Collusion and Competition: The Electrical Engineering Industry in the United Kingdom and West Germany between 1945 and the Late 1960s

Josef Reindl[1]

Department of Modern History
Ludwig-Maximilians-Universität München

This paper contrasts the development of the British and the West German electrical engineering industry in one of its main product fields, power plant equipment. It will be argued that the outstanding characteristic of British electrical engineering was companies' widespread collusive behavior, which created weak competitive pressure. Relying on sustained demand from a nationalized electric utility and protected against foreign competition, British large-scale electrical manufacturers neglected export markets and the development and production of consumer goods. The absence of strong competition also prevented an early reorganization of the industry and allowed inefficient companies to remain in the market. These factors, together with the general problems and shortcomings of British industry, which because they are well known will not be dealt with in this essay [Sked, 1987, pp. 3-39], contributed significantly to the decline of British electrical engineering in terms of market share (see Graph 1).

In terms of employment and output, the British and West German electrical engineering industries were of similar size, with West Germany overtaking the United Kingdom in the late 1950s. British productivity, measured in output per employee, was almost always higher than that in West Germany (see Table 1), because product fields with high capital requirements but low labor intensity, like cables, had a larger share of total electrical engineering output in the United Kingdom than in West Germany. There, labor-intensive products like domestic appliances or electrical measuring and controlling instruments for industry had a comparatively larger share in total output, leading to lower overall productivity.

These more labor-intensive product groups, however, were also those that exhibited the highest growth rates within electrical engineering. The stronger bias of total output toward these fast-growing fields provided West German electrical engineering with a structural advantage and contributed to its high growth rates.

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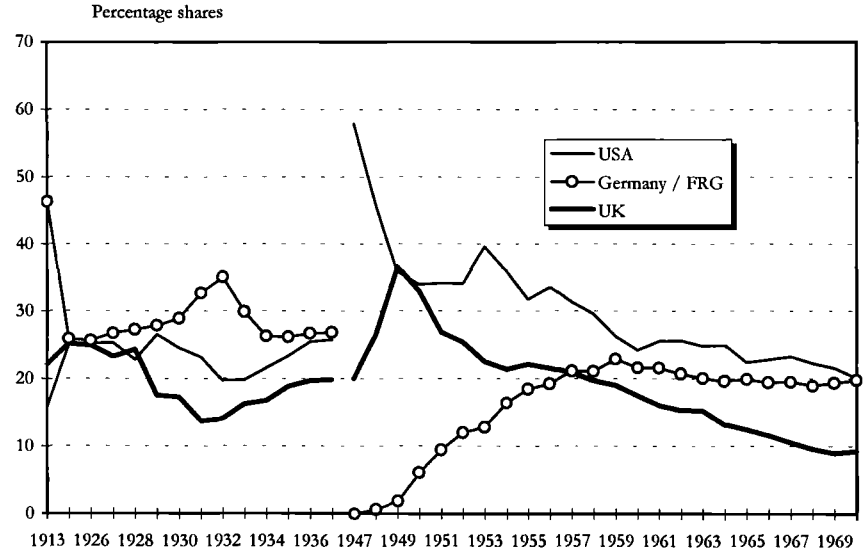
Table 1: *UK/FRG, Employment and Gross Output in Electrical Engineering, 1950-1970*

	Employment (thousands)		Gross Output (US $ million)	
	UK	FRG	UK	FRG
1950	507.6	252.4	1,605.2	855.2
1954	573.8	462.7	2,492.9	1,983.5
1958	652.6	696.7	3,573.0	3,553.5
1963	765.7	899.5	5,285.2	5,923.5
1968	753.7	903.7	6,606.8	7,882.4
1970	773.1	1,097.7	8,611.3	13,199.1

Compiled and calculated from: UK, Business Statistics Office, *Historical Record of the Census of Production 1907 to 1970*, London: Government Statistical Service 1979, pp. 32-33; Zentralverband der Elektrotechnischen Industrie, *Statistischer Bericht*, 1948/49 to 1970 Editions, Frankfurt/Main: ZVEI 1949-1971; Gross output in US $ calculated according to the exchange rates in: UN. Statistical Office. Department of Economic and Social Affairs, *Statistical Yearbook*, New York, Vol. 12 (1960), pp. 476-483; Vol. 16 (1964), pp. 552-555; Vol. 23 (1971), pp. 603-604.

