Belgian banks to channel savings into foreign investment, mainly towards the construction of tramway networks. These in turn created an important source of demand for the products of Belgian manufacturing industry, which often belonged to the banks. The process was to reach its zenith during the period 1895–1913. Belgian industries (Franc-Belge de la Croyère, etc.) usually provided basic products such as rails and tramcar sub-frames, while Brill, either in Philadelphia or at its Paris branch, made the underframe and running gear. Electrical equipment such as motors, dynamos and cable mechanisms usually came from Germany (AEG, Siemens) or the United States (General Electric, Westinghouse) and occasionally from Belgium itself (Constructions électriques de Charleroi). These parts were subsequently assembled by specialist companies in the country that had ordered them.[27] One of the main reasons why German electromechanical products were so competitive was the excellent terms of payment extended to foreign customers. This was possible because of the industry's links with mixed banks. A further aspect of this process was the international flow of technological expertise in tramways, principally between the United States and Germany, and to a lesser extent among other countries, whereby the patent-holding company licensed the use of certain kinds of technology to other companies.[28]

Analysis of the geographical distribution of Belgian investment reveals that in 1892 the number of Belgian tramway companies was already high (Table 3). A significant number of them, especially in terms of their capital, were owned by companies based solely in Belgium. At that time, however, the main thrust of Belgian capital investment was focused abroad; foreign investment accounted for about 67 per cent of total investment. Investors' preferences during the initial phase of international growth were for European countries, especially France, Italy, Germany, Spain and also Russia, which was becoming an increasingly desirable target for foreign investment.

Table 3 The geographical distribution of Belgian investment in tramway and light railway companies in 1892, 1913 and 1935

	1892			*1913*			*1935*		
Region	*No. of firms*	*Capital (BF million)*	*% of total*	*No. of firms*	*Capital (BF million)*	*% of total*	*No. of firms*	*Capital (BF million)*	*% of total*
Belgium	6	44.9	28.4	20	131.7	11.5	9	435.5	49.3
Western Europe	6	18.8	11.9	5	52.3	4.6	5	41.5	4.7
Mediterranean Europe	10	45.4	28.7	37	292.1	25.5	7	48.8	5.5
Eastern Europe	7	38.0	24.0	29	254.7	22.2	9	66.2	7.5
Latin America	0	0.0	0.0	1	126.0	11.0	2	125.0	14.1
Middle East	1	3.6	2.3	6	78.1	6.8	4	167.0	18.9
Far East	0	0.0	0.0	3	19.8	1.7	0	0.0	0.0
Various[a]	1	7.5	4.7	9	192.7	16.8	0	0.0	0.0
Total	31	159.2	100.0	110	1.147.4	100.0	36	884.0	100.0

Note *a* Principally made up of holding companies with interests in several countries.
Source *Recueil Financier*, 1893, 1915 and 1936.

The year 1913 saw the heaviest Belgian investment in tramways and light railways, and in the main this investment took place abroad. It was not simply that investment levels in the tramway sector had substantially increased, but that such investment was being channelled abroad and now constituted

78 per cent of total investment. The number of companies and the capital they controlled grew spectacularly almost everywhere except in Western Europe. Relatively speaking, the expansion taking place outside Europe, and especially in the Middle East, which was an area of increasing strategic interest, was much greater. Spain, Italy and Russia were now being displaced by other countries such as Argentina and Egypt in terms of their importance. At the same time, other industrialised countries were completing and electrifying their national tramway networks but had little direct investment in this sector beyond their own borders.[29] The United States and Germany exceeded other countries in terms of the number of networks electrified thanks to the pre-eminence of their position in the electrical industry.[30] Overhead electric traction, which was developed in the United States, swept across North America. With the exception of Germany, Europe was initially reluctant to adopt the new system, on aesthetic grounds and because safety regulations were usually stricter than in the United States.[31] The international expansion of the American electrical industry in Europe was, in the main, based on joint undertakings in which American technological superiority was married to local management and capital.[32] In Germany the three leading firms (AEG, Siemens and Schuckert) were responsible for roughly 90 per cent of all electric tramway installations, and it was these companies in particular which set up holding companies for tramway networks throughout Europe. The general pattern in Europe was for private enterprise, particularly in the form of the leading electromechanical firms, to diffuse innovations in transport technology throughout each individual country. This tendency was particularly marked in France, although Britain proved an exception. France possessed the least dense tramway network but the densest system of light railways, very few of which were electrified. French tramways were heavily dependent on American technology.[33] In France a large proportion of the electromechanical industry's surplus capital was set aside for the electrification of its tramway subsidiaries and in large measure the electrical firms' profits came from the manufacture of tram-related products. Profits derived from selling their technological services to the tramway companies, although dividends from the tram subsidiaries themselves constituted a small proportion of the whole. From 1902 the French electrical engineering groups, which until then had specialised in traction, became active promoters of power stations, motivated by the saturation of the tramway market. Most of the medium-scale French foreign investment in trams was undertaken by Thomson-Houston de la Méditerranée, and took place primarily, as the name suggests, in the Mediterranean region.[34]

In Britain many tram companies were owned by the county councils, and were set up with the example of the city of Glasgow in mind, which was to act as a model for subsequent tramway companies in Great Britain. The fact that the county councils managed the tram networks meant that the electrical companies were unable to exploit them, since they were not formally linked, in other words there was no 'captive market'. British electrical producers remained relatively fragmented and acted in a highly competitive market.[35] From 1900 onward this model became more popular throughout the whole of Europe, where at least some of the tramways in each leading country, except France, fell into municipal hands. In 1930, out of a total of fifty-seven European tram enterprises, thirty-three belonged to local councils, twelve were private and twelve mixed.[36]

The international entrepreneurial spirit had the effect of removing many of the differences between countries and regions with respect to the spread of electric tramways. Thus, in the same way that American enterprise was to be crucial in the spread of tramways throughout France and Great Britain, so German and French enterprise was to play a key role in the development of the Mediterranean countries. The influence of Belgian entrepreneurs in Eastern Europe and the Middle East may be seen as analogous to the role of their British counterparts in their colonies and in Latin America.

