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The Mixed Economy and the Concentration of the Coal Companies in the European Coal and Steel Community between 1952 and 1967

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The central paradigm of John Maynard Keynes' economic theory is that only state intervention can reinstate economic demand and reduce the unemployment rate to a socially acceptable level. After World War II, depending on the extent of government participation, Keynes's theory led to three variants of the so-called mixed economy: neo-collective, neo-liberal, and central consultation. In each of the postwar (Western) European countries, one of these variants predominated. When the European Coal and Steel Community (ECSC) was founded, all six founding countries, except Luxembourg, produced coal. In this essay, I discuss which of the three variants of government participation dominated the coal-producing companies in these five countries (West Germany, France, Italy, Belgium, and the Netherlands), and how this influenced the concentration of these companies during the period from 1952 to 1967.

After World War II, there was a strong desire to create a new economic system in Western Europe, both to prevent a new Great Depression and as a reaction to the war, which was perceived as the end result of a crisis caused by the failure of the traditional, liberal economic system. Moreover, there had been a long tradition of extensive state involvement in the economy, in France and Germany, for example. Together with the theoretical framework provided by John Maynard Keynes in his *General Theory of Employment, Interest and Money* (1936), this led to a new concept of the mixed economy; its central paradigm was that only

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intervention from the state could reinstate economic demand and reduce the unemployment rate to a socially acceptable level.[1] State intervention could consist of many different measures, including the nationalization of companies, a variable degree of government planning, investment in research and development (for example, subsidizing of certain industries), and the creation of a consultation system for industries. According to the extent of state intervention in the economy, three variants of the mixed economy can be discerned: the neo-collective, neo-liberal, and central consultation variants); in each of the postwar (Western) European countries, one of these variants of government participation was more dominant.[2]

Authors of the many books and research articles that have dealt with the topic of the mixed economy often start with very general descriptions of what was meant by the term, after which they usually analyze the effects of one of the three variants of the mixed economy on the overall industrial production of a given country, rather than focusing on different industries within that country.[3]

My aim in this essay is to examine which of the three variants of government intervention was most dominant in the five coal-producing countries of the European Coal and Steel Community (ECSC)—West Germany, France, Italy, Belgium, and the Netherlands—at the ratification of the ECSC's foundation treaty in 1952. I analyze how the degree of nationalization, which is often regarded as the most effective way for governments to influence the economic process, has affected the concentration of the coal industry in the ECSC as a whole, and in each of these five countries. In addition, I look at how the (very) different concentration ratio of the coal-producing industry in each country has changed between 1952 and 1967.

[1] Herman Van der Wee, "The Twentieth Century: An Economic Retrospective" *European Review* 8 (Feb. 2000): 17-35, 28.

[2] Derek Howard Aldcroft, *The European Economy, 1914-1990* (London, 1996), 155, and Herman Van der Wee, *De gebroken welvaartscirkel: de wereld-economie, 1945-1980* (Leiden, 1989), 210-13.

[3] For example, Aldcroft, *The European Economy*; Ivan Tibor Berend, *An Economic History of Twentieth-Century Europe: Economic Regimes from Laissez-faire to Globalization* (Cambridge, England, 2006); Eric John Hobsbawm, *Age of Extremes: The Short Twentieth Century, 1914-1991* (London, 1994); Sima Lieberman, *The Growth of European Mixed Economies, 1945-1970: A Concise Study of the Economic Evolution of Six Countries* (Cambridge, Mass., 1977); Mark Mazower, *Dark Continent: Europe's Twentieth Century* (New York, 1998); Sidney Pollard, *Peaceful Conquest: The Industrialization of Europe 1760–1970* (Oxford, U.K., 2000); Van der Wee, *De gebroken welvaartscirkel*; Van der Wee, "The Twentieth Century," 17-35.

Historical Background

The coal and steel industry was very important for both the postwar rebuilding of the European economy and the economic prospects of Europe in the long term. However, the postwar political situation led to major conflicts about who would own and control the production of coal and steel. The main problem was the German coal and steel industry, which had been the dominant economic force in prewar Europe. After World War II, (West) Germany still had the technological knowledge and the experience to regain its prewar position quickly; therefore, the Allies were understandably not inclined to give (West) Germany its economic independence back.[4] In response to this problem and to the need to take steps toward greater European integration, the political leaders of France, West Germany, Belgium, the Netherlands, Luxembourg, and Italy founded the ECSC, which they hoped would provide a common legal framework for the coal and steel industry.[5]