Graph 1: *World Exports of Electrical Engineering Products*, 1913-1970*



*World Exports defined as accumulated exports of the twelve leading countries

Calculated from: Wirtschaftsgruppe Elektroindustrie, *Statistischer Bericht für die Elektroindustrie.* International Außenhandel, 1935, Berlin 1936; 1937, Berlin 1938; -, Weltelektroausfuhr, in: *Elektrotechnische Zeitschrift*, Vol. 56 (1935), p. 416; Vol. 58 (1937), p. 1380; Zentralverband der Deutschen Elektrotechnischen Industrie, *Die elektrotechnische Industrie und die Elektrisierung Deutschlands*, in: *Elektrotechnische Zeitschrift*, Vol. 51 (1930), p. 857; Zentralverband der Elektrotechnischen Industrie, *Statistischer Bericht* 1960, Frankfurt/Main (1961), p. 51; *Statistischer Bericht* 1966, Frankfurt/Main 1967, p. 45; *Statistischer Bericht* 1970, Frankfurt/Main 1971, p. 41; UN, *Yearbook of International Trade Statistics*, 1950-1971, New York 1951-1972.

The opposite was true for British electrical engineering, where a larger share of output was produced in "traditional" fields like cables and wires and a comparatively smaller part was in fast-growing sectors like electrical measuring and controlling instruments for industry.

Two more differences stand out. First, the largest British companies were smaller than their German counterparts: the combined sales of the six most important British companies was roughly as large as that of the three biggest West German firms. Company size is important in electrical engineering: the wide product range, the need to achieve output volumes large enough to benefit from economies of scale, the requirements for large sales and service networks, and the great importance of R&D were industry characteristics that rewarded size and gave West German companies an important competitive advantage (see Table 2). Second, although the leading British companies in the early 1950s paid significantly higher dividends than the German firms, this situation was reversed in 1958, and German dividends have remained higher since then (see Graph 2).

Table 2: *UK/FRG, Electrical Engineering Companies, Turnover in Thousand US $, 1959-67*

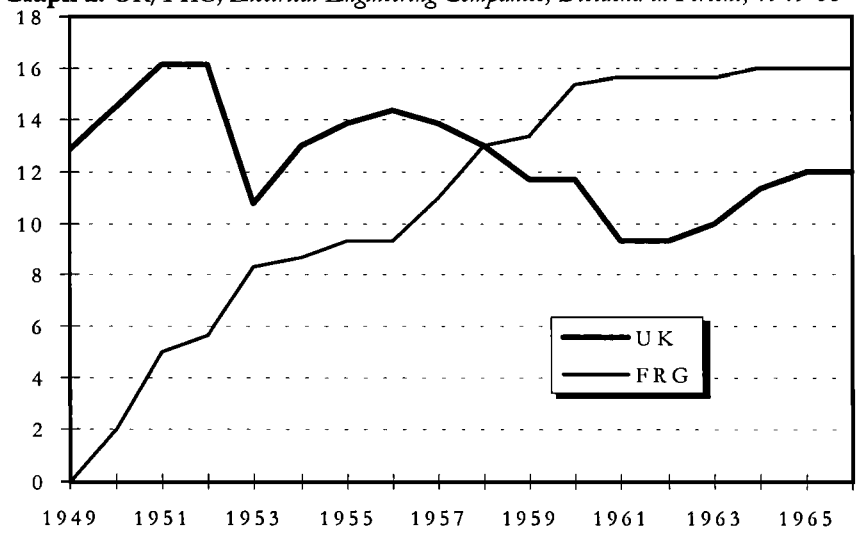
	1959	1961	1963	1965	1967
Associated Electrical Industries	583,628	598,324	595,454	712,468	727,972
British Insulated Callender's Cables	358,400	422,800	515,200	711,200	805,750
EMI	–	–	236,200	280,622	299,485
English Electric	487,200	544,247	585,281	685,549	1,131,774
General Electric Company	302,585	332,066	369,516	472,360	523,444
Plessey	–	–	270,200	293,069	403,435
Sum UK	1,731,813	1,897,437	2,571,851	3,155,268	3,891,860
AEG (1)	512,619	704,250	846,668	1,033,639	1,138,832
Robert Bosch	357,143	470,610	560,000	741,250	800,000
Siemens	866,190	1,194,750	1,462,500	1,794,750	1,984,250
Sum FRG	1,735,952	2,369,610	2,869,168	3,569,639	3,923,082