Table 4 compares the levels of Belgian and British foreign investment measured in tramway company shares.[37] Belgium would seem to be the heavier foreign investor in tramways, at least as far as direct investment is concerned. There is a clear difference in the main recipients of these investments. Belgium channelled most of its investment towards Europe, especially Russia, Italy and Spain, whereas Britain's investments were principally directed towards the United States, Argentina, Canada, Brazil and Mexico. As far as the other continents were concerned British capital was centred on the Empire. It is noteworthy that only Argentina received important sums of capital from both Belgium and Britain and was therefore an exception to the rule that, generally speaking, Belgian and British investment in tramways did not occur in the same countries. The investment strategy of both Belgium and Britain focused on a limited number of recipient countries. 80.2 per cent of Belgian, and 80.3 per cent of British, foreign tramway investment went to five countries. A further difference is evident in the pattern of distribution for foreign tramway investment over time. In both countries foreign investment in tramways was most intense during the post-1893 period. Over the entire period analysed, 87 per cent of British and 91.6 per cent of Belgian total investment in tramways was carried out abroad during this second period. Moreover, to an overwhelming extent, the investment taking place in this latter period involved the electrification of tramways, which obviously required large amounts of capital, while the investment taking place prior to 1893 was concerned with horse-drawn trams. During the pre-1893 period Britain's investment in tramways represented only 13.0 per cent of its total investment (in tramways) for the entire period, while the figure for Belgian investment was a mere 9.4 per cent. These figures show that British foreign investment in horse-drawn trams was greater than that of Belgium. This may be explained by the fact that the British began investing sooner than the Belgians and by the fact that the Belgians, who had the support of the German electromechanical groups, had the edge on the British in terms of technological innovation. In some cases, and in certain countries such as Spain, Belgian firms even went so far as to buy up British-owned horse-drawn tramways in order to electrify their networks.

Table 4 Belgian and British foreign shareholdings in tramway companies, 1865–1914, by recipient continent, expressed as a percentage of the total, and overall total (£ sterling)

Continent	*Belgium*	*Great Britain*
Europe	78.47	8.78
North America	–	47.39
South America	7.46	34.06
Africa	8.96	1.08
Asia	5.11	5.64
Australia	–	3.06
Total	£33,984,000	£19,011,000

Note The British figures include investment in buses.

Sources Belgium: *Recueil Financier*; Great Britain: Stone, *Global Export of Capital from Britain*.

Companies competing for a particular country's public service contract were apt to make use of the specialist knowledge they had in respect of urban transport and their contacts within the power structures of the country in question, including any privileged information they might be able to obtain. In this sense, the role of the consul was crucial, with regard both to the passing on of information connected with the nursing of government contacts and to guidance on the choice of supplier. The local consul played a key role in defending the interests of Belgian companies abroad, dealing with local politicians, competitors and trade unions. Belgium's diplomats were active and efficient in this role.[38] And in this sense the 128 reports on tramways sent in by Belgian consuls between 1894 and 1913 show clearly in which countries Belgium had important investments in tramways.[39]

The next stage in our analysis covers the holding companies. Twelve companies are selected, whose main activity focused on trams and light railways.[40] Unfortunately information on the majority of these twelve companies was available only up to 1913. The basic characteristics of each company are looked at: the year in which it was founded, its capital, the main shareholders, and the company's investment portfolio. It was not possible to obtain all the information on each organisation, and this was especially true in the case of the company portfolios. Another limitation was that, in most of the holding companies, there was no asset valuation of the companies in each portfolio, so the relative weight of each company in the portfolio remains a mystery. Table 5 sets out the basic data.

Most of the holding companies were set up in the years 1880–81 and more especially between the years 1895 and 1900, the two main periods of growth in the Belgian tramway sector. The capital entering the sector increased during the period studied, and this is reflected in the growth of these groups. The shareholders in the most powerful holding companies were the big banks (Banque de Bruxelles and Société générale[41]), and in the case of Sofina the German shareholders were particularly prominent.[42] In the case of the smaller holding companies the shareholders were usually individuals. As time went on, and especially towards the end of the 1920s, mergers took place.[43] The various holding companies sometimes maintained close links with one

Table 5 Basic data on Belgian tramway holding companies (BF million)

Holding co.	*Founding year*	*Capital outlay*	*Capital in 1913*	*Main shareholders involved in the founding year*
1	1880	7.5	15.0	Banque Philippson & Horwitz, Banque central anversoise
2	1889	8.0	24.0	Banque de Bruxelles, Banque Paribas, Brugmann, Cassel
3	1881		1.5	Texier de la Pommeraye, Désiré Gilles
4	1895	1.0	15.5	Banque auxiliaire de la Bourse
5	1895	6.0	2.0	Edouard Otlet
6	1896	1.0	3.5	Compagnie mutuelle de tramways
7	1897	1.5	10.0	Cie générale de traction, Georges Chaudoir, Jules Nagelmackers
8	1898	10.0	25.0	GEU, Disconto Gesellschaft, Dresdner Bank, Cassel, Josse Allard, Banque Liégeoise
9	1900	5.0	1.3	Hutt
10	1904	1.0	35.0	Edouard and François Empain
11	1906	1.0	2.5	Edouard and Henri Thys, Firmin Lambeau, Désiré Maas, Ch. Dietrich
12	1910	1.5	3.2	W. B. Hopkins, Gaston Philips