The Industrial Triangle

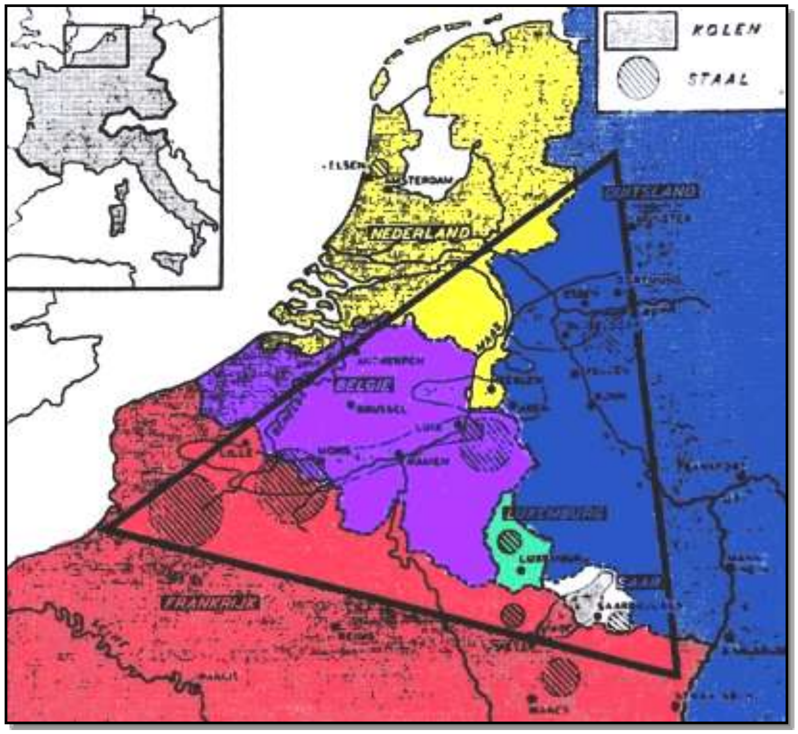
There were considerable differences in the regional concentration of the coal, iron ore, and steel companies within the ECSC countries. Before World War II, the region formed by Lorraine and Northern France (in France), the Saar region, Aachen, and the Ruhr region (in West Germany), Luxembourg, Belgium, and the southern part of The Netherlands was called the industrial backbone of Western Europe.[6] Most of the coal, iron ore, and steel production took place in this relatively small geographical area, which had the shape of an inverted triangle and, as a result, was called the industrial triangle (see Figure 1). In 1952, all six ECSC countries (of which only Italy was entirely outside the industrial triangle) produced steel, and all but Luxembourg produced coal. The location of a steel plant usually represented an attempt to balance the advantages and disadvantages with regard to assembly costs of the raw materials and freight or transport costs.

[4] Dirk Spierenburg and Raymond Poidevin, *Histoire de la Haute Autorité de la Communauté Européenne du Charbon et de l'Acier: Une expérience supranationale* (Brussels, 1993), 4.

[5] Gerhard Bebr, "The European Coal and Steel Community: A Political and Legal Innovation" *Yale Law Journal* 63 (Nov. 1953): 1-43, 6; and David Gerber, *Law and Competition in Twentieth-Century Europe: Protecting Prometheus* (Oxford, England, 1998), 336.

[6] Anonymous: "Economic Reconstruction in Europe," *International Affairs* 20 (Oct. 1944): 527-41, 535.

FIGURE 1
The ECSC and the Industrial Triangle



Note: In the ECSC statistical data, the Saar region was counted as part of West Germany, economically, only from January 1, 1960, on. Until 1960, the ECSC statistically regarded the Saar region as an independent region, not as part of West Germany.

Source: Voorlichtingsdienst van de H.A., "De toekomst van de steenkool en de concurrentie op het gebied van de energie in de gemeenschap," in EGKS, *Europese Gemeenschap voor Kolen en Staal* (Amsterdam, 1959): 62-67, 62.

After World War II, the Western European demand for coal, iron ore, and steel was very high because of the enormous need for these products to reconstruct the economy. Most of the coal production of the Western European coal-producing countries was reserved for their own national markets, with only a very small portion left for export.[7] Moreover, the booming demand for coal, iron ore, and steel was expected to continue for

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[7] René Brion and Jean-Louis Moreau, *The Société Générale de Belgique, 1822-1997* (Antwerp, 1998), 383.

the foreseeable future. Therefore, the coal- and steel-producing firms of Western Europe had reason to increase their supply of these products both by increasing their own production and by importing some coal, iron ore, and steel.

The Regional Concentration of Coal, Iron Ore, and Steel Firms, 1952–1967

From 1952 to 1967 considerable changes occurred in the West European coal, iron ore, and steel industry, both with regard to the size of production and the regional location of the firms. Therefore, the regional concentration of these industries—and hence the relative importance of the industrial triangle—changed during this period as well.

The demand for the ECSC's steel kept rising during the 1950s and 1960s, especially with the increasing desire of the emerging modern consumer society for durable consumer goods such as cars and household appliances. Steel was the most necessary raw material for the production of these goods, and the increased demand for steel and the increasing supply of steel products led to an increase in steel prices.[8]

In contrast, the demand for the ECSC's iron ore decreased between 1952 and 1967, for several reasons. First, cheaper and higher quality iron ore was increasingly imported from countries outside the ECSC such as Sweden, South America, and Liberia, and, to a lesser extent, from the Union of Soviet Socialist Republics (USSR), Canada, North Africa, and Spain.[9] Second, other steel-making processes emerged that no longer needed iron ore as the raw material to produce steel, using cheaper iron scrap instead. The decreased demand for the ECSC's iron ore, combined with the realization that the trend would not be reversed in the short term and that the ECSC's iron ore mines were becoming exhausted, led to a marked decrease in the ECSC's iron ore production from 1961 on.[10]

As for the ECSC's coal production, after World War II the worldwide demand for energy increased, and coal remained the most common energy source in Western Europe. Until 1957, many, including Belgian minister for economic affairs Jean Rey, were convinced that the ECSC's coal would continue to be in demand.[11] In early 1958, however, there was a worldwide

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[8] Erik Buyst, Antoon Soete, and Hans Verhoosel, *Sidmar, 1962-2002: Forty Years of Steel Production in Flanders* (Ghent, 2002), 35, 39, and 61.

[9] Eurostat, *Iron and Steel* (1964), no. 1, Table 65, Table 77, and Table 129, 84, 108, and 191; (1966), Table 65, Table 77, and Table 129, 84, 108, and 191; (1969), Table 65, Table 77, and Table 129, 85, 108, 192; United Nations, *The World Market for Iron Ore* (New York, 1968), 52-63.