Compiled from: "The 100 Largest Foreign Industrial Companies," in: *Fortune* (August Issue), New York, 1960-1962; "The 200 Largest Foreign Industrial Companies," in: *Fortune* (August Issue), New York, 1963-1971.

UK and German Electrical Engineering Industries before 1945

As a consequence of World War I, German electrical engineering lost its strong position in the world market, of which it had held almost 50 percent in 1913. Benefiting from the removal of German competitors and enjoying large-scale demand from the extension of electricity supply during the 1920s, British manufacturers were able to catch up with the United States and Germany. This growth was accompanied by the promotion of cartels, because the British regarded cooperation among companies as important for successful competition in world markets. British entrepreneurs and politicians thereby followed the example of U.S. and German companies, which had dominated the world market before World War I by establishing cartels [Catterall, 1979, p. 242; Gribbin, 1978, p. 1].

Graph 2: *UK/FRG, Electrical Engineering Companies, Dividend in Percent, 1949-66**



*The values for the UK include the data for AEI, EE, and GEC, those for the FRG AEG, BBC and Siemens.

Calculated from the companies' annual reports in *Economist* und *Volkswirt.*

British electrical engineering did well even against the background of the world economic crisis in the 1930s, which took a mild course in Britain. Output declined only in 1931 and increased over the Depression period as a whole, with growth rates significantly above those of total industrial production. The main factor contributing to the growth of British electrical manufacturing was the construction of the National Grid, a network of large-scale power plants connected by high-voltage transmission lines, undertaken by the Central Electricity Board between 1927 and 1933 [British Association, 1938, pp. 253-55].

Protected against foreign competition and benefiting from the extension of electricity supply and rising demand from private households for both electricity and electrical appliances, British electrical engineering enjoyed a prosperous period in the 1930s, with growth rates exceeding even those of the 1920s. Electrical engineering had by far the highest growth rates of all industrial sectors, with an increase in output of 82 percent between 1929 and 1937 [H.W. Richardson, 1967, pp. 25-30, 73, 87].

The financial turmoil and the lack of capital in the early 1920s created substantial problems for German electrical engineering. With a substantial reduction in exports and depending mainly on power plant projects with high capital requirements, the industry in addition had to deal with the increased strength of its main competitors. After the stabilization of the German currency in 1924, German electric utilities, supported by the inflow of foreign capital, mainly from the United States, began to extend generating capacities on a large scale, which provided electrical engineering companies with substantial demand for their products [Oberlack, 1967, pp. 331-32].

The prosperity German electrical engineering had enjoyed from 1924 onward ended with the slowdown of industrial activity, the reduction in electricity consumption, and the sudden retreat of foreign capital in 1929, which prompted an immediate fall in demand for electrical and power plant equipment from both industry and electricity suppliers. Orders from the domestic market between 1929 and 1930 fell by 40 percent, which forced numerous electrical engineering companies out of business and created acute difficulties for others [*Elektrotechnische Zeitschrift,* 1933, p. 1204].