Notes 1 Compagnie générale de chemins de fer secondaires, 2 Société générale de chemins de fer économiques, 3 Chemins de fer vicinaux belges,[a] 4 Compagnie mutuelle de tramways, 5 Union des tramways, 6 Société belge de tramways, 7 Société générale de tramways et d'applications d'électricité, 8 Société financière de transports et d'entreprises industrielles (Sofina), 9 Compagnie internationale de tramways, 10 Compagnie générale de railways et d'électricité, 11 Société générale de tramways,[b] 12 Tramways et electricite.

a Not to be confused with the Société nationale des chemins de fer vicinaux, founded in 1884, which was State-owned but independently run from its inception and remained thus until it was split up in 1992.

b Not to be confused with its homonym, set up by the Banque de Bruxelles in 1874 and taken over by the Société générale de chemins de fer économiques in 1882. It was the first tramway holding company. (R. Brion and J. L. Moreau, *Tractebel 1895–1995 : les metamorphoses d'un groupe industriel*, Brussels, 1995, pp. 22, 24).

Source *Recueil Financier*, 1915, 1936.

another, working together in the management of some companies, and it was not uncommon for a director to sit on the boards of various companies.[44]

What the data reveal is that the holding companies at that time were investing heavily in international markets. If we look at the holding companies' shares in companies operating in Belgium, we find that they constitute barely 12 per cent of the investment portfolios as a whole. Most foreign investment (about 60 per cent) took place in Europe, principally in Western and Mediterranean Europe, while the extra-European investment (20 per cent) is concentrated in America, especially in Latin America. The relatively low presence in North America (only one holding company) reflects the fact that the area was more highly advanced in terms of technology and development, and that competition was stiffer – although in both Africa and Asia, where such was not the case, the relative presence was also low.[45] It would seem to follow, therefore, that Belgian capital was being channelled towards markets where potential growth was high and which were at the same time accessible. The results do not differ substantially from those in Table 3, except in the case of Western Europe. A distinction should also be drawn between the holding companies with smaller portfolios, whose interests tended to be

Table 6 Investment portfolios of Belgian tramway holding companies: geographical distribution in 1913

	1[a]	*2*	*3*	*4*	*5*	*6*	*7*	*Total*
Value of the portfolio[b]	33.7	31.8	1.3	38.2	17.5	2.4	72.0	195.6
No. of countries	10	10	5	17	13	2	8	26
No. of companies	31	40	7	49	44	12	42	180
No. of securities	231,222	218,544	7,938	445,306	225,976	26,546	418,977	1,574,509
Regions as a % of securities								
Belgium	5.1	3.1	58.5	16.9	1.5	0.0	19.6	11.7
Western Europe	0.4	2.6	0.0	25.2	3.5	0.0	56.7	23.1
Mediterranean Europe	32.9	64.3	0.6	8.4	16.1	99.0	0.0	20.1
Eastern Europe	0.6	6.1	35.2	32.0	12.4	0.0	14.9	15.9
Latin America	10.9	10.0	0.0	5.1	56.7	0.0	1.4	12.9
North America	44.1	0.0	0.0	0.0	0.0	0.0	0.0	6.5
Middle East	0.0	11.8	0.0	1.4	0.1	0.0	7.0	3.9
Far East	4.7	0.3	0.0	9.8	1.4	0.0	0.1	3.7
Unknown[c]	1.3	1.9	5.7	1.1	8.3	1.0	0.3	2.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes *a* Data from 1910. *b* BFr million. *c* Companies in which the absence of geographical data does not allow us to be more specifi Generally these companies are probably companies operating in Belgium and in certain cases, multinational holding companies. 1 Compagnie général de chemins de fer secondaires, 2 Société générale de chemins de fer économiques, 3 Chemins de fer vicinaux belges, 4 Compagnie mutuelle de tramways, 5 Société fi de transports et d'entreprises industrielles (Sofi 6 Compagnie internationale de tramways, 7 Compagnie générale de railways et d'électricité. For the sake of obtaining a homogeneity that permits a better comparison I have handled the data related only to those holding companies whose investment portfolio was published for that year. Thus the twelve holding companies in Table 4 were reduced to seven, the most important companies in terms of capital in 1913. In some holding companies, only the names of their portfolio companies were mentioned; in others the kinds of stocks (basically shares and debentures of different types) and the quantity of stocks are also mentioned; in some companies the information was more complete, since it included the nominal value of most of the stocks as well. Because of this inconsistency I have decided to take as reference the number of stocks owned by each company.

Source *Recueil Financier*, 1915.

more polarised and centred in Mediterranean Europe and Belgium, and those with larger, more diversified portfolios, although they too concentrated most of their investment on a single region, normally Europe. The composition of these portfolios, in terms of sectors, is shown in Table 7.

Table 6 provides an analysis of a number of financial groups, all dealing with urban public services, principally railway transport and electricity.[46] These are, in the main, holding companies, which have been either set up or absorbed by the large banks in order to better manage their industrial portfolios specialising in the transport sector. These companies constitute a clear example of horizontal merger, although there was also a certain tendency towards the integration of additional activities, such as networks of public utilities, particularly tramways, and electricity companies, and the inclusion of some companies from the iron and steel industry, although this was rather more unusual. In general the holding companies differed very little in the distribution of their portfolios, except that the smaller holding companies tended to have a larger proportion of their investments focused on railway transport, while the larger groups maintained important levels of investment in the electrical sector.

