

# Transnational business integration in the Western European mining regions, 1890-1914

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**ABSTRACT.** Border-crossing investments, mergers and acquisitions of multinational corporations are not a feature of entrepreneurship in the modern globalized world only. As early as in the late 19<sup>th</sup> century, foreign investments and co-operations with firms abroad were of great importance for the economic development of Western Europe. International business activities in the coal-mining sector and iron and steel industries have been the object of several historical studies. In the present paper, previous research will be expanded by choosing a larger spatial reference and the mutual investments and mergers in all important mining regions in France, Belgium, Luxembourg, the Netherlands and Germany will be examined. In conclusion, the paper discusses the causes of the growth of supra-regional business integration since the 1890s. Essentially, mutual delivery agreements, the geographical proximity of the mining regions, and considerably improving means of transportation made increasing business integration possible. Competition among enterprises and mining regions intensified since 1890 due to progressive business concentration and the cartelization of several markets within the region. Both the competition for secure and efficient production of raw materials and initial products as well as for reliable sales of semi-finished products at stable prices advanced the mutual integration of businesses.

## 1. Introduction

IN BIG BUSINESS, INVESTMENTS AND MERGERS of major corporations across national borders are no new phenomenon spawned by today's globalized world with its multinationals. Rather, even before the First World War, foreign investments and mergers with firms abroad were significant features of the economic development of Western Europe.<sup>1</sup> Border-crossing

1. In the last few years, the foreign investments of German enterprises have been examined in numerous studies, especially in the broader context of the emergence and development of multinational corporations. Cf., e.g.: A. Teichova, M. Lévy-Leboyer, H. Nussbaum,

enterprise in the coal-mining and the iron and steel sectors has been the object of a number of historical studies in the past.<sup>2</sup> German historians focused especially on the analysis of investments made by mining corporations from the Saar and the Ruhr in Lorraine after 1870.<sup>3</sup> French historiography, however, went further and examined in detail all investments of French and German mining corporations between 1870 and 1914 in the context of German-French political relations.<sup>4</sup> But both series of studies

(eds.), *Multinational Enterprise in Historical Perspective*. Cambridge u.a. 1986; G. Jones (ed.), *The Rise of Multinationals in Continental Europe*. Aldershot 1993; G. Jones (ed.), *Multinational and International Banking*. Aldershot 1992; G. Jones (ed.), *Coalitions and Collaborations in International Business*. London 1991; G. Jones, H. Schröter (ed.), *The Rise of Multinationals in Continental Europe*. Aldershot 1993; G. Jones (ed.), *Transnational Corporations: a historical Perspective*, London u. a. 1995; G. Jones, *The Evolution of International Business*. London, New York 1996; M. Wilkins (ed.), *The Growth of Multinationals*. London 1991; H. Pohl (ed.), *Der Einfluß ausländischer Unternehmen auf die deutsche Wirtschaft vom Spätmittelalter bis zur Gegenwart*. Stuttgart 1992.

2. Cf., e. g., the debate between Strikwerda and Schröder on the problem of the economic integration, of Europe before World War I, in: C. Strikwerda, 'The Troubled Origins of European Economic Integration', *American Historical Review*, 98 (1993), pp. 1106-1129; P. W. Schroeder, *Economic Integration and the European International System in the Era of World War I*, in: *American Historical Review* 98 1993, p. 1130-1137; C. Strikwerda, (Response to "Economic Integration and the European International System in the Era of World War I"): *American Historical Review* 98, 1993, pp. 138-1142.
3. S. van de Kerkhof, *Die Industrialisierung der lothringisch-luxemburgischen Minette-Region*. in: T. Pierenkemper (ed.), *Die Industrialisierung europäischer Montanregionen im 19. Jahrhundert*. (Stuttgart 2002), pp. 225-275; M. Nievelstein, *Der Zug nach der Minette. Deutsche Unternehmen in Lothringen 1871-1918*. (Bochum 1993); E. Kolb, *Ökonomische Interessen und politischer Entscheidungsprozeß. Zur Aktivität deutscher Wirtschaftskreise und zur Rolle wirtschaftlicher Erwägungen in der Frage von Annexion und Grenzziehung 1870/71*, *VSWG* 60 1973 pp. 343-385; R. Haus, *Lothringen und Salzgitter in der Eisen-erzpolitik der deutschen Schwerindustrie von 1871-1940*, (Salzgitter 1991); M. Schlenker, *Das Eisenhüttenwesen in Elsaß-Lothringen*, M. Schlenker (ed.), *Die wirtschaftliche Entwicklung in Elsaß-Lothringen 1971-1918*, (Frankfurt 1931), pp. 177-228.
4. R. Poidevin, *Les Relation Économiques et Financières entre la France et l'Allemagne de 1898 à 1914*, (Paris 1969); R. Poidevin, J. Bariety, *Frankreich und Deutschland. Die Geschichte ihrer Beziehungen 1815-1975*, (München 1982); R. Poidevin, *L'Influence des Placements et Investissements Français sur l'Économie Allemande (Fin du XIXe Siècle à 1914)*, H. Pohl (ed.), *Der Einfluß ausländischer Unternehmen auf die deutsche Wirtschaft vom Spätmittel-*

have neglected the German and French heavy industry investments in smaller neighbouring states, i.e. Belgium, Luxembourg and Holland.

In this article, I want to broaden the previous discussion by choosing a larger area of reference and a new level of enterprise, namely the regional level. For if we examine not only the foreign investments of the mining industry between France and Germany before 1914 and the co-operation between the Ruhr and the *minette* regions, but also the investments and mergers in all important West European mining regions of the time, the true extent of mutual integration becomes clear. Within the context of this larger area of reference, and using a regional approach, the following examines the causes, course and consequences of this transnational business integration in the two and a half decades before World War.

Apart from the investments made by corporations from the Ruhr and the Saar in the *minette* regions of Lorraine, Ruhr enterprises also placed investments in the mining regions of Belgium, Northern France and Germany. Enterprises from the Saar region, from Luxembourg and from the German as well as the French part of Lorraine again made investments in the Ruhr region or around Aachen, and also in the Belgian and Dutch coal-mining areas. Lastly, companies from the region around Aachen or from Belgium were also active in Lorraine and Northern France. This paper examines the integration and co-operation between the German centres of heavy industry in the Ruhr, Saar and Aachen regions, the French regions of Nord and Pas de Calais, the Belgian regions of Charleroi, Centre, Borinage (Mons), Liège and Campine, the Dutch coal-mining area of Southern Limburg, and finally the *minette* region of Lorraine and Luxembourg.<sup>5</sup> In this analysis, integration of

*l'alter bis zur Gegenwart*, (Stuttgart 1992), pp.145-152. Cf. also Fr. Roth, *Les Relations Franco-Belges de 1830 à 1834*; in: *Actes du Colloque de Metz 7*. Centre de Recherches Relations Internationales de l'Université de Metz 7. (Metz 1975), pp. 161-171.