The overcapacity in electricity generation built up between 1924 and 1930 prevented power companies from ordering new plants even after the end of the Depression. The increase in production was mostly met with existing capacity; between 1933 and 1938 German electricity output more than doubled, while generating capacities increased only by 30 percent. In contrast to the situation in the 1920s, electrical manufacturers benefited very little from public orders for generating and transmission equipment in the 1930s. Large-scale orders came instead from all those industries that were expanded as a result of the National Socialist policy of autarky: mining, chemicals, metals, machine tools, and textiles [B.I.O.S., 1947, pp. 1-3, 10].

Armament led to a significant growth of electricity consumption during World War II, which in Britain was compensated for by raising the utilization of generating capacities from an average of 36 percent in 1938 to 50 percent in 1942. Consequently, investment in electric utilities during World War II was much lower than had been planned before 1939 [Hannah, 1979, pp. 296-99, 310]. In Germany, in contrast to the stagnation of power plant construction in the 1930s, generating capacities were extended between 1940 and 1944 by 30 percent. This substantial increase in power plant capacities and continued demand for industrial equipment and armaments production brought about a strong rise in electrical engineering output, which was estimated to have grown by 60 percent between 1939 and 1944 [United States Strategic Bombing Survey, 1976, pp. 46, 50].

The UK Power Plant Equipment Sector between 1945 and the Late 1960s

Damage to British power stations and the distribution network was small during World War II and the need for replacement therefore limited: in electricity supply only 2 percent of total assets were destroyed by German bombing raids. Despite the extension of generating capacities undertaken in the immediate postwar years, however, electricity output was still not sufficient, and the situation deteriorated further with the Korea Crisis of 1950, which necessitated repeated power cuts [Hannah, 1979, pp. 293, 310-17, 432-33].

Due to the expansion plans in electricity supply, manufacturers were expecting large and growing demand from the domestic market, which was protected against foreign competition. Substantial increases in sales during the late 1940s appeared to support this assumption, and all companies invested heavily to extend manufacturing facilities. This activity, together with large stocks and a high volume of work in progress, increased capital requirements and far exceeded the

available funds, compelling companies to raise money from external sources, mainly by obtaining bank credits and issuing new shares [*Electrical Review*, 1961, pp. 647-49].

The British turbo-generator market was dominated between the end of World War II and the mid-1960s by four companies: AEI, English Electric, General Electric Company, and C.A. Parsons. The small number of firms made cartel arrangements easy, and, based on the experience of the Depression, recovery, and war, British entrepreneurs and managers after 1945 regarded continued cooperation among firms as an important element of future success. Companies therefore continued to offer prices set by cartels and also coordinated bidding on orders, practices favored by high demand from the electricity supply industry in the late 1940s and early 1950s [Monopolies and Restrictive Practices Commission, 1957, pp. 5, 47-44, 64-68].

The existence of cartels in electrical engineering was also facilitated by the nationalization of the British electric power industry, which essentially left only one customer in the market for power plant equipment. The nationalized electric utility agreed with manufacturers that only close cooperation among companies guaranteed the success of British industry in both the domestic and export markets, and therefore no attempt was made to force manufacturers to abolish their cartels [Lord Citrine, 1967, p. 351].

The profitability of the domestic market for power plant equipment allowed British electrical engineering companies like Associated Electrical Engineering and English Electric to pay little attention to consumer goods. Profit margins in that segment were small due to the activities of specialized manufacturers like Thorn, EMI, Hoover, and Electrolux, and the possibilities for cartel arrangements were limited by the large number of producers and the wide variety of products. Repeated intervention by successive governments to restrict consumption by massive tax increases, leading to the well-known "stop-go cycles," contributed to the general instability of this sector and provided an additional factor that made consumer goods unattractive to Britain's large-scale electrical manufacturers. Although all heavy electrical manufacturers produced consumer goods – thereby fulfilling their claim to offer "everything electrical" – they did so with fairly limited effort: numerous designs and techniques had been retained unchanged since the prewar years, and advanced manufacturing methods were applied reluctantly and belatedly because of the low volume of output [Wray, 1957, pp. 7-8; Hatch, 1972, p. 354].