Table 7 Belgian tramway holding company portfilios in 1913 as a percentage of distribution according to sector

Sector in % of securities	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*Total*
Tramways	24.9	70.8	100.0	46.4	36.6	15.6	41.9	42.1
Tramways and electricity	1.1	9.3	0.0	18.6	9.5	0.6	1.3	8.1
Tramways and railways	0.0	0.5	0.0	1.1	0.0	0.0	0.0	0.4
Railways	68.7	10.6	0.0	0.5	3.2	70.7	15.8	16.9
Water/gas/electricity	3.5	8.5	0.0	33.4	50.6	13.1	39.3	31.9
Others	1.8	0.3	0.0	0.0	0.1	0.0	1.7	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes See Table 5.
Source See Table 5.

The better to illustrate the evolution of the tramway holding companies this study focuses on one of the most important companies, the Compagnie mutuelle des tramways. This holding company was set up by the Banque auxiliaire de la Bourse in 1895, during the second wave of the expansion of Belgian tramway companies, as a means by which the bank could manage its urban transport portfolio. From its inception the Mutuelle carried out most of its investments abroad, concentrating its activities in Eastern Europe and, in particular, the promising Russian market. On the eve of the First World War its investments outside Europe, especially in Argentina and Thailand, began to increase considerably. The company's portfolio was heavily biased towards tramways but its assets also included light railways. The weight of investment in electrical companies was also to increase; although the electricity sector is often linked with urban transport, it was initially regarded as complementary to the tramways. The Mutuelle's strategy consisted of the unification, rationalisation and electrification of the tramway networks. Its policy was normally to try and obtain the electric lighting concession in order to guarantee a reliable demand for electricity and then to take advantage of the 'synergy' of controlling the two parallel industries. The acquisition of the tramway networks and their electrification required a great deal of capital, so it became necessary for the company to increase its resources by issuing shares or debentures.

During the years 1900–02 there was a brief crisis which accelerated the process of merger which was already under way.[47] Since the crisis was particularly acute in Russia, there were repercussions on the Mutuelle, and it was eventually taken over by the Société générale. The decade prior the First World War constituted a new stage in the growth of Belgian tramway holding companies, and collaboration among them in setting up or reorganising the predominant tram and electricity companies was widespread.[48]

The slump in Belgian investment in tramways, 1914–38

The First World War and the immediate post-war period were a turning point for the Belgian economy. During the inter-war period Belgian foreign investment declined in favour of domestic and colonial markets. The reasons for this decline include losses in the First World War and the Bolshevik revolution, the rise of nationalist and municipal movements, the instability of exchange rates and the decrease in commercial contacts abroad.[49] Yet after the First World War, and especially between 1925 and 1930, the rate of holding company creation intensified, first in the transport sector and later in the electrical sector.[50] The banking system was also hit by the Depression in the 1930s and this led to the disappearance of the most recently created companies, which did not possess the reserves necessary to survive the crisis. One result was the enactment of banking Acts in 1934–35, which forced the banks to formally separate their deposit and investment activities, preference being given to short-term transactions and State loans.

From 1914 onwards the Belgian transport sector was to encounter difficulties which were to cause a sharp fall in both the number of companies and the percentage of total capital (Table 1). The main reasons for this decline were the financial and organisational problems caused by the First World War, the seizure of companies in Russia during the Bolshevik revolution, and the Depression.[51] The growth of the gas and electricity companies between 1920 and 1938 reflects the increased consumption of gas and electricity, not solely by Belgian industry, but also by its tramway concerns. In fact, during this period, the tramway holding companies became dominated by electrical companies. If the years 1892–1920 constituted a phase in which there was little change with regard to Belgian corporate leadership, the years between the wars were much more dynamic in the sense that the leading companies in each sector, and the sectors themselves, were volatile because of the inherent instability of the era.

During the inter-war period many Belgian-owned tramway companies abroad became nationally owned, that is, private local investors began to invest in these companies to the extent that the companies came under local control. It should be underlined, however, that, although a lot of companies were now in the hands of locally owned businesses, the electrical equipment for the trams continued to be bought abroad, although less technologically complex components, such as the underframe, began to be made locally. When there were difficulties importing vital parts the parts were increasingly obtained by 'cannibalising' old vehicles to produce new trams – a practice which was also common in Spain in the 1940s. One of the consequences of this method of modernisation was that the new trams usually displaced old ones on routes bordering the outskirts of cities.

The state of the economy cannot in itself explain the disappearance of the most recently formed tramway companies. The home market had reached saturation point in terms of tramways, and this, combined with the fact that the omnibus was beginning to represent serious competition for the tram, goes some way towards explaining the decline.[52] Faced with increasing economic difficulties, the end of the concession system, and the prospect of replacement with bus routes, the tramway companies themselves were disinclined to undertake the heavy investment needed to modernise their networks. The nationalist political climate in Europe encouraged companies to get rid of their assets abroad and made them reluctant to undertake new business ventures. The tramway companies were now heavily involved with the emerging electrical industry and novel investment procedures were to reflect this close relationship. It is significant that the growth in the number of tramway companies set up after the First World War reached a peak during the years 1928–30, a period which was to prove crucial for the process of business and financial amalgamation taking place in Belgium and especially in the electrical sector.[53] During the period 1914–33 few new tramway companies were established in Belgium, and those that were resulted from mergers or non-profit-making initiatives.[54]

Average company capital investment was fairly high compared with other sectors, since the tramway sector was capital-intensive.[55] The figures vary between BFr 8 million and BFr 12 million, and this figure rises steeply for the companies which were set up at the end of the 1920s, partly owing to the effects of high inflation and partly to the fact that firms in general were becoming larger.