5. The integration of enterprises from the German, French, Belgian, Dutch, and Luxembourgish coal, iron and steel regions (collieries, iron ore mines, blast furnace works, steelworks, rolling mills) were examined on the basis of data collected by the author with special regard to the regional co-operation and integration. The database is still

enterprises is understood both as direct investments made by companies from other regions and mergers, strategic shareholding, or joint ventures between companies in the coal and steel sector. In the conclusion, the question of the causes of increasing trans-regional delivery agreements, direct investments, mergers, and joint ventures will be addressed.

## 2. Trans-regional corporate investments until 1890

ALTHOUGH TRANS-REGIONAL CO-OPERATION and integration of the West European coal and steel regions increased considerably from about 1895 until the World War I, corporate relations and delivery agreements had been in existence for a long time. As early as in the 1840s, French and Belgian private capital poured into the developing coal and iron industries in the major regions of the Ruhr, the Saar, and around Aachen, for example, into the construction of the Phönix Iron Corporation, the Burbach ironworks, and several coal-mining companies in the Ruhr region during the 1840s and 1850s.<sup>6</sup> A common feature of these early foreign capital investments was that only in very few cases were the companies directly controlled by a firm in the home countries of the investors or connected via shares to such a firm.<sup>7</sup> This substantial transfer of capital, technology, and modern business organization made an important contri-

provisional and will be completed. In this article, I will not attempt to describe the totality of corporate integration in the regions examined. This will be the task of a later study. Rather, I will point out the fundamental features of the development by citing exemplary cases. For the sake of brevity, this article does not deal with the numerous relations between West European enterprises and the coal, iron, and steel industry of Britain, Scandinavia, and Southern, Central, and East Europe.

6. On Burbach cf. R. Banken, *Die Industrialisierung der Saarregion 1815-1914*. Bd. 2. *Take-Off-Phase und Hochindustrialisierung 1850-1914*, (Stuttgart 2002), pp. 302-337; on Phönix cf.: Hans Seeling, *Télémaque Fortuné Michiels, der Phoenix und Charles Dételieux*, (Köln 1996).
7. The Burbach ironworks was one of the few examples. Since 1872, it owned a blast furnace works in the Luxembourgish *minette* region together with Metz & Co. Cf. Banken, *Take-Off-Phase und Hochindustrialisierung*, pp. 302-337.

bution to the growth of the German coal and iron regions from 1840 onwards.<sup>8</sup> However, because some of this capital was withdrawn, in the long run only a few of these enterprises remained in foreign possession. German capital took over numerous collieries from Belgian and French companies in the Ruhr, such as the Société Anonyme Belge-Rhénane de la Ruhr in 1873, or the Société Anonyme Belge des Charbonnages de Herne-Bochum 1863.<sup>9</sup> Only a few of these companies remained totally in the possession of foreign shareholders until World War I.<sup>10</sup>

Before 1890, capital flowed in the other direction as well, from Germany into other European countries. As early as in the late 1840s, German iron manufacturers constructed ironworks in the *minette* region of Lorraine, although on a clearly smaller scale than Belgian or French companies did. These were the ironworks of the brothers Puricelli at Novéant, of Karcher & Westermann at Ars-sur-Moselle, or of Röchling & Haldy at Pont-à-Mousson.<sup>11</sup> German investments before 1870 remained low, however, and connections with German facilities were not established either.

On the whole, the investments made by coal and iron enterprises in foreign mining regions before 1890 were of small significance compared

8. R. Fremdling, *Technologischer Wandel und internationaler Handel im 18. und 19. Jahrhundert. Die Eisenindustrie in Großbritannien, Belgien, Frankreich und Deutschland*, (Berlin 1986), pp. 372-377; Seeling, p. 146; M. A. V. Devos, *Kapitalverflechtung in der Montanindustrie zwischen dem westlichen Deutschland und Belgien von etwa 1830 bis 1914*, (Bonn 1986), pp. 310-320. Alfred Reckendrees from the Copenhagen Business School is working on a study on the emergence of the factory system and economic learning processes that includes an evaluation of the transfer of Belgian capital and technology into the Aachen region before 1850.
9. Devos, pp. 107-131; Seeling, pp. 85-88 and 109; W. Weber, "Entfaltung der Industrielandschaft", in: W. Köllmann u. a. (Hg.), *Das Ruhrgebiet im Industriezeitalter. Bd. 1. Geschichte und Entwicklung*, (Düsseldorf 1990), p. 214; G. Gebhardt, *Ruhrbergbau. Essen 1957*, p. 118.
10. For example, the Burbach ironworks in the Saar region. Cf. Banken, *Take-Off-Phase und Hochindustrialisierung*, pp. 302-337; Devos, pp. 207-219.
11. Cf. Fr. Roth, "Les Prussiens à Pont-a-Mousson. Histoire d'une Interpénétration d'Intérêts 1856-1914", in: *Annales de l'Est*, 1990, pp. 35-62; Banken, *Take-Off-Phase und Hochindustrialisierung*, pp. 302-337.

to later ones. In all countries, only very few companies owned facilities in more than one region. And even where foreign investments were made, they were mostly limited to the purchase and operation of ore mines, as in the case of the Gutehoffnung ironworks, the Rheinische Stahlwerke steelworks, and the Phönix AG for mining and iron-smelting in Lorraine.<sup>12</sup> Among the few corporations that had established trans-regional connections before 1890, the best-known and most significant were the Saar ironworks which built their blast furnaces in the *minette* region from 1870 onwards<sup>13</sup>, or the de Wendel family, which operated, as well as their parent facilities in Lorraine, a coke plant, a colliery and an ironworks in the Saar region.<sup>14</sup> Further examples were the Phönix AG with ironworks in the Ruhr region and around Aachen<sup>15</sup>, and a few Belgian iron manufacturers, who invested in the *minette* region of Lorraine, for example, the Société des Aciéries d'Angleur at Deutsch-Oth in 1881 and the La Providence company in Rehon in 1867.<sup>16</sup>

12. Cf. D. Döring, *Die deutschen schwerindustriellen Interessen in Lothringen bis 1914*. (Diss. Frankfurt am Main 1971), pp. 100-101.

13. The Burbach ironworks first erected its blast furnace works at Esch in 1871, in co-operation with the Luxembourgish firm Netz. In 1881, Dillingen followed with the branch facility at Redingen. The blast furnace works at Ückingen owned by the Neunkirchener ironworks started production in 1890, and the *Carlshütte* ironworks of the Völklinger ironworks in 1898. Cf. Banken, *Take-Off-Phase und Hochindustrialisierung*, pp. 302-337 and 337-446.

14. The economic engagement of the de Wendel family at the Saar began with the erection of the Stiring blast furnace and puddling works between 1846 and 1848, which was followed by the operation of a coke at Hirschbach-Dudweiler in 1852 and of a colliery at Kleinrosseln/Petite-Rosselle in 1856. R. Banken, *Die Industrialisierung der Saarregion. Die Frühindustrialisierung*, (Stuttgart 2000), pp. 263-264; Banken *Take-Off-Phase und Hochindustrialisierung*, pp. 302-337.