[10] Eurostat, *Iron and Steel* (1964), no. 1, Table 1, 3-4; (1969), no. 1, Table 1, 3-4.

[11] Brion and Moreau, *The Société Générale de Belgique, 1822-1997*, 386.

overproduction of energy and a gradual decrease in demand for the ECSC's coal. First, improvements in steel industry technology resulted in the need for less coal to produce the same amount of end product. Second, between 1952 and 1967 coal was increasingly imported from the United States and the United Kingdom, and, from the 1960s on, from the USSR, Australia, South Africa, and Poland.[12] Moreover, even taking into account the higher transportation costs, imported coal was often cheaper than locally sourced coal because it was dug in so-called opencast mines. In addition, as the European coal mines became exhausted, miners had to reach increasingly deeper layers to find coal of satisfactory quality, which led to higher production costs.[13] Third, alternative, more efficient, and cheaper energy sources (such as oil or electricity) were increasingly substituted for coal; they were available worldwide and could be used to generate heat for the steel industry, for example.[14]

In essence, the European coal industry was an old industry, with a structure determined by a long history; it was increasingly struggling to adjust itself to a new, competitive situation in a market with stagnating demand. Moreover, the European coal industry was large enough that the outcome of any adjustment to its structure and production methods would greatly influence the economic development of Europe as a whole.[15] From 1952 to 1967, the ECSC's coal production had boomed, then markedly decreased from 1958 on.[16] Some of the Belgian coal mines provided a clear symptom that the ECSC's coal industry was ill. Although these mines systematically operated at a loss, closing them down would lead to enormous social problems and costs—unemployment, strikes, resistance by trade unions, the huge costs to retrain the miners to work in other industries (and in some Belgian regions, there were no other large industries in need of unskilled workers), and so forth.

These social reasons, together with more technical and economic factors, made it impossible for the ECSC to adapt coal production to meet

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[12] Eurostat, *1966 Energy Statistics Yearbook: 1950-1965*, Table 77 and 92, 77, 92; *1968 Yearbook: 1958-1967*, Table 77 and Table 92, 77, 92.

[13] "De steenkolen in de V.S.A.," Kredietbank, *Weekbericht* 12, no. 40 (12 Oct. 1957): 405-8.

[14] Ingvar Svennilson (United Nations, Economic Commission for Europe), *Growth and Stagnation in the European Economy* (Geneva, 1954), 105; and Georges Brondel, "The Sources of Energy, 1920-1970," in *The Fontana Economic History of Europe,* vol. 5: *The Twentieth Century*, ed. Carlo M. Cipolla (Sussex, 1977), 219-300, 227.

[15] Svennilson, *Growth and Stagnation in the European Economy*, 105.

[16] Eurostat, *Coal and Other Energy Sources* (1962), no. 1, 4; (1964), no. 1, 25; (1969), no. 1, 40; and Eurostat, *1966 Energy Statistics Yearbook: 1950-1965*, p. 68; and *1968 Energy Statistics* Yearbook: *1958-1967*, p. 74.

the short-term fluctuations in coal demand. Instead, they could only follow the general trends in demand. A series of similar reactions from the coal suppliers followed each contraction of the market after 1957. First, unsalable coal was stockpiled (leading to huge supplies). Subsequently, part-time work was used to reduce the capacity utilization rate; only as a last resort was the rate of mine closures increased.[17]

For these reasons, the ECSC's coal production kept rising until about 1957, which led to an excess supply of ECSC coal and a real coal crisis from 1957 on. Beginning in 1958, there was a clear decrease in the ECSC's coal production, as it became obvious that they could no longer compete with cheaper imported coal. It was becoming increasingly expensive to source coal locally, and continued stockpiling seemed worse than decreasing coal production and eventually closing down some coal mines and firms.[18]

During the period studied (from 1952 to 1967), five different steel production methods were used that resulted in five different types of crude steel: Bessemer steel, Thomas steel, Siemens-Martin steel, electric steel, and LD (Linz-Donawitz) steel. The choice of a steel production method was related to the availability of the necessary resources—that is, coal or electricity as fuels, and iron ore or iron scrap as raw material.[19] In accordance with their factor endowments (the amount of labor, land, capital, and entrepreneur-ship that a country possesses and, therefore, can exploit for manufacturing purposes), each of the ECSC countries chose to use specific steel production methods.

The cheap imports of coal and iron ore from outside the ECSC, as well as the emergence of new energy sources, had to be considered when decisions were made about the formation of new steel firms. During the period from 1952 to 1967, the industrial triangle remained responsible for more than 90 percent of the total coal and iron ore production of the ECSC.[20] However, for several reasons, the relative importance of this

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[17] Commission of the European Communities, *Twenty-five Years of the Common Market in Coal* (Brussels, 1979), 36.

[18] Eurostat, *Coal and Other Energy Sources* (1962), no. 1, 4; (1964), no. 1, 25; (1969), no. 1, 40; Eurostat, *1966 Energy Statistics Yearbook: 1950-1965*, p. 68, and *1968 Energy Statistics Yearbook: 1958-1967*, p. 74.

[19] Gordon Boyce and Simon Ville, "Iron and Steel Production (to 1945)," in *The Development of Modern Business,* ed. Gordon Boyce and Simon Ville (New York, 2002), 165-66; and Richard J. Fruehan, "Overview of Steelmaking Processes and Their Development," in *The Making, Shaping and Treating of Steel: Steel-making and Refining Volume,* 11th ed., ed. Richard J. Fruehan (Pittsburgh, Pa., 1998), 4-12.