In the mid-1930s the outlook changed radically (Table 3). The effects of the inter-war period were much in evidence; during the 1930s even nominal investment decreased. Belgian capital during this period focused mainly on domestic tramway markets. European tramway profits decreased, to a large extent because of competition from other means of transport and a process of network expansion in which marginal costs outweighed marginal income. Rising levels of inflation also meant that operating costs were outstripping the income derived from passenger fares. In 1912, out of fifty-three European tramway enterprises, only 10 per cent produced losses. In 1935 the figure had risen to 51 per cent.[56] Throughout the inter-war period the operating results of European tramway companies were in decline. In the years between 1913 and 1921, out of a total of forty-five European tramway companies, only two reduced the length of their networks. Between 1921 and 1930 the figure rose to four and finally eighteen in the period from 1930 to 1935. Meanwhile between 1913 and 1921 eight companies reduced the number of trams in their fleets, a figure which increased to twelve in the period between 1921 and 1930. Finally, while only two companies reported a decline in the number of passengers between 1913 and 1921, the figure rose to ten between 1921 and 1930, and to forty-three in the period from 1930 to 1935.

It should be underlined that the deterioration was progressive and more intense during the crisis of the 1930s. Moreover the crisis also affected bus companies, if to a lesser extent. In fact during the 1930s only nine bus companies had to reduce the length of their networks, while a further twenty-seven actually extended their route length. Similarly twelve bus companies reported a decline in the number of passengers while twenty-five reported increases.[57] The displacement of the tramways by buses was especially intense on suburban lines, because the buses enjoyed the lower operating costs derived from road transport. Most of the early urban bus services in Western and Central Europe began in the mid-1920s. The countries with the greatest number of buses used for urban transport were France and England.[58] Just as the expansion of tramway networks took place much faster in the United States than in Europe, so decline proved faster there as well. In 1920, of 376 US cities, there was not a single city without streetcars. In 1930, however, there were twenty-nine and by 1936 there were 125.

By contrast, in Belgium the process had come full circle: at the end of the nineteenth century Belgium itself had been the focus of Belgian investment in trams. On the eve of the First World war the trend had been reversed and Belgian investment was targeted abroad. Finally, in the 1930s, Belgium itself was again the main focus of Belgian investment in tramways.

Conclusion

The years between 1895 and 1913 were the period in which there was the strongest growth in Belgian foreign investment in tramways and Belgian companies took advantage of their expertise in light railways and trams. This growth was stimulated by a powerful fi sector, with strong industrial links, which was looking for new markets for its heavy industries, a process which gave rise to the creation of a successful body of holding companies specialising in the management of this kind of company. In the 1890s the main recipients of Belgian capital for tram enterprises were Russia, Italy and Spain in Europe, and also Egypt and Argentina. In the inter-war years tramway investment fell, and this gave rise to the redirection of investment towards the electricity sector, which subsequently provoked important mergers. Belgian foreign investment in tramways decreased considerably, and there were both short and long-term reasons for the decline. To a great extent the majority of tramway networks had been completed, so the demand for equipment – one of the main attractions of the industry from the holding companies' point of view – declined.[59] Trams faced new forms of competition in buses and underground railways, and they began to lose their technological supremacy in the urban transport sector. Furthermore the fi system combined with the instability of exchange rates meant that the cost infl of the 1914–21 period led to lower profi and investments abroad were consequently less attractive to Belgian investors. Tramway undertakings were hardly ever particularly profitable ventures in themselves;[60] the real benefi to the electromechanical groups that controlled the tram companies lay in the fact that the electrifi and enlargement of the networks created a considerable market for their products. Finally, the rise of nationalist ideologies triggered a process by which many Belgian-owned tram companies passed into the hands of private domestic owners or, less frequently, into the hands of town and city councils.

Notes

1 *Unternehmergeschäft* was a new strategy which bound the German electrical engineering groups to their financial holding companies, whose aim was to open up new markets through the creation of local electricity, tramway and light rail firms. (P. Hertner, 'Financial strategies and adaptation to foreign markets: the German electro-technical industry and its

multinational activities, 1890s–1939', in A. Teichova, M. Lévy-Leboyer and H. Nussbaum, eds, *Multinational Enterprise in Historical Perspective*, Cambridge 1986, p. 150.)

2 An example of Belgium's international importance with regard to tramways and its links with Germany is that the Union internationale permanente de tramways was set up in Brussels in 1885, and throughout its history the president and the secretary were usually Belgian while one of the vice-presidents was generally German. (Union internationale permanente de tramways, *Congrès*, 1886–1939.)

3 Britain's capital exports in public utilities during 1865–1914 represented 6.3 per cent of the country's external investment. (I. Stone, *The Global Export of Capital from Great Britain, 1865–1914: a statistical survey*, 1999, p. 406.)