15. O. V., *Phönix Aktien-Gesellschaft für Bergbau und Hüttenbetrieb zu Duisburg-Ruhrort*. (Duisburg-Ruhrort 1906); Nievelstein, pp. 166-172 and 174-180.

16. Nievelstein, pp. 204-207; Fr. Roth, "La Participation des Interets Belges, à l'industrialisation de la Lorraine (1860-1914)", in: Centre de Recherches Relations Internationales de l'Université de Metz (Hg.), *Les Relations franco-belges de 1830 à 1934*. (Metz 1975), p. 161-171.

### 3. The delivery relations of the West European mining and iron regions, 1850-1890

APART FROM THE DIRECT INVESTMENTS, before 1850 there were also deliveries between the different coal and iron regions. Since the 1840s, the Saar ironworks processed pig iron from Luxembourg<sup>17</sup> as well as *minette* iron ore from Lorraine<sup>18</sup>, and also iron ore and pig iron from the mid-Rhine region and from the Eifel.<sup>19</sup> The ironworks belonging to the de Wendel family in Lorraine and other companies stoked their puddling furnaces and their coke furnaces at Hayange und Moyeuvre with coal and coke from the Saar region even before 1820.<sup>20</sup> Delivery agreements existed between other regions as well. In the Ruhr region, before 1850 iron ore from the Lahn-Dill area and pig iron from the Siegerland were processed<sup>21</sup>, and Belgian pig iron was used both in the Ruhr and in the region of Aachen.<sup>22</sup> The coming of the railway led to a considerable intensification of delivery connections between the coal and iron regions between 1850 and 1890. After 1870, the iron works in the *minette* region used mainly coke from the Ruhr in their blast furnaces, and less and less coke from the Saar. In the late nineteenth century, coke from the Ruhr was also used, at least in part, for smelting iron in the Saar, in Belgium, and in Northern France. The *minette* iron ore in turn was the basis for the production of pig iron by the iron

17. Cf. Banken, *Frühindustrialisierung*, pp. 343-346.

18. Cf. Döring, pp. 330-334; Banken *Frühindustrialisierung*, pp. 343-348.

19. Pig iron was traded between the regions long before 1850. The iron industry in the Saar region bought pig iron from the Hunsrück mountains, the Mosel valley, the Rhine valley, and from Luxembourg. Banken *Frühindustrialisierung*, pp. 343-348.

20. Cf. Banken, *Frühindustrialisierung*, p. 191-195.

21. For example, the *Gutehoffnung* ironworks at Oberhausen as early as 1833 bought ore from Hessen-Nassau and since 1840 owned iron-ore mines in the Lahn-Dill area and the Wied valley. P. Wiel, *Wirtschaftsgeschichte des Ruhrgebietes*, (Tatsachen und Zahlen. Essen 1970), p. 194.

22. Cf. Fremdling *Technologischer Wandel* pp. 117-176, 215-234 and 307-352; H. Schainberg, *Die belgische Beeinflussung der Frühindustrialisierung im Aachener Raum, ca. 1820-1860. Diss. Ms.* (Trier; 1997).

industry in the Saar and in Belgium. In part, it was also used in the blast furnaces of the Ruhr and in Northern France. All these regions received not only iron ore, but also considerable amounts of pig iron from the *minette* region. Apart from deliveries of coal and coke from the Ruhr and of ore and pig iron from the *minette*, these being the two most important raw materials and semi-finished products, the delivery of high-quality ore from smaller mining areas like the Siegerland and the Lahn-Dill region into the Ruhr<sup>23</sup>, deliveries of coke and pig iron from Britain<sup>24</sup>, and the far more substantial flows of iron ore from Sweden<sup>25</sup> and Spain<sup>26</sup> into numerous European mining regions were until 1914 a continuous phenomenon that was determined by economic development and technical and tariff factors. On the whole, these deliveries intensified from 1870 onwards, and after 1890 led more and more frequently to trans-regional corporate relations and co-operation within the West European mining and steel industry.

23. Wiel, p. 194; R. Fremdling, "Standorte und Entwicklung der Eisenindustrie". in H.-J. Teuteberg (Hg.), *Westfalens Wirtschaft am Beginn des "Maschinenzeitalters"*, (Dortmund 1988), S.297-316, here 305; W. Feldenkirchen, *Die Eisen- und Stahlindustrie des Ruhrgebietes 1879-1914*, (Stuttgart 1982), p. 58-64.
24. Apart from shipments of British pig iron to Germany from the 1830s to the 1870s – afterwards, most imports of pig iron went only to smaller foundries – the Rombach ironworks AG founded a coke at the Belgian North sea coast in Zeebrügge and operated it with British coal. Furthermore, the Eastern French ironworks, Société des Aciéries de Longwy, Marc Raty & Cie. (Saulnes), de Saintignon & Cie. (Longwy), and Senelle-Maubeuge decided to erect a coke at the mouth of the river Schelde, that was to secure the supply for the plants in the French part of the *minette* region of British and German coal. On the imports of iron from Britain cf. Fremdling, *Technologischer Wandel*, pp. 215-234 and 307-352; and Feldenkirchen, pp. 58-64. On Rombach and the *minette* ironworks: O. V., "Rombacher Hüttenwerke", in: *Stahl und Eisen* 14 (1911), pp. 2080-2081; M. Ungeheuer *Bedeutung der französischen Kohlenindustrie und die Kohlenfrage in Frankreich: Technik und Wirtschaft* 8, 1915, 8. H., S.305-321 und 352-369, hier S.367.
25. Feldenkirchen, pp. 58-64; Nievelstein, pp. 109-111. M. Ungeheuer *Bedeutung der französischen Kohlenindustrie*, S.367-368.
26. For an example of the import of Spanish ore cf.: J. Loscertales, *Deutsche Investitionen in Spanien: 1870 – 1920*, (Stuttgart 2002); Feldenkirchen, pp. 58-64.

#### 4. Trans-regional direct investments in West European mining and iron regions, 1890-1914

Until 1895, not only national, but also regional border-crossing investments in coal mining and the iron industry were limited. From 1890 onwards, a wave of foreign investments and of mergers spanning countries and regions was seen that lasted until 1914. These mines and works were, for the most part, constructed and operated by firms in the iron and steel industry. The purchasing of iron mines and iron concessions in the *minette* region of Lorraine and Luxembourg by the corporations from the Ruhr and the Saar are recorded. Only iron companies from the Saar and from Belgium also built pig-iron works in this region before 1890. Starting in 1890, and increasingly after 1900, there was a rush for mining concessions in the *minette* region (which until 1914 was divided among four states<sup>27</sup>). However, these more often resulted in the building or take-over of blast-furnace works or the construction of steel and rolling mills. Not only the Ruhr corporations, which are the best-known examples, participated in these transactions, but also iron companies from the Aachen region<sup>28</sup>, from the Belgian mining regions<sup>29</sup>, and

27. Before the First World War, the *minette* region stretched across four countries: the Southern part of Luxembourg and a small South-Eastern corner of the Belgian province of Luxembourg, and the Eastern part of German Lorraine. In the French part, the *minette* region was divided into the Longwy and Briey basin and the Nancy basin. In spite of the national borders, the *minette* region is regarded as a coherent economic region. On the concept of regional economic history cf. Banken, *Frühindustrialisierung*, pp. 14-43; on the Luxembourgish and Lotharingian parts of the *minette* region: van de Kerkhof, pp. 225-275.