[20] Calculated with data from Eurostat, *1966 Energy Statistics Yearbook: 1950-1965*, p. 68, and Eurostat, *Coal and Other Energy Sources* (1962), no. 1, 4;

triangle in the ECSC's total steel production decreased from 91 percent in 1952 to 73 percent in 1967.[21] This decrease coincided with a shift in the steel industry from a so-called raw material orientation (in which steel firms were established near the necessary fuel [coal] and raw material [iron ore]) to a market orientation (in which the choice of the location for a new steel firm was linked to the availability of nearby markets).[22]

The reasons for this shift were the increasing shortage of locally sourced coal and iron ore of sufficient quantity and quality, together with the import of cheaper coal and iron ore from overseas, the emergence of new and alternative energy sources, the increased availability of scrap as raw material, the increasing use of new steel production methods that required less coal and/or iron ore, the increased demand for high-quality steel, and the corresponding need for closer contact with the finishing processes.[23]

Finally, the newly established steel plants after World War II were increasingly located in tidewater, regions, which allowed the use of cheap overseas supplies as well as the transport of the finished steel products over water; these were called coastal steelworks.[24] Steel plants also increasingly became so-called integrated steelworks, which not only controlled and monitored the mills where the steel was manufactured, but also the mines where the iron ore was extracted, the coal mines that supplied the coal, the ships that transported the iron ore, the railroads that transported the coal to the factory, and the ovens where the coke was produced.[25]

The Number and Nationalization of the ECSC's Coal-Producing Companies, 1952-1967

As a result of the decrease in the ECSC's coal production, the overall number of coal-producing companies markedly decreased between 1952 and 1967, from 149 to 73. However, the coal-producing companies were

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(1964), no. 1, 25; (1969), no. 1, 40; and Eurostat, *Iron and Steel* (1964), no.1, table 1, 3-4, and (1969), no.1, table 1, 3-4.

[21] Calculated with data from Eurostat, *Iron and Steel* (1964) no. 1, Table 3, 6-7 and table 22, 29, and (1969), no. 1, table 3, 6-7 and Table 22, 29.

[22] Louis Lister, *Europe's Coal and Steel Community* (New York, 1960), 21.

[23] Douglas K. Fleming, "Coastal Steelworks in the Common Market Countries," *Geographical Review* 57 (Jan. 1967): 48-72, 48; and Svennilson, *Growth and Stagnation in the European Economy*, 133.

[24] Maria De Waele, *Staal, een monster zonder waarde? De problemen van de Belgische staalsector, 1974-1983* (Antwerp, 1983), 9.

[25] Bernadette Mérenne-Schoumaker, *La localisation des industries: mutations récentes et méthodes d'analyse* (Luxembourg, 1996), 71.

not equally distributed among the ECSC countries, and they differed greatly in size. Most of the companies were found in West Germany (71 in 1952; 34 in 1967) and Belgium (62 in 1952; 25 in 1967). France had eight large coal-producing companies during the entire period studied; the Netherlands had five, while Italy had three companies in 1952, only one in 1967.[26]

Article 83 of the Treaty of Paris (the foundation treaty of the ECSC) very clearly states that "the establishment of the community shall in no way prejudice the system of ownership of the undertakings to which this Treaty applies."[27] Thus, the ECSC was supposed to be indifferent to whether or not the coal and steel firms were government-owned. However, the influence of the state (for instance, through partial nationalization or subsidies) was very important to the overall structure of the coal firms and to the market policy they adopted.[28]

In 1950, the economies of France and Italy were regarded as the neo-collective variant of the mixed economy, while the economy of West Germany was regarded as the neo-liberal variant. The economies of The Netherlands and Belgium were characterized as the central consultation variant.[29] Thus, the coal industries in the five coal-producing countries of the ECSC were characterized by the three different variants of the mixed economy, which also implied a variable degree of government intervention. I looked at how different degrees of nationalization (which is often regarded as the most effective way in which governments can influence the economic process) affected the concentration of the coal industry in the ECSC as a whole, and in each of the ECSC's coal-producing countries (see Table 1).

As expected, all coal-producing companies in Italy and France had been nationalized, and the coal industry of West Germany was more privatized. In addition, there were both nationalized and private coal-

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[26] Eurostat, *1966 Energy Statistics Yearbook: 1950-1965*, 108-9; and *1968 Energy Statistics Yearbook: 1958-1967*, 101-2; Fédération charbonnière de Belgique, *L'industrie Charbonnière belge* (Bruxelles, 1959), 19, and Communauté européenne du charbon et de l'acier (CECA): Haute Autorité (H.A.), Division des problèmes industriels, Bureau d'Etudes et d'Analyses, *Les entreprises de la communauté: I. Charbon, état* (Luxembourg, 1959), 1-147.

[27] ECSC, *Treaty of Paris, Article 83* (Luxembourg, 1951).

[28] Acts of nationalization generally apply to whole industries, but a state can also acquire all or part of the assets of a particular firm within an industry. Europese Gemeenschap voor Kolen en Staal (EGKS), H.A., *EGKS 1952-1962: De eerste 10 jaren ener partiële integratie: Resultaten, grenzen, perspectieven* (Luxembourg, 1963), 223.

[29] Van der Wee, *De gebroken welvaartscirkel*, 210-13, 216-18, 223-26, and 228-30.

producing companies in the Netherlands. There were no nationalized companies in Belgium, however, which is rather unexpected, as the Netherlands and Belgium were characterized by the same central consultation variant of the mixed economy.