4 The works of A. Broder, 'Le role des intérêts étrangers dans la croissance économique de l'Espagne 1767–1924', *thèse d'état* (Lille, 1981), 'L'expansion internationale de l'industrie allemande dans le dernier tiers du XIXe siècle : le cas de l'industrie électrique 1880–1913', *Relations internationales* 29 (1982), pp. 5–87, P. Hertner, *Il capitale tedesco in Italia dall'unità alla prima guerra mondiale* (Bologna, 1983), 'Estrategias financieras', and L. Segreto, 'Imprenditori e finanzieri', in G. Mori (ed.), *Storia dell'industria elettrica in Italia* I (Laterza, 1992), pp. 249–337, 'Financing the electric industry worldwide: strategy and structure of the Swiss electric holding companies, 1895–1945', *Business and Economic History* 23, 1 (1994), pp. 162–75, 'Le rôle du capital étranger dans l'industrie électrique', in M. Lévy-Leboyer and H. Morsel (eds), *Histoire de l'électricité en France* II (1994), pp. 982–1019, should also be mentioned in this context.

5 In Italy in 1886 foreign capital controlled 71 per cent of tram routes, 92 per cent of the capital being Belgian. (P. Hertner, 'Municipalizzazione e capitale straniero nell'età giolittiana', in A. Berselli, F. Della Peruta and F. Varni, *La municipalizzazione nell'area padana: storia ed esperienze a confronto*, Milan, 1988, p. 59.) In Russia 72 per cent of tramway investment between 1909 and 1914 came from Belgium, which controlled half the forty electric tramways in the country. (J. Coopersmith, *The Electrification of Russia, 1880–1926*, Ithaca NY, 1992, p. 76.) In Spain 56 per cent of foreign investment in trams came from Belgium. (T. Costa, 'Iniciaivas empresariales y capitales extranjeros en el sector servicios de la economía española durante la segunda mitad del siglo XIX', *Investigaciones Económicas* 14, 1981, p. 74.) Urban transport in the main Argentinean cities such as Buenos Aires and Rosario was controlled by Belgian holding companies (J. L. Moreau, 'Grupos belgas y servicios públicos en Argentina', in B. De Groof, P. Geli, E. Stols and G. Van Beeck, eds, *En los deltas de la memoria: Bélgica y Argentina en los siglos XIX y XX*, Leuven, 1998, pp. 116–22) and this situation had its parallel in other countries such as China, Egypt or Algeria.

6 Selection has been based on the following criteria: 1892 is the first year of the source, the *Recueil Financier*, and the pre-war years 1913 and 1935 were chosen: the two World Wars that followed were periods of instability which had profound repercussions in Belgium.

7 For further analysis of the Belgian industrial revolution see H. Wee, 'The industrial revolution in Belgium', in M. Teich and R. Porter (eds), *The Industrial Revolution in National Context* (Cambridge, 1996), pp. 64–77, with selective bibliography on pp. 74–7. For a more generic study of various aspects of contemporary Belgian economic history see the collectin of articles in H. Wee and J. Blomme (eds), *The Economic Development of Belgium since 1870* (Aldershot, 1997).

8 For further literature on the Belgian financial system see the works of B. S. Chlepner, *Le Marché financier belge depuis cent ans* (Brussels, 1930); J. Meynaud, *Structures économiques de la Belgique : morphologie des groupes financiers* (Brussels, 1962); H. Wee, 'La politique d'investissement de la Société générale de Belgique 1822–1913', *Histoire, économie et société* 1 (1982), pp. 603–19; H. Wee and M. Goossens, 'Belgium', in R. Cameron and V. I. Bovykin (eds), *International Banking, 1870–1914* (Oxford, 1991), pp. 113–29; G. De Clercq, *A la Bourse : histoire du marché des valeurs en Belgique de 1300 à 1990* (Brussels, 1992); G. Kurgan, 'Finance and financiers in Belgium, 1880–1940', in Y. Cassis, *Finance and Financiers in European History, 1880–1960* (Cambridge, 1992), pp. 316–35; H. Wee, 'Investment strategy of Belgian industrial enterprise between 1830 and 1980 and its influence on the economic development of Europe', in Wee and Blomme, *Economic Development of Belgium*, pp. 186–204.

9 In spite of the sharp growth in the banking sector that began at the end of the nineteenth century, the Société générale continued to enjoy the hegemony which then existed, having 46.3 per cent of total banking resources in 1913 and 54.8 per cent in 1930. (Kurgan, 'Finance and financiers', p. 320.)

10 In the electrical sector German and Swiss electrical companies were pioneers in the creation of holding companies specialising in the financing and management of the new electrical companies. (L. Segreto, 'Financing the electric industry world-wide: strategy and structure of the Swiss electric holding companies, 1895–1945', *Business and Economic History* 23, 1, 1994, p. 163.)

11 In 1870 foreign investment amounted to £1,300 million, reaching £4,750 million in 1900 and £9,500 million in 1914. (A. G. Kenwood and A. L. Lougheed, *The Growth of the International Economy, 1820–2000: an introductory text*, fourth edition, 1999, p. 51.)

12 In 1914 Belgian capital invested abroad together with the Dutch and Swiss capital represented 12 per cent of total foreign investment. (Kenwood and Lougheed, *Growth*, p. 54.) The number of securities traded on the Brussels stock exchange rose from 670 in 1890 to 2,200 in 1913, the number of exchange agents from 250 to 900, and the value of stocks rose from BFr 5,500 million in 1895 to BFr 13,750 in 1913. (Chlepner, *Marché financier belge*, p. 76.)

13 The most important was probably the Société belge des chemins de fer, created in 1865 by the Société générale. (Wee and Goossens, 'Belgium', p. 123.)

14 P. Groote, R. Albers and A. Clemens, 'Dutch rail and tramways in a comparative perspective, 1838–1913', *Economic and Social History in the Netherlands* 7 (1996), p. 51.