28. For example, Aachener-Hütten-Aktienverein merged with S. A. des Hauts Fourneaux, Mines et Usines d'Audun-le-Tiche in 1904. Wiel, p. 250 Nievelstein, pp. 180-184.

29. For example, the Belgian corporation *Ougrée-Marihaye* owned a blast furnace works in the Luxembourgish town of Rodange, and another one in the Lotharingian Briey-Longwy basin (La Chiers). Landesstelle Belgien für Rohstoffhebung (ed.), *Die Hauptindustrien Belgiens. Teil I. Bergbau und Hüttenwesen*. (München 1918), p. 222; Nievelstein, pp. 204-207; Roth, *La Participation des Interets Belges*, pp. 162-171; Vorstand, *der Deutschen Metallarbeiter-Verbands* (ed.), *Die Schwerindustrie im deutschen Zollgebiet, ihre Entwicklung und ihre Arbeiter*, (Stuttgart 1912), p. 249.

companies from Northern and Central France.<sup>30</sup> These transactions took various forms: apart from a loose trans-regional co-operation<sup>31</sup>, the construction of completely new blast furnaces and steelworks<sup>32</sup>, or the

30. Schneider & Cie., for example, together with de Wendel founded a Gilchrist-Thomas steelworks at Le Creuzot. The Cie. des Forges de Châtillon, Commentry et Neuves-Maisons, which owned works at at Montlucon, Commentry, and Sainte-Colombe-sur-Seine, furthermore erected an integrated steelworks at Neuves-Maisons (Département Meurthe-et-Moselle) in 1903. The company La Marine from St. Etienne constructed an integrated steelworks at Homécourt in 1901. Moreover, many iron-ore mines and ore concessions were possessed by iron-making enterprises from within France. For example, the shares of Mines de Joudreville from Paris were owned by the Société des Hauts-Fourneaux de la Chiers and by Société de Commentry Fourchambault-Decazeville. Cf. R. Sédillot, *La Maison de Wendel de Mil Sept Cent Quatre à nos Jours*, (Paris 1958), S 237-241; C. Beaud, "Schneider, de Wendel et les Brevets Thomas. Le Tournant Technique de la Sidérurgie Française (1879-1880)", *Cahiers d'Histoire XX* 1975, pp. 363-378; M. Ungeheuer, "Die Eisenindustrie des Centre", der Hauptsitz der französischen Kriegsindustrie, in: *Technik und Wirtschaft* 10. Jg. 1917, S.401-412, hier 404 und 406; O. V. *Die Industrie im besetzten Frankreich*, (München 1916), p. 28; R. Bühler, *Die Roheisenkartelle in Frankreich. Ihre Entstehung, Entwicklung und Bedeutung von 1876 bis 1934*, (Zürich 1934), pp. 6-10.
31. For example, Gebr. Röchling from the Saar granted shares in its projected exploitation of the coal concession "Carl-Alexander" at Baesweiler near Aachen to the Aciéries de Longwy from Mont St. Martin in Lorraine, while Aciéries de Longwy in turn sold to Gebr. Röchling 50 per cent of the shares in the Société Civile des Mines de Valleroy. Cf. R. Nutzinger, H. Boehmer, O. Johannsen, *50 Jahre Röchling Völklingen. Die Entwicklungen eines rheinischen Industrie-Unternehmens*, (Saarbrücken, Völklingen 1931), pp. 48, 76 and 316-321; *Banken Take-Off-Phase und Hochindustrialisierung*, pp. 302-337 and 337-446; Poidevin *Les Relations Économiques*, pp. 537-538; M. Ungeheuer, *Bedeutung der französischen Kohlenindustrie*, S.367.
32. In 1911, August Thyssen founded the firm Stahlwerke AG at Hagendingen in Lorraine, which operated the newly constructed blast furnace and steelworks there. Nievelstein, p. 149-161 und 215-251. According to Manfred Rasch, before the First World War August Thyssen in particular pursued a policy of international vertical integration and the internationalization of his corporation's trade activities. Cf. M. Rasch, *Untersuchungen des Thyssen-Konzerns im zarischen Rußland*. in: D. Dahlmann, C. Scheide (Hg.), "... Das einzige Land in Europa, das eine große Zukunft vor sich hat." *Deutsche Unternehmen und Unternehmer im Russischen Reich im 19. und frühen 20. Jahrhundert*. (Essen 1998), pp. 225-271.

expansion of blast furnaces through steel works<sup>33</sup>, mergers<sup>34</sup> or shared interest agreements<sup>35</sup> were the most significant.

In the Ruhr region, mining and steel corporations from other regions mostly purchased collieries. For example, in 1914 the Gebr. Stumm GmbH from Neunkirchen, that owned the ironworks at Dillingen, Rudolf Böcking GmbH, the owner of the Halberg ironworks<sup>36</sup>, and Les

33. The transformation of blast furnace works into integrated steelworks was initiated by Gelsenkirchener Bergwerks AG with its blast furnace works at Esch in Luxembourg. The situation was similar with the Rombach ironworks owned by Carl Spaeter, to which a Gilchrist-Thomas steelworks was added in 1900. Nievelstein, p. 197-200. Furthermore, during the First World War the Röchling family as well planned the addition of a steelworks and rolling mill to their blast furnace works, the "Carlshütte". G. Seibold, *Röchling. Kontinuität im Wandel*, (Stuttgart 2001), p. 172.
34. Apart from the merger of Luxemburger Bergwerksgesellschaft and Saarbrücker Eisenhüttengesellschaft with the family-owned enterprise Metz & Co from Luxembourg, and with Eisenhütten-Aktien-Verein Düdelingen that resulted in the establishment of *Arbed* in 1911, and the merger between St. Ingberter Eisenwerk owned by the Krämer brothers and Rümeling und Öttinger Hochofengesellschaft from the minette region in 1905, further examples are the merger Hütten-Aktien-Verein Rothe Erde from Aachen with the Luxemburger Hochofen-Gesellschaft Esch in 1890 and the purchase of S. A. des Hauts Fourneaux, Mines et Usines d'Audun-le-Tiche in 1901. The latter was taken over in 1905 by the Ruhr corporation Gelsenkirchener Bergwerk AG. Cf. Banken *Take-Off-Phase und Hochindustrialisierung*, pp. 302-337; Nievelstein, pp. 180-184; Wiel, p. 250.
35. In 1911, Rümeling und St. Ingberter Hochöfen und Stahlwerk AG concluded an interest agreement with Deutsch-Luxemburgische Bergwerks- und Hütten AG: the latter firm was to take on the complete management of the first enterprise for the payment of a secure dividend. In the same year, and on the basis of a similar agreement, *Arbed* took on the management of Eschweiler Bergwerks-Verein at Aachen. Banken, *Take-Off-Phase und Hochindustrialisierung*, pp. 302-337; G. Feldmann, *Hugo Stinnes. Biographie eines Industriellen 1870-1924*, (München 1998), pp. 171-175, 213-218, 229 and 326; Nievelstein, pp. 200-203.
36. In 1901, Gebr. Stumm together with Halberger Hütte purchased the Ruhr colliery "Minister Achenbach" near Dortmund. Apart from that, the two firms owned in combination with Dillinger Hüttenwerke further coal fields near Lünen since 1900, where mining started later. Banken, *Take-Off-Phase und Hochindustrialisierung*, pp. 302-337.