TABLE 1

Degree of Nationalization in the Coal Industries of ECSC Countries

Year	100%	50-100%	0-50%	0%
1938	(Saar)	Netherlands	West Germany	Belgium
1955	(Saar)/France/Italy	Netherlands (63)	West Germany (16)	Belgium
1961	France/Italy	Netherlands (62)	West Germany (29)	Belgium
1967	France /Italy	Netherlands (54)	West Germany (20)	Belgium

Source: EGKS, H.A., *EGKS* 1952-1962: *De eerste 10 jaren ener partiële integratie: Resultaten, grenzen, perspectieven* (Luxembourg, 1963), 222; Louis Lister, *Europe's Coal and Steel Community* (New York, 1960), 165-68; and Commissie van de Europese Gemeenschappen, *Eerste oriëntatie voor een gemeenschappelijk energiebeleid: Mededeling van de commissie bij de Raad ingediend op 18 december 1968* (Luxembourg, 1968), 61.

In 1963, the ECSC stated that: "several coal firms are in the hands of the state or work partially with governmental capital, while the small and very small firms are in the hands of the private sector."[30] Accordingly, the publicly owned coal firms were rather large and the private coal firms were rather small. For the last year of the researched period, 1967, more detailed information was found about who (that is, the government and which other industries or others, for example financial holdings or private owners) owned the coal industry in the member countries (see Table 2).

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[30] The Dutch text was: *"Talrijke kolenmijnondernemingen zijn in handen van de Staat of werken ten dele met overheidskapitaal, terwijl de kleine en zeer kleine ondernemingen in handen van de particuliere sector zijn."* EGKS, H.A., *EGKS 1952-1962: De eerste 10 jaren*, 223.

TABLE 2
Ownership of the ECSC Coal Industries in 1967
(%)

Owner/Majority Capital Shareholder	**Italy**	**France**	**Nether-lands**	**West Germany**	**Belgium**
Iron and steel industry	-	-	26.7	33.6	1.2
Chemical and petroleum industry	-	-	-	9.9	-
Government	100	99	54.1	20.0	-
Electrical power plants/ public utilities	-	-	-	9.2	-
Others	-	1.0	19.2	27.3	98.8
Total	**100**	**100**	**100**	**100**	**100**

Source: Commissie van de Europese Gemeenschappen, *Eerste oriëntatie voor een gemeenschappelijk energiebeleid: Mededeling van de commissie bij de Raad ingediend op 18 december 1968* (Luxembourg, 1968), 61.

In Table 2, we see that, in 1967, in Italy and France the coal industry was entirely nationalized; the state owned almost all of the coal companies' capital and shares. In Belgium, in contrast, the coal industry was entirely privately owned; almost 99 percent of the capital and shares of the coal companies belonged to others—mainly holding companies such as the Société Générale de Belgique. In the Netherlands and West Germany, the coal industry was partially privatized and partially state-owned. In the Netherlands, the government still owned more than 50 percent of the coal industry, with the remainder owned by the iron and steel industry and others. In West Germany, only 20 percent of the coal industry was state-owned in 1967, with the majority owned by a combination of the iron and steel industry, the chemical and petroleum industry, and others.

The percentages in Table 2 give a very general indication of how the coal companies' capital and shares were divided among the different industries, the government, and others, but they do not provide much information about the specific and often very strong commercial relationships between the coal industry and some of its shareholders. For instance, the iron and steel industry owned 33.6 percent and 26.7 percent of the coal industry in West Germany and the Netherlands, respectively. This meant the iron and steel industry had a major influence on the decisions that were made concerning the coal industry in those countries. In addition, the percentages in Table 2 do not provide any information about which of the coal industry's owners had decision-making power.

For example, the Belgian government simply did not want to nationalize the essentially ill coal industry; their reasoning was that in the past, the privately owned coal firms had made all the profits, so now they should be held accountable for all the industry's losses. Moreover, the figures in Table 2 could give the mistaken impression that in the ECSC countries where there was little or no nationalization of the coal industry (West Germany and Belgium), the governments had no or very limited influence on the coal-producing firms, and that most, if not all, of the decision-making power lay with the shareholders. In reality, governments could influence the coal industry not only by nationalizing coal-producing companies, but also through subsidies or by implementing other measures to protect their own coal industry against competitors. For example, the Belgian government repeatedly gave subsidies to the coal industry, hoping to keep the industry afloat at least until the market recovered or until a solution was found for the social difficulties expected to occur if some coal mines had to be closed (including mass unemployment and the huge cost of retraining the miners). In 1959 alone, the Belgian government subsidized the struggling Belgian coal mines with 800 million francs.[31] Thus, although it did not actually own shares, the Belgian government had an enormous influence on the coal industry through the varied measures it took to protect and save the industry (although eventually these measures proved rather futile).

The Concentration of ECSC Coal-Producing Companies, 1952-1967

The Herfindahl-Hirschman Index or HHI is a measure of the size of firms or companies in relationship to the industry concerned, and an indicator of the amount of competition among them. It is defined as:

$$HHI = \sum_{i=1}^{n} M_i^2$$

The sum of the squares of the market shares of each individual firm (*M*), with *n* being the number of firms in a given industry.

The HHI ranges in value between 0 (a very large number of very small firms) and 1 (a single monopolistic producer), so the higher the HHI, the less competitive the industry. One needs to know the market shares of all firms for a given year and industry to calculate the HHI for that industry

[31] Brion and Moreau, *The Société Générale de Belgique, 1822-1997*, 387.

that year. Because we could determine the market shares of all coal-producing companies only in Belgium and West Germany, we could calculate the HHI's only for those countries (see Table 3).