15 The bureaucratic facilities for setting up companies and low taxes for firms.

16 Wee and Goossens, 'Belgium', p. 128.

17 For further details on the Swiss electrical holding companies and the hefty German presence within them see Segreto, 'Financing the electric industry'.

18 A. Broder, 'Banking and the electrotechnical industry in Western Europe', in Cameron and Bovykin, *International Banking*, p. 479.

19 They include both companies operating in Belgium and those operating abroad. They appear in the 'Tramways et chemins de fer économiques et vicinaux' section of the *Recueil Financier*. In 1936 it was headed 'Tramways, chemins de fer vicinaux et voitures', and I have not included the relatively few bus companies. The report cannot be considered exhaustive, because it includes only companies quoted on the Brussels stock exchange. This research is based on three specific years (1892, 1913 and 1935) and it may have been possible for some companies to grow and then cease to exist between the years in question. The data for capital includes shares and debentures, stated at nominal value.

20 Chlepner, *Marché financier belge*, p. 76.

21 De Clercq, *A la bourse*, p. 194.

22 If we look at the rate of decline and the length of the inter-century stock market crises we find that they were less intense and shorter-lived than those of 1873 and 1880. (See De Clercq, *A la bourse*, p. 257.)

23 In the Netherlands, for instance, between 1890 and 1913 the stock of gross fixed capital in infrastructure, i.e. rolling stock and stations, at constant prices, increased by 288.5 per cent with respect to tramways and only 49.3 per cent with respect to railways. (Groote *et al.*, 'Dutch rail and tramways', p. 48.)

24 A. Martínez, 'Las empresas de tranvías en Madrid, del control extranjero a la municipalización, 1871–1948', in press.

25 On the social impact of tramways electrification see J. P. McKay, *Tramways and Trolleys : the rise of urban mass transport in Europe* (Princeton NJ, 1976), pp. 192–238.

26 On Spain see Broder, 'Banking', and Costa, 'Iniciativas empresariales'; on Italy, Dumoulin, 'Italie–Belgique 1861–1915 : relations diplomatiques, culturelles et économiques', *thèse d'état* (Louvain, 1981); on Portugal, M. C. Lourenço, 'Investisseurs et investissements belges au Portugal 1884–1914', in M. Dumoulin (ed.), *La Belgique et l'étranger aux XIXe et XXe siècles* (Brussels, 1987), pp. 7–35.

27 In the case of Spain mainly Carde & Escoriaza, Lladró Cunat and CAF.

28 On American innovation in electric traction and the pattern of adoption in Europe see McKay, *Tramways and Trolleys*, pp. 35–124.

29 *Ibid*.

30 By the end of 1902 the proportion of lines electrified was 38 per cent in Britain, 98 per cent in the United States and 100 per cent in Germany. (McKay, *Tramways and Trolleys*, pp. 51, 73.)

31 For different comparative perspectives on American and European urban transport see G. Yago, *The Decline of Transit: urban transportation in German and US cities, 1900–1970* (Cambridge, 1984); J. P. Mckay, 'Comparative perspectives on transit in Europe and the United States, 1850–1914', in J. A. Tarr and G. Dupuy, *Technology and*

the Rise of the Networked City in Europe and America (Philadelphia, 1988), pp. 3–21; M. D. Reilly, 'Urban electric railway management and operation in Britain and America, 1900–14', *Urban History Yearbook* (1989), pp. 22–37; C. R. Semsel, 'More than an ocean apart: the street railways of Cleveland and Birmingham, 1880–1911', *Journal of Transport History*, 22, 1 (2001), pp. 47–61.

32 This was the case, for example, with the General Electric subsidiaries in Germany (UEG), France (the French Thomson-Houston Company) and Britain (the British Thomson-Houston Company).

33 D. Larroque, 'L'expansion des tramways urbains en France avant la première guerre mondiale', *Histoire, économie et société* 9, 1 (1990), p. 143.

34 P. Lanthier, 'L'industrie de la construction électrique en France avant 1914', in F. Carot et F. Cardot (eds), *Histoire de l'électricité en France* I (Sèvres, 1991), pp. 692–7.

35 On British tramways see also R. J. Buckley, 'Capital cost as a reason for the abandonment of fi tramways in Britain', *Journal of Transport History*, 10, 2 (1989), pp. 99–112.

36 Union international de tramways, *XXIe Congrès* (Varsovie, 1930), p. 587.

37 Shares represented 27 per cent of total British called-up capital in tram and omnibus undertakings, the remainder consisted of debentures (70 per cent) and notes (3 per cent).

38 To a great extent the commission charged with examining the Belgian Foreign Office budget attributed the success in creating Belgian companies abroad to the consular bodies, *chambres des représentants*. (Séance du 13 avril 1897. Budget du Ministère des affaires étrangères pour l'exercice 1897. Rapport fait, au nom de la section centrale, par M. de Ramaix. No. 144, p. 22. Document consulted in Archives du Ministère des affaires étrangers [of France]: Série Affaires diverses commerciales, sous-série Belgique 1896–1901, leg. 317: Sociétés belges pour l'exploitation d'entreprises à l'étranger 1897–1901.)

39 *Recueil Consulaire* 98–165 (1894–1913).

40 This does not mean that other holding companies did not have portfolio investments within this sector or that the investment of holdings was limited to the sector mentioned above. The list is not meant to be exhaustive. I have included only the holding companies that appear in the *Recueil Financier*. I am conscious that there were more tramway holding companies, a few of which scarcely appeared in the financial press because few of their shares were on the market. I do, however, believe that the list is representative of the most important holding companies. I decided to include small holding companies such as the Chemins de fer vicinaux belges, the Compagnie internationale de tramways and the Société belge de tramways in order to illustrate the contrasts in scale among these kinds of firms.