Petits de Francois de Wendel & Cie.<sup>37</sup> all owned working collieries in the Ruhr.<sup>38</sup> Furthermore, after 1899 they and the Aachener Hütten-Aktien-Verein, Röchlingsche Eisen- und Stahlwerke GmbH, S. A. des Aciéries de Micheville, and Société Anonyme des Hauts-Fourneaux et Fonderies de Pont-à-Mousson companies had purchased large coalfields that had not yet been opened, for instance, on the left bank of the lower Rhine near the town of Moers.<sup>39</sup> The Moers coalfields had not then been developed, but mining operations started in other parts before World War I. However, hardly any iron and coal company from outside the Ruhr invested in the region's iron and steel industry.

After 1900, the Saar mining region attracted only a few investors from other regions. This was mainly due to the extended state ownership of the coal mines. In the Lorraine part of the region, the two Ruhr industrialists Thyssen and Stinnes took over the mining company Saar- und Mosel-Bergbau AG in 1900. The company had been operated by French and Belgian capital owners and was expanded considerably by Thyssen and Stinnes until 1910.<sup>40</sup> The merger of Luxemburger Bergwerks- und Saarbrücker

37. The family-owned corporation de Wendel started mining operations at its colliery "Heinrich Robert" near Hamm in Westphalia in 1902, and further owned in combination with several other French iron-making firms (*Acières de Micheville, Pont-à-Mousson*) a large share of the coal concession "Friedrich Heinrich" near Kamp-Linfort, which was opened since 1907. Sédillot, p. 250; Devos, p. 138; Wiel, p. 175; Gebhardt, pp. 188-189 and 327-329; Poidevin *Les Relations Économiques*, pp. 230-232 and 537.
38. Examples include: Fentscher Hütten AG at Aumetz-Friede with its purchase of the collieries "Crone" and "Glückaufsegen" near Hörde, or Lothringer Hütten Verein at Aumetz-Friede, with its addition of the colliery "General" at Bochum in 1900 and the colliery "Victor" at Castrup-Rauxel in 1910. Cf. *Vorstand des deutschen Metallarbeiter-Verbandes Die Schwereisenindustrie*, pp. 244-245; Weil, pp. 161, 171 and 176; Gebhardt, pp. 367-373.
39. On the acquisition of concessions by the enterprises from the Saar region cf. Banken, *Take-Off-Phase und Hochindustrialisierung*, pp. 302-337. For Aachener Hütten-Aktien-Verein cf. Gebhardt, p. 215. Several examples for French firms can be found in Poidevin, *Les Relations Économique*, pp. 229 and Gebhardt, pp. 188-193.
40. On Saar and Mosel Bergbau AG cf.: Feldmann, pp. 53f, 174f, 204-208, 213f, 280f, 311-315, 329-334 and 555f; Banken, *Take-Off-Phase und Hochindustrialisierung*, pp. 35-64.

Eisenhütten-AG with Le Gallais-Metz & Co. and S. A. des Hauts Fourneaux et Forges de Dudelange, becoming the Société Anonyme des Aciéries Réunies de Burbach-Eich-Dudelange, known as Arbed, confirmed and institutionalized the close co-operation of these firms from different regions.<sup>41</sup>

In the old Belgian mining regions (Bourinage, Charleroi, Centre, Liège), investments from corporations from abroad were rare. We know, however, about Thyssen's gradual take-over of the Belgian iron company Société Métallurgique de Sambre et Moselle, S. A. which began in 1903<sup>42</sup>, and the merger of S. A. des Hauts Fourneaux d'Athus in the Belgian *minette* region with the Société de Grivegnée from Liège<sup>43</sup>. Take-overs of Belgian companies by corporations from different Belgian iron and coal regions were more frequent. In particular, the major steel corporations, such as S. A. John Cockerill at Liège or the Société Anonyme d'Ougrée-Marihay, acquired coal-mining and iron companies.<sup>44</sup>

Belgian firms invested in the mining region of Northern France, in the Nord and Pas de Calais departments<sup>45</sup>, as did companies from the French

41. For Arbed cf.: G. Trausch, *L'Arbed dans la Société Luxembourgeoise*, (Luxemburg 2000). On the co-operation of the three original firms: Banken *Take-Off-Phase und Hochindustrialisierung*, pp. 302-337.

42. In the *minette* region, Sambre et Moselle owned, apart from ore mines, a blast furnace works at Maizières near Metz. Outside the *minette* region, it operated an integrated blast furnace and steel works with a coke at Montigny-sur-Sambre in Belgium, and a rolling mill at Chatelineau. Cf. Nievelstein, pp. 204-207; *Vorstand des Deutschen Metalarbeiter-Verbandes Die Schwereisenindustrie*, pp. 247-248.

43. Landesstelle *Belgien Hauptindustrien*, pp. 220-221.

44. For example, shortly before the First World War, Ougrée-Marihay purchased the new coal pits at Bray near Mons. Cockerill invested mainly in the newfound coal fields of the Campine district and there was the chief shareholder in the Société an. pour l'Exploitation de la Concession charbonnière des Liégeois en Campine. Landesstelle, *Belgien Hauptindustrien*, pp. 194, 221-222 and 227.