TABLE 3
HHI for Coal Firms

Coal Firms	**1952**	**1967**
Belgium	0.029	0.080
West Germany	0.032	0.043

Source: Calculated using data from Eurostat, *1966 Energy Statistics Yearbook: 1950-1965,* pp. 68-69 and 108-9; and *1968 Energy Statistics Yearbook: 1958-1967*, pp. 75 and 100-101; and Eurostat, *Coal and Other Energy Sources* (1962), no. 1, p. 4; (1964), no. 1, p. 25; and (1969), no. 1, p. 40.

As we can see in Table 3, between 1952 and 1967 the coal industry in both countries became more concentrated. However, we must interpret this apparently straightforward evolution with caution, for two reasons. First, during the period we studied (1952-1967), the mean size of the coal-producing companies in Belgium and West Germany increased, which resulted in an increase in pricing power and a decrease in the level of intra-industry competition (see Table 3). Second, in order to compare the Belgian and West German coal industries with other competing industries such as the cheaper coal industries in the United States or Poland or the emerging (also cheaper) oil industry, we would have to calculate the HHI for those industries and countries.

Therefore, other concentration ratios were needed to determine the change in concentration within the coal industries in the ECSC as a whole and in the other three coal-producing ECSC countries (France, Italy, and the Netherlands). To make these calculations, we used the so-called ten-firm concentration ratio or C10, which consists of the market share (as a percentage/proportional share of the total production) generated by the ten largest firms in the industry. Between 1952 and 1967, the C10 of the ECSC's coal industry increased from 42.4 to 49.0 percent of total production, which indicates a more concentrated coal industry in the ECSC as a whole—that is, fewer firms became responsible for a larger share of the ECSC's total coal production (see Table 4).

TABLE 4
Largest ECSC Coal Firms and Their Share in ECSC Production

	Share in ECSC Production (%)			
	1952	**1961**	**1965**	**1967**
Largest Firm	12.3	11.7	11.4	12.4
4 Largest Firms	28.4	30.4	28.9	31.9
10 Largest Firms	42.4	48.9	45.6	49.0

Source: calculated with data from Eurostat, *1966 Energy Statistics Yearbook: 1950-1965*, pp. 76-77; and *1968 Energy Statistics Yearbook: 1958-1967*, pp. 74, and 101-2.

Note: The French Houillères de bassin were counted as independent firms and not as part of one firm, the large Charbonnages de France.

However, this increase reflects the evolution of coal production for the ECSC as a whole; the point of departure in 1952 was very different in the five coal-producing countries. Thus, government influence differed (for example, in degrees of nationalization), and hence the five countries had different variants of the mixed economy. This in turn influenced the degree of concentration of the coal-producing companies at the ECSC's start in 1952 (for example, nationalized firms were often larger than privately owned firms). Therefore, for each of the five countries, we calculated the market share as a percentage of the three largest coal companies' market output. We found large differences between the countries with mainly nationalized coal industries and those with limited or no nationalization. Moreover, we investigated how these different degrees of coal industry concentration in 1952 changed between 1952 and 1967 (see Tables 5 and 6).

Countries with mainly nationalized coal firms (50 percent or more)
Generally, in countries with a mainly nationalized coal-producing industry (France, Italy, and to a lesser extent, the Netherlands), the three largest coal companies (all government companies) were responsible for 80 percent or more of the country's total coal production in 1952. In each of these countries, there were also many very small companies, each responsible for a small percentage of total coal production. Thus, the 1952 coal industry in France, Italy, and the Netherlands was very concentrated. Moreover, between 1952 and 1967, it remained very concentrated, as the

total market share generated by the three largest firms barely changed. In Italy, by 1967, there was only one firm responsible for 100 percent of coal production (see Table 5).

TABLE 5

Market Share, as % of Market Output of the Three Largest ECSC Coal Firms

Country	1952	1961	1965	1967
France	82.0	83.2	84.4	85.3
Italy	99.1	99.4	100.0	100.0
Netherlands	92.7	92.1	91.5	85.4

Source: Calculated with data from Eurostat, *1966 Energy Statistics Yearbook: 1950-1965*, pp. 68, 69, 108, and 109, and *1968 Energy Statistics Yearbook: 1958-1967*, pp. 75, 100, and 101.

TABLE 6

Market Share, as % of Market Output of the Three Largest ECSC Coal Firms

Country	1952	1961	1965	1967
Belgium	14.2	19.9	28.1	35.2
Germany	18.8	17.3	22.8	25.8

Source: Calculated with data from Eurostat, *1966 Energy Statistics Yearbook: 1950-1965*, pp. 68, 69, 108, and 109, and *1968 Energy Statistics Yearbook: 1958-1967*, pp. 75, 100, and 101.

Countries with few nationalized coal firms (50 percent or less)

In the countries with little nationalization (Belgium and West Germany), there were many more small- to medium-size companies, and few large or very small companies. In 1952, the coal industry in these countries was not so concentrated. However, the proportional share of coal production by the three largest coal companies in Belgium and West Germany increased from 15 percent in 1952 to approximately 30 percent in 1967, indicating that the coal industries in these countries had become more concentrated (see Table 6).

However, it seems less sensible to draw overall conclusions from these data similar to those concerning the ECSC countries with a higher degree of nationalization. Even in 1967, the three largest coal-producing companies of Belgium and West Germany accounted for only a small percentage of the total coal production. Moreover, from 1952 to 1967, the size of the coal companies in these two countries changed much more than in the countries with mainly nationalized coal industries. During the study period, the three biggest coal companies in Belgium and West Germany changed. In 1965, the three largest Belgian coal-producing firms were *Zolder en Houthalen* in Zolder, *Beeringen* in Beeringen, and *Limbourg-Meuse* in Eisden; *Espérance-Longdoz* in Genk (Winterslag) was the fourth largest. In 1967, *Espérance-Longdoz* had nearly passed the third firm in size, and did so in 1968.[32] In 1965, the three largest West German coal-producing firms were *Saarbergwerk* in Saarbrücken, *Hibernia AG* in Herne, and *Rheinelbe Bergbau A.G.* in Gelsenkirchen. In 1967, the second and third firms had changed places in terms of size.[33] Therefore, we have further analyzed the coal-producing companies in Belgium and West Germany to determine the change in concentration of the entire coal industry, rather than only the 15 to 30 percent produced by the three largest firms (see Table 7).