41 The Société générale adopted a somewhat cautious stance, and this explains the delay in creating holding companies, in comparison, for example, with the Banque de Bruxelles. (Kurgan, 'Finance and financiers', p. 322.)

42 The fiscal and commercial advantages provided by Belgian legislation, comparable in Europe only with that of the Swiss, motivated the holding companies with links to the German electrical giants AEG and Siemens to situate their head offices in Belgium and Switzerland. (Hertner, 'Financial strategies', p. 151.)

43 In 1913 the Compagnie mutuelle de tramways contributed to the financial reorganisation of the Société belge de tramways. (*Recueil Financier*, 1915, I: 313.) In 1929 Electrobel absorbed the Société générale de chemins de fer économiques. (*Recueil Financier*, 1936, II: 866.) See Kurgan, 'Finance and financiers', pp. 324–6.

44 The ramifications of these facts are beyond the scope of this study; although I have uncovered much evidence of 'cross-over' in terms of portfolio data and company members. See G. Kurgan, S. Jaumain and V. Montens, *Dictionnaire des patrons en Belgique* (Brussels, 1996), for a deeper analysis.

45 The importance of the Belgian presence in Africa and Asia has to be related to the very small number of tram operations in those areas during the period concerned (if we except Japan, which has been always closed to foreign investors, or India and South Africa, which were well reserved to British investors), just because there was almost nobody there to afford public transport or no need for it. However, the Belgian presence was hegemonic in countries such as China, Egypt and Algeria.

46 Under the heading 'Trams and electricity' we find that the interests of the tram companies had become, to a large extent, subordinated to those of the growing electrical sector. Under the heading 'Water, gas and electricity' most of the companies come under the umbrella of electricity. A gradual process of 'electrification' of the transport holding companies was taking place. It should be remembered that the criteria for selecting the holding companies was that their activity had to be centred, at least initially, on tramways and light railways.

47 The crisis affected the most recently established groups worst. These companies were, in the main, undercapitalised and their investment policies involved higher risks, as in the case of the Tramways réunis, which went into liquidation in 1902. In Germany, Schuckert was absorbed by Siemens & Halske and AEG merged with UEG; in Belgium the merger of AEG and the Union électrique, and the failed attempt at a merger between Sofina and SGBEE, can be cited. (R. Brion and J. L. Moreau, *Tractebel 1895–1995 : les métamorphoses d'un groupe industrielle*, Brussels, 1995, p. 34; Hertner, 'Financial strategies', pp. 151–2.)

48 The Mutuelle maintained a close relationship with the Union anversoise de tramways et d'entreprises électriques (set up by Edouard Thys in 1904), with the Compagnie centrale de l'industrie électrique (Fraiteur group, 1909) and with several holding companies belonging to the Empain group.

49 Kurgan, 'Finance and financiers', p. 323.

50 It is important to underline the fact that Sofina was reorganised in 1928 while Electrobel and Tractionel were founded in 1929 and Electrorail in 1930. Together these four holding companies were responsible for 95 per cent of electrical installation at the end of the 1930s. (Kurgan, 'Finance and financiers', pp. 324–5.)

51 Most of the Belgian railway companies were nationalised in 1926, when the SNCB was set up, but this move did not alter the position of the tramway companies. The local systems remained in private hands until the post-1945 era in the major conurbations (in Brussels till 1945 and partially in Liège till 1960, for example).

52 Competition was especially fierce for suburban lines and light railways, but rather less intense for urban networks, with the exception of some small cities. (Union international de tramways, *XXIIIe Congrès*, The Hague, 1932, p. 764.)

53 Between the years 1928 and 1935 a large-scale restructuring took place in the Belgian electrical sector which itself formed part of reorganisation in the mixed banking system. During these years, major electrical holding companies such as Sofina (1928), Electrobel and Tractionel (1929), Electrorail (1930), Contibel (1933) or Electrotrust (1935) were either founded or reorganised. This merger process was to be temporarily curbed by the banking reform of 1934–35, which obliged the mixed banks to separate their deposit and holding activities into separate entities. (G. Kurgan, 'Le régime économique de l'industrie électrique belge depuis la fin du XIXe siècle', in F. Cardot, ed., *1880–1980 : un siècle d'électricité dans le monde*, Paris, 1986, p. 125.)

54 As was the case with the electric suburban railway which ran from Brussels to the royal country residence of Tervueren, currently a museum dedicated to Africa.

55 H. Wee, 'Large firms in Belgium, 1892–1974: an analysis of their structure and growth', in D. C. Coleman and P. Mathias (eds), *Enterprise and History*, Cambridge, 1984, p. 208.

56 Union internationale de tramways, *XXIVe Congrès* II (1937), p. 45.

57 Union internationale de tramways, *XXVIe Congrès* I (1939), pp. 14–15.

58 One of the reasons for the British decision to replace trams with buses was that British trams were invariably single, not twin, cars, so they had no capacity advantage. In large cities such as Berlin and Paris the first petrol-engined buses began to operate in 1905 and 1906 respectively, some years before their appearance in other European cities. (Union internationale de tramways, *XXVIe Congrès* II, 1939, pp. 1–2.)

59 See Larroque, 'L'expansion', p. 166.

60 *Ibid*., p. 150; Stone, *Global Export of Capital*, p. 417.

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