45. For example, the Belgian enterprise S. A. des Laminiers, Hauts-Fourneaux, Forges, Fonderies et Usines de la Providence from Marchienne-au-Pont operated the steel-works and rolling mill at Hautmont Northern France, apart from its Belgian and Lotharingian ironworks at Marchienne-au-Pont and Rehon near Longwy. O. V., *Die Industrie im besetzten Frankreich*, (München 1916), pp. 1-23. Landesstelle, *Belgien Hauptindustrien*, p. 223.

part of the *minette* region of Lorraine and from central France.<sup>46</sup> After 1900, the Eastern France iron industry's demand for coal in the Longwy and Briey regions led to frequent trial boring and drilling and the discovery of six new coalfields. These were exploited by two French companies owned mainly by several iron companies from Eastern France, such as Pont-à-Mousson or the Société des Aciéries de Longwy.<sup>47</sup>

In this integration process, the resources of the smaller mining regions became attractive for the trans-regional companies, too. It can be clearly recognized that the region around Aachen, whose growth, after its rapid development between 1830 and 1855, had considerably slowed down in comparison to the other West German mining regions, became the target of outside investors after 1900. In 1913, for example, Arbed took

46. The demand for coal by the East French iron industry around Longwy and Briey before the First World War led to numerous trial boring and the discovery of six new coalfields in the coal basin of Northern France. Several companies were founded for the purpose of exploiting these coal deposits. The Compagnie des Mines de Gouvy-Servins was founded by the Société de Recherches de Fresnicourt, which in turn was owned mainly by a number of ironworks from the East of France, such as Pont-à-Mousson or Aciéries de Longwy. Another company was the Société de Mines de Vimy et Fresnoy, which had been established by Aciéries de France and the ironworks of Chatillon-Commentry. In 1911, the Compagnie des Mines de Fresnicourt was established in order to exploit the mining concessions at Fresnicourt and Ablain-St.-Nazaire. The shares of this company were held by Aciéries de Longwy, Compagnie des Forges et Aciéries de la Marine et d'Homécourt, Senelle-Maubeuge, Gorcey, de Wendel and de Saintignou. Furthermore, the Compagnie de St.-Nazaire was founded by the iron-making firms Aciéries du Nord et de l'Est, Denain-et-Anzin, Micheville, and Pont-à-Mousson. Furthermore, the Northern French coal mining company Société des Mines de Lens, in combination with the steel producer Commentry-Fourchambault from Central France, had constructed a modern integrated steelworks, the Hauts-Fourneaux, Forges et Aciéries de Pont-à-Vendin in Northern France. Cf.: O. V., *Industrie im besetzten Frankreich*, pp. 1-23; M. Ungeheuer, *Die Eisenindustrie des Centre, der Hauptsitz der französischen Kriegsindustrie*, in: *Technik und Wirtschaft* 10. Jg. 1917, S.401-412, here 404 and 406; M. Ungeheuer, *Die wirtschaftliche Bedeutung der französischen Kohlenindustrie und die Kohlenfrage in Frankreich*. in: *Technik und Wirtschaft* 8 Jg. 1915, S.362-363.

47. O. V. *Industrie im besetzten Frankreich*, pp. 1-23.

over the management of Eschweiler Bergwerksverein through an interest agreement.<sup>48</sup>

Arbed not only controlled its iron production capacities, but could also make use of its coal mining capacities in the Aachen region for its own interests, thus becoming less dependent on the expensive Ruhr and Saar coke. The de Wendel corporation<sup>49</sup>, the Röchling family in combination with the French company Acéries de Longwy<sup>50</sup>, and the French iron companies Michevielle, Pont-à-Mousson, and the Compagnie des Forges et Acéries de la Marine et d'Homécourt<sup>51</sup> invested in new collieries in the Aachen region. Lastly, Aachener Hüttenverein merged with Gelsenkirchener Bergwerks AG in 1905.<sup>52</sup>

In a similar way as in the Aachen region, the major corporations took over furnaces, ironworks and collieries in other smaller regions, for example, in the Siegerland<sup>53</sup>, in the Düsseldorf area<sup>54</sup>, in the Eifel moun-

48. In 1911, Arbed concluded an agreement of interest with Eschweiler Bergwerks-Verein that submitted the complete management of the Eschweiler plants to Arbed. Thus, apart from its own plants, Arbed controlled not only ironworks at Eschweiler and Cologne-Ehrenfeld, but also several collieries near Aachen. Cf. Arbed (Hg.), *Acéries Réunies de Burbach-Eich-Dudelange. Un Demi Siècle d'Histoire Industrielle*, (Luxembourg 1964), p. 48; O. Stegmann, *Der Eschweiler Bergwerksverein in seiner neuesten Entwicklung*, (Aachen 1927), pp. 7-10 and 17-21; M. Ungeheuer, *Bedeutung der französischen Kohlenindustrie*, S.367.

49. Banken, *Take-Off-Phase und Hochindustrialisierung*, pp. 302-337.

50. Banken, *Take-Off-Phase und Hochindustrialisierung*, pp. 302-337.

51. Together, the three French enterprises purchased a coal field from Eschweiler Bergwerksverein in 1910, and one year later founded the colliery Gewerkschaft Carolus Magnus near Aachen. Poidevin, *Les Relations Économiques*, pp. 538-540.

52. Wiel, p. 250; Devos, p. 122.

53. For example, Phönix purchased the ore mines at Bautenberg and Heinrichsglück in the Siegerland region in 1910. R. Utsch, *Die Entwicklung und volkswirtschaftliche Bedeutung des Erzbergbaues und der Eisenindustrie im Siegerland*, (Nachdruck Görlitz 1913); Kreuztal 1984, p. 112.

54. The Thyssen corporation, e. g., in 1906 purchased the steelworks Oberbilker Stahlwerk AG near Düsseldorf, and Phönix Aktiengesellschaft für Bergbau und Hüttenbetrieb acquired the rolling mill Düsseldorf Röhren- und Eisenwalzwerke vorm. Poensgen AG.

tains<sup>55</sup>, or in the Lahn-Dill-area.<sup>56</sup> Furthermore, several major mining and steel corporations invested in the exploitation of newfound deposits of raw materials, such as the de Wendels' collieries in Dutch Limburg<sup>57</sup>, or the Gewerkschaft Carolus Magnus colliery, that was built near Aachen by French iron companies in 1911.<sup>58</sup> The new-found coal deposits in the Belgian district of Campine, too, were developed by the investments made by external corporations, including Micheville, Homécourt, and Pont-à-Mousson, that owned shares in Belgian collieries.<sup>59</sup> The same was true for the aforementioned coalfields on the left bank of the Lower Rhine near Moers, which were bought by Belgian

And Lothringer Hütten-Verein Aumetz-Friede entered into a joint venture with iron manufacturer Düsseidortfer Eisen- und Draht-Industrie AG. Cf. A. Reckendrees, *Das "Stahltrust-Projekt". Die Gründung der Vereinigte Stahlwerke A. G. und ihre Unternehmensentwicklung 1926-1933/34.* (München 2000), p. 81; Feldenkirchen, pp. 88 and 146.