In contrast with the situation in France, Italy, and the Netherlands, where there were many very large companies and a few smaller firms, in Belgium and West Germany a more equal division/segmentation into different-sized companies prevailed. In 1952, Belgium and West Germany had many small- and medium-sized coal firms and a few larger ones. By 1967, however, this situation had changed. Between 1952 and 1967, the number of coal-producing firms decreased (from 62 to 25 in Belgium, and from 71 to 34 in West Germany). Moreover, the share of some size groups in the production changed; the number of small-sized coal firms as well as their share of total production decreased, especially in West Germany, where no small coal firms were left by 1967. With regard to medium-

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[32] Eurostat, *1969 Energy Statistics Yearbook: 1958-1968*, p. 100.

[33] Ibid., 101.

TABLE 7

Absolute Number and Share in Total Number of Belgian and West German Coal Firms, by size
(in 1,000 tons)

Firm Size	**Belgium**		**West Germany**	
	1952	**1967**	**1952**	**1967**
Small: 0-250	28 (45%)	8 (38%)	20 (28%)	0 (0%)
Medium: 250-1,000	26 (42%)	12 (45%)	8 (11%)	2 (6%)
Large: ≥ 1,000	8 (13%)	5 (17%)	38 (54%)	27 (80%)
Large: ≥ 5,000	-	-	5 (7%)	5 (14%)
Totals	62 (100%)	25 (100%)	71 (100%)	34 (100%)

Source: Calculated with data from Eurostat, *1966 Energy Statistics Yearbook: 1950-1965*, pp. 68-69, 108-9; and *1968 Energy Statistics Yearbook: 1958-1967*, pp. 75, 100-101.

sized firms, which also decreased in number, their share of production increased in Belgium and decreased in West Germany. Finally, during the study period, the number of large coal firms in both countries decreased, although their share in overall coal production increased.

Was this evolution toward fewer, larger coal-producing firms that accounted for a higher share of the total Belgian and West German coal production a result of the closure of some firms, the concentration of several smaller firms into one larger firm, or the emergence of one or more totally new and larger coal-producing firms? We found that in Belgium, there were 62 coal-producing firms in 1962 but only 25 in 1967, a net loss of 37 firms, nearly 60 percent.[34] Moreover, we discovered that in the 1950s, 31 firms closed down (16 in 1959 and 15 in 1960), and further archival sources show us that between 1952 and 1967, 8 concentrations

[34] Eurostat, *1966 Energy Statistics Yearbook: 1950-1965*, pp. 108-9; and *1968 Energy Statistics Yearbook: 1958-1967*, pp. 101-2 ; Fédération charbonnière de Belgique, *L'industrie Charbonnière belge*, 19; and CECA, H.A., Division des problèmes industriels, Bureau d'Etudes et d'Analyses, *Les entreprises de la communauté: I. Charbon, état*, 1-147.

within the Belgian coal and steel industry were formed (2 coal-coal and 6 coal-steel concentrations). The first of these coal concentrations occurred in 1959, with the merger of several old coal-producing firms to create one large company in the southern coalfield of Belgium, the *Charbonnages du Borinage*.[35]

In an attempt to reduce and alleviate the effects of the coal crisis, five coal-fired power stations were brought into service between 1952 and 1960. In addition, specialized organizations were set up to help overcome the crisis. For instance, there was the founding of the *Directoire de l'Industrie Charbonnière*, in 1961. This public body had to regulate Belgian coal production, sales, imports and exports, and, more important, decide about the closure of unprofitable mines and/or about so-called rationalizations and mergers of coal companies.[36] In 1966, Zwartberg, the main coal mine in the Campine region, closed down. In 1967, the second coal concentration was formed, when the government regrouped all the Campine mines and combined them into one firm, the *Kempense Steenkoolmijnen*.[37]

This activity clearly demonstrates that, although officially there were no nationalized coal mines in Belgium, the Belgian government repeatedly took a variety of measures (such as giving substantial subsidies) to keep the Belgian coal industry in business until the market recovered, or a solution was found for the social problems that would follow closure of one or more coal mines.

Moreover, these government protection measures, according to many, wrongly and unnecessarily prolonged the survival of some Belgian coal firms much longer than would have been the case in a truly free market.[38] Through such measures, the Belgian government *de facto* owned the coal mines, although it did not own any shares. Thus, the decrease in coal firms between 1952 and 1967 occurred mainly as a result of the closure of

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[35] Our sources for this research into the agreements and concentrations of the ECSC (1952-1967): Archives of the European Commission in Brussels: *CEAB 2, CEAB 5*, and *CEAB 13* ; CECA, *Journal Officiel de la Communauté européenne du Charbon et de l'Acier* (Luxembourg), 1952-1958; Communautés européennes, *Journal Officiel des Communautés européennes* (Luxembourg), 1958-1967; EGKS, H.A., *Algemeen Verslag over de Werkzaamheden van de Gemeenschap* (Luxembourg), 1952-1967; Europese Gemeenschappen—EGKS, EEG, Euratom—Commissie, *Eerste Algemeen Verslag over de Werkzaamheden van de Gemeenschappen* (Luxembourg, 1967).