55. Shortly before the First World War, Belgian steel corporation Ougree-Marihaye acquired shares in Gewerkschaft Quint, which operated an ironworks at the Moselle. Cf. *Landesstelle Belgien Hauptindustrien*, p. 222.
56. Although many iron and steel corporations from the Ruhr acquired iron ore mines in the Lahn-Dill area long before 1890, competition for a secure supply of iron ore led to purchases of ore mines in this region after 1890, too. Thyssen's iron-making firm Aktiengesellschaft für Hüttenbetrieb at Duisburg, for example, purchased mines in Nassau und Wied from Konkordiahütte vorm. Gebr. Lossen AG at Bendorf in 1907. Krupp, in turn, in 1906/07 bought Fürstlich-Solms-Braunfelsche iron ore mines, the mine "Einigkeit" and some more mines in the territories of Hesse and Waldeck. Feldenkirchen, p. 335; Vorstand des deutschen Metallarbeiter-Verbandes *Die Schwereisenindustrie*, pp. 194-195.
57. The first shaft of the mine "Oranje Nassau" was sunk in 1893, and since 1908 was in the possession of the de Wendel corporation. Cf. W. Disko, *Die Entwicklung des holländischen Steinkohlenbergbaus in der Nachkriegszeit und ihre Auswirkungen auf den rheinisch-westfälischen Steinkohlenbergbau*, (Diss. Emsdetten 1937), pp. 6-7 and 10-13; Sédillot, pp. 250-251.
58. Siehe Anmerkung p. 51.
59. E.g., the French iron-making firms Micheville, Homécourt and Pont-à-Mousson jointly owned the two collieries at Beringen and Eisden, whereas the Schneider-Le Creuzot corporation held a share of 40% in the mining company Winterslag. Arbed was the leading shareholder in the coal mining company Zolder. *Landesstelle Belgien Hauptindustrien*, pp. 44-54.

and French investors in 1906<sup>60</sup>, and for iron ore mines in Normandy – that were bought for a planned blast furnace and steel plant for Thyssen.<sup>61</sup>

On the whole, the extent of investments in the individual regions after 1890 depended on the availability and the quality of raw materials, and on the property rights determined by the proprietary order and market structures of the targeted region. The Saar region is a good example for the latter aspect: there, investments in or takeovers of collieries were possible only to a limited extent because the existing owners, the Prussian state being the most prominent among them, owned more than 90 per cent of the exploitable coal fields in the German part of the region and were not willing to sell them. External companies, therefore, had difficulty in making investments in Prussian or Bavarian state-mining in the Saar region. In those parts of the *minette* region that lay in Belgium, Germany, or Luxembourg, the mining concessions for iron ore had been almost all granted to iron manufacturers by 1890, and only a few concessions were exchanged or bought after that date. It was different in the French part of the *minette* region, where numerous and large mining concessions were granted after 1890. New collieries could be built or bought as well in the, until then, undeveloped northern part of the Ruhr region, that is the area around the river Lippe and on the left bank of the Rhine near Moers, in parts of the Aachen region, and also on the newfound coal fields in the Dutch region of Limburg and the Belgian district of Campine. Otherwise, company takeovers or mergers with mining and steel companies were important means for expansion into different regions, as can be illustrated by Thyssen's move into Sambre et Moselle.<sup>62</sup> If the building of new facilities or the acquisition of compa-

60. Poidevin *Les Relations Économiques*, p. 229 and Gebhardt, pp. 188-193.

61. On the Société Anonyme des Hauts-Fourneaux et Aciéries de Caen, founded in 1910, cf.: O.V., *Die Werke von Caen*; in: *Stahl und Eisen*, (1913) pp. 783-787; Poidevin *Les Relations Économiques*, pp. 524-526; K. Wilsberg, "Terrible ami – aimable ennemi": *Kooperation und Konflikt in den deutsch-französischen Beziehungen 1911-1914*. (Bonn 1998), pp. 230-236.

62. Nievelstein, pp. 160-161.

nies and plants were not possible, then the only ways left were a takeover or co-operation, e. g. in the form of joint ventures. What is more, the size of the regions, their growth, and the financial capacities of the resident companies determined the direction the investments or takeovers would take. Since the corporations from the Ruhr were significantly larger than their competitors in other regions, and the Ruhr region itself stood out from all other continental iron and coal regions in terms of sheer size and financial capacity, Ruhr companies made more frequent and more massive investments in other regions than did their competitors. On the other hand, the most frequent and most substantial external investments went into Lorraine and Luxembourg's share of the *minette* region because this region offered the greatest growth and the best prospects before 1914 and, as stated above, its proprietary structures were comparably favourable for new investments and for company takeovers.

## **5. Causes of the growing integration of West European iron and coal regions**

THE ECONOMIC CAUSES FOR THE INCREASE in trans-regional investments and corporate mergers after 1900 were manifold. The most important reason for enterprises to engage in activities outside their home regions was their attempt to secure their own supply of low-priced raw materials and semi-finished products. The growing demand for coking coal, coke, iron ore, pig iron, and semi-finished steel products in the course of the dynamic, prolonged boom from 1895 onwards encountered an increasingly consolidated and cartelized market, with high prices in all countries for the supply of raw materials and semi-finished products. Through the creation of cartels, blast furnace and steel works were able to obtain their fuel for a markedly cheaper price from annexed collieries.<sup>63</sup> The purchase of iron works provided major mining corporations with a

63. Reckendrees, pp. 59-85

secure customer base for better prices, too.<sup>64</sup> For ironworks, the acquisition of their own source of pig iron ensured a constant supply at a low and predictable price. The ironworks at St. Ingbert in the Saar region, which were owned by the Krämer brothers, faced a serious solvency crisis in 1901, because, at that time, the price for finished iron products had dropped considerably, while the firm was bound to a high price for pig-iron by older contracts with the pig-iron cartel of Lorraine.<sup>65</sup> As a consequence of this crisis, in 1905 the Kraemer AG merged with the Rümelingen und Öttinger blast furnace works from the *minette* region and formed a new integrated company, the Rümelingen und St. Ingberter Hochöfen und Stahlwerk AG. Vertical concentration in the iron and steel industry was a feature not only of the Ruhr region, but could be observed in other coal and iron regions, too. The policy of the Rhenish-Westphalian coal syndicate and of the cartels in other regions and countries, such as the Belgian coke syndicate<sup>66</sup> or the pig iron cartel of Lorraine and Luxembourg and its equivalent in France, the Comptoir Métallurgique de Longwy<sup>67</sup>, supported the affiliation of production capacities. The first result of the vertical takeovers was a concentration within the region's coal and steel sector, that was followed by trans-regional takeovers and concentration.

64. Reckendrees, pp. 59-85

65. In the early 1890s, Aachener Hütten-Aktien-Verein also got into a solvency crisis, because the company could not fetch sufficient prices for its too ample stocks of raw materials and because of long-term delivery contracts during a critical phase of the economy. As a consequence, Aachener Hütten-Aktien-Verein acquired iron ore mines in 1892, just as *St. Ingbert* did later. Cf. Nievelstein, pp. 180-184; Feldmann, pp. 171-175, 213-218, 229 and 326; Banken, *Take-Off-Phase und Hochindustrialisierung*, pp. 467-486.

66. Landesstelle Belgien *Hauptindustrien*, pp. 68-80; G. de Leener, *Le Marché Charbonnière Belge*. (Brüssel 1908), pp. 72-84.

67. On the pig iron cartels of the *minette* region cf.: Bühler, pp. 25-127; M. J. Rust, *Business and Politics in the Third Republic. The Comité des Forges and the French Steel Industry 1896-1914*, (Princeton 1973), pp. 7-131; J. Tribot-Laspière, *L'Industrie de L'Acier en France*, (Paris 1936), pp. 298-299.