[36] Brion and Moreau, *The Société Générale de Belgique, 1822-1997*, 409-11.

[37] Our research into the agreements and concentrations of the ECSC (1952-1967).

[38] See, for example, Max Nokin, director of the Société Générale de Belgique between 1961 and 1974, in Brion and Moreau, *The Société Générale de Belgique, 1822-1997*, 386-87 and 409-11.

inefficient and unprofitable coal mines after the government had exhausted all possible healing measures.

In West Germany, the situation was even more complicated. After World War II, the Allies decided to rearrange the boundaries of Europe, which led to an East-West split. This was very visible in the division of Germany into three western occupation zones controlled by the United States, the United Kingdom, and France, and one eastern occupation zone controlled by the Union of Soviet Socialist Republics.[39] In addition, the western allies decided that West Germany would not be allowed to make any of its own economic decisions, and they took several measures that allowed them to control and monitor West German industry completely. First, in their so-called industrial disarmament plans and level of industry plans, they stipulated capacity and operating rates (limits) for the steel industry; the first of these plans was implemented on March 29, 1946, because coal was scarce after World War II, and Germany was an important exporter to the rest of Europe.[40] Second, in 1948, the International authority of the Ruhr was set up to supervise (and thus control) Ruhr production to prevent West Germany, through its strong coal and steel industry in the Ruhr region, from quickly rebuilding its military apparatus.[41] Third, a general de-concentration of West German industry was imposed, which meant that the large industrial firms characteristic of West Germany before and during World War II were split into several smaller firms to reduce the degree of concentration.[42] For instance, the *Vereinigte Stahlwerke,* a large concentration of coal- and steel-producing firms, was divided into several, smaller firms (including separate coal firms) and the chemical giant *IG Farben* was also split into several smaller companies.

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39 Aldcroft, *The European Economy, 1914-1990*, 115.

40 John Gillingham, *Coal, Steel, and the Rebirth of Europe, 1945-1955: The Germans and French from Ruhr Conflict to Economic Community* (Cambridge, England, 1991), 107; and Frederick H. Gareau, "Morgenthau's Plan for Industrial Disarmament in Germany," *Western Political Quarterly* 14 (June 1961): 517-34.

41 Raymond Poidevin, "Le rôle personnel de Robert Schuman dans les négociations C.E.C.A. (June 1950-April 1951)," in *Die Anfänge des Schuman-plans 1950/51: Beiträge des Kolloquiums in Aachen, 28.-30. Mai 1986*, ed. Klaus Schwabe (Baden-Baden, 1988), 110.

42 On decentralization, see Directive JCS 1067, no. 18, 496, and on decartelization, Directive JCS 1967, no. 36, 501, "Directive JCS 1067 to the Commander-in-Chief of the United States Forces of Occupation Regarding the Military Government of Germany," in U.S. Department of State, *Foreign Relations of the United States* (Washington, D.C., 1945): 3: *European Advisory Commission.*

In 1948, the western German areas eventually merged in order to create the Bundesrepublik Deutschland (BRD).[43] Although this meant that the new West German government would now be allowed to make most of its own economic and other decisions, the restitution of power was subject to several stringent conditions. For instance, it was forbidden to merge the firms that the Allies had split into many smaller firms.

Therefore, in 1952 West Germany still had a large number of relatively small coal-producing firms. Between 1952 and 1967, however, there was a huge re-concentration wave in the West German coal and steel industries. In this respect, it was unlike Belgium; the gradual decrease from 71 coal-producing firms in 1952 to 34 firms in 1967 (a net loss of 37 firms), was not mainly a result of coal mine closures.[44] Rather, in this re-concentration wave, the most popular methods were the acquisition of shares and the establishment of new, larger firms by combining old firms. Archival sources show us that between 1952 and 1967, 63 concentrations occurred in the West German coal and steel industry, of which 13 were coal-coal and 8 were coal-steel concentrations; these concentrations occurred mainly during the first years of the ECSC's existence. The 42 steel–steel-processing concentrations took place during the later years of the study period. Finally, two cross-border coal concentrations were formed: one in 1957 (with a coal firm from Luxembourg) and one in 1966 (with the American—non-ECSC—petrochemical industry).

Conclusion

In summary, between 1952 and 1967, all the ECSC countries' coal industries became more concentrated, and in Belgium and West Germany there was a shift to fewer firms of all sizes; as large firms became larger they were responsible for a greater share of the total coal production. In addition, after World War II, each coal-producing ECSC country chose one of three variants of the mixed economy (each characterized by a certain degree of nationalization), which were associated with differences in the sizes of the coal firms in 1952. By 1967, the three variants had converged, which led to a more concentrated coal industry in the ECSC as a whole.

There are several reasons for this trend toward increasing concentration of the ECSC's coal industry: the closure of several mines in Belgium, the re-concentration wave in West Germany, the increasing worldwide competition that required larger firms for success, the

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43 Desmond Dinan, *Europe Recast: A History of European Union* (Basingstoke, 2004), 32-34.

44 Eurostat, *1966 Energy Statistics Yearbook: 1950-1965,* and *1968 Energy Statistics Yearbook: 1958-1967*; and CECA, H.A. Division des problèmes industriels, Bureau d'Etudes et d'Analyses, *Les entreprises de la communauté: I. Charbon, état*, 1-147.

advantages of larger coal- and steel-producing firms (which were often totally integrated), and the fact that the coal-producing countries of the ECSC increasingly acted and reacted as one entity, rather than as the sum of different coal-producing countries seeking community to deal with the German problem.