Trans-regional corporate integration followed the delivery relations that had intensified since the 1870s and created the aforementioned division of labour between the regions. One precondition for this division of labour was that the transport costs between the regions had sunk considerably between 1870 and 1900 due to enlarged freight cars and more powerful trains, which also led to fiercer competition between the areas.<sup>68</sup> The construction of new railway lines that shortened routes between the regions, and the construction of new channels contributed to the reduction of transport costs.<sup>69</sup> One consequence was that the transport of raw materials and semi-finished products between areas became more profitable, as did their use in more distant regions. On the other hand, the individual coal and iron sites expanded their sales into areas that previously had been barred by the high costs for the transport of bulk goods. On the whole, competition between regions and enterprises increased, both in the market for supplies and in the sales market. For example, after 1870 the Saar region gradually lost parts of its undisputed sales area for coal to expanding competitors from the Ruhr, from Belgium and from Northern France, which from that time on were able to compete because of falling freight tariffs.

Apart from transport costs, the technical innovations in the iron and steel industry influenced relations between individual regions. Various improvements (the Gilchrist-Thomas process, single-smelting production, the use of the furnace and coke gases, improved coke output) reduced the plants' coal consumption. Whereas about 1860, between 1.3 and 1.9 tons of coke were needed for the production of one ton of pig-iron at the Saar, that ratio sank to between 0.9 and 1.3 tons of coke until 1913. Therefore, it became more lucrative to send the coke to the iron ore.<sup>70</sup> The competitive position of iron-producers in the regions where iron ore was found improved in comparison to those in coal

68. Banken, *Take-Off-Phase und Hochindustrialisierung*, pp. 337-446.

69. Banken, *Take-Off-Phase und Hochindustrialisierung*, pp. 337-446.

70. Banken, *Take-Off-Phase und Hochindustrialisierung*, pp. 337-446.

mining regions. These latter, therefore, invested more heavily in the iron-ore regions, especially in the largest one, namely the *minette* area of Luxembourg and Lorraine. Investment now went, not only into the possession and exploitation of iron ore deposits, but also into blast furnaces and steel mills. For similar reasons, not only the Ruhr corporations placed investments in Luxembourg and Lorraine, but also firms from Luxembourg and Lorraine themselves, from the Saar, Belgium and other French regions, and from the Aachen area.

After 1890, when coal and steel corporations with production facilities in several regions were established on a larger scale, delivery relations between formerly independent firms were organized, no longer via the market, but within the corporations. Accordingly, the division of labour between the regions that had emerged out of delivery relations from 1870 onwards was transferred to the corporate level. This was most conspicuous with corporations possessing large-scale plants in the Ruhr and in the *minette* region. About 1914, some of these corporations cannot be ascribed unambiguously to only one region. The Stinnes corporation Deutsch-Luxemburgische Bergwerks- und Hütten AG is the best example.<sup>71</sup> Not only did it own plants in its two centres, the Ruhr region (Dannenbaum colliery; Dortmunder Union colliery, blast furnaces, and steelworks; Friedrich-Wilhelms-Hütte at Mülheim with blast furnaces, foundry, and mechanical engineering plant) and the *minette* region (at Differdange; Rumelange iron ore mines, blast furnaces, steelworks), but it was an active enterprise in the Saar, too (St. Ingbert steelworks, Saar-et-Moselle colliery). A clear-cut division of labour was installed between the German and the Luxembourg-Lorraine works until 1914. Pig iron and steel bars were produced in Lorraine, rails in the Ruhr, and wire in the Saar. At the same time, coal from the company-owned collieries in the Ruhr and the Saar, and pig iron semi-finished steel products from Lorraine were used to supply the processing steelworks and rolling mills in the Ruhr and the Saar.

71. Feldmann, pp. 60-373.

Although a centre of activities can be clearly identified for other trans-regional enterprises, for example, the de Wendel corporation, they also controlled facilities in all West European iron and coal regions.<sup>72</sup>

## 6. Conclusion

THE INTEGRATION OF ENTERPRISES among the West European mining regions, examined here, depended mainly on mutual delivery agreements, the proximity of regions, and improving transportation. Competition between individual enterprises and mining regions increased independently of Franco-German political relations after 1890-95, thanks to the process of concentration and cartelization. Both the competition for a secure and affordable supply of raw materials and semi-finished products, and for secure sales at acceptable prices, worked to further mutual co-operation and integration.

However, the emphasis here on independent economic causes which led to the integration of West European coal and steel enterprises and regions does not totally invalidate the results of previous research on the significance of Franco-German relations for the coal and steel industry of both countries in the decade before World War I. Rather, national policies and the development of economic relations, as described by Poidevin, amplified, penetrated, and overlay this process, that was originally triggered by economic impulses.

Of course, together with fears of a purely economic nature, such as the anxiety about insecure and expensive supplies of coal, iron ore, and

72. On the outbreak of the First World War, the family-owned corporation de Wendel owned, apart from its iron ore mines in the Lotharingian *minette* region (Hayange, Moyeuve, Joeuf), also plants at the Saar (a colliery at Klein-Rosseln with its coke Kokerei at Hirschbach), in the Ruhr region (colliery "Heinrich Robert" near Hamm including a coke, shares in the colliery "Friedrich Heinrich" near Moers), in the Aachen region (mining concession for the coal field "Glückauf"), in Belgium (colliery Six-Bonnier), in Northern France (shares in the collieries "La Clarence" and "de Crespin"), and in the Netherlands (colliery "d'Orange-Nassau"). Sédillot, pp. 250-251 and 281.

pig iron via the market, political considerations existed in the corporations. After 1905, the political bias became more pronounced in the enterprises, and on the German side led to demands for annexation in World War I. For the corporations believed that their supplies could only be secured through direct control over mineral deposits and facilities in their possession on the territory of their own state.<sup>73</sup> Nevertheless, it is striking that the growing political tensions which would ultimately result in the outbreak of the Great War did not impede the trend towards greater business and economic integration.

Nevertheless, the origins of this process cannot be found in the fact that enterprises no longer left supplying their plants to market forces, which had been partially suspended by the cartels. Rather, they sought direct corporate control through ownership. Otherwise, it is difficult to explain why, independently of the stages of political conflict, companies from the Saar also placed investments in the Ruhr and in the Aachen region, or why Belgian companies put their capital into the *minette* region and into Northern France. The extensive transregional and transnational integration and its causes can only be elucidated by a further examination of the West European mining and steel industry on the regional level.<sup>74</sup>

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73. The latter point is analyzed by Stefanie van de Kerkhof: S. van de Kerkhof, *Von der Friedens- zur Kriegswirtschaft. Unternehmensstrategien der deutschen Eisen- und Stahlindustrie vom Kaiserreich bis zum Ende des Ersten Weltkrieges*, (Essen 2006).

74. Cf.: T. Pierenkemper (Hg.), *Die Industrialisierung europäischer Montanregionen im 19. Jahrhundert*, (Stuttgart 2002).

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