Beginning in the mid-1950s, overall business conditions in power plant equipment changed profoundly when demand for conventional plants fell due to the shift to nuclear power, which came about as a result of two developments. In 1952 and 1953 Parliamentary committees estimated that British coal output was not sufficient to satisfy the fuel demands of electricity suppliers. This at first gave oil high importance as a source of fuel, but assumptions about future oil supplies were deeply wrenched by the Suez Crisis, after which a comprehensive program for the use of nuclear energy was initiated. In March 1957 the Cabinet adopted the Atomic Energy Authority's proposal to commission 6,000 MW of generating capacity in nuclear power plants by 1965 [Hannah, 1982, pp. 168-81, 229].

Nuclear power became the centerpiece of British energy policy, and the expectation of large-scale orders for nineteen nuclear power plants, representing about two-thirds of total generating plant orders and 90 percent of estimated generating plant expenditures in the first half of the 1960s, prompted electrical manufacturers to shift resources toward the nuclear sector. Because of the government policy of developing nuclear weapons without relying on the United States, it was decided to focus on nuclear power plants capable of producing the atomic material necessary for military purposes. This prevented Britain from licensing U.S. power plant designs and instead induced manufacturers to develop their own nuclear power plant designs, which, as was later realized, put enormous strain on the companies' financial means. Investment in conventional power plants was reduced at the same time, exacerbating the problem of manufacturing overcapacity and leading to a rapid reduction of profit margins [*Electrical Review*, 1961, pp. 1001-2; Surrey and Walker, 1983, pp. 142-43; Hannah, 1982, p. 117].

Besides having to deal with a lower volume of orders for conventional power plants, manufacturers were also confronted with rising criticism of their cartel arrangements, especially after the 1956 publication of a report prepared by the Herbert Committee, which criticized the nationalized electric company for purchasing overpriced equipment from domestic manufacturers among whom there was no competition. The British Electrical and Allied Manufacturers Association (BEAMA) and the manufacturers protested against these findings and defended their pricing policy, but in the following year the newly established Monopolies and Restrictive Trade Practices Commission published its *Report on the Supply and Exports of Electrical and Allied Machinery and Plant.* The report disclosed how the companies jointly fixed minimum prices and argued that this practice protected less efficient producers, which were thereby enabled to remain on the market. The Commission therefore recommended the abolition of manufacturers' price agreements, a course that was again heavily criticized by electrical manufacturers and BEAMA [Monopolies and Restrictive Practices Commission, 1957, pp. 1-21; *The Economist*, 1957, pp. 745-46; 1959, pp. 1196-99].

Despite their protests, electrical manufacturers formally adhered to the recommendations of the Restrictive Trade Practices and Monopolies Commission, but they soon established other forms of cooperation. Cartels, although formally dissolved, continued to exist because companies adopted a system called "price leadership," under which the leading manufacturers set a price and "notified" all the other companies, which then voluntarily quoted the same price; no attempt was made to outlaw this practice [*Electrical Review*, 1961, pp. 1059-60; G.B. Richardson, 1966, p. 79].

It is important to note that prices were set at a level that allowed all manufacturers to remain in the market. Although the market leaders thereby relinquished the chance to strengthen their position by eliminating weak competitors, the price level chosen provided them with substantial profit margins [PRO, POWE 24, Committee of Inquiry into the Electricity Supply Industry, p. 445]. The high profitability of the domestic power plant equipment market allowed British manufacturers to neglect exports; only limited efforts were made to establish and strengthen sales networks abroad. In 1967, for example, Siemens had one hundred

forty-seven sales engineers in the United Kingdom, while there were only four sales engineers of English Electric in West Germany [*Electrical Engineering*, 1968, p. 43].

Based on the high targets for Britain's economic growth laid down in the National Plans, the nationalized electric utility substantially increased orders for power plant equipment in 1963 and 1964 to deal with the expected increase in the demand for electricity. The volume of orders in fact exceeded the capacities of British manufacturers, and generating equipment was therefore imported and temporarily exempted from import duties. But actual growth was much lower than planned, and in the mid-1960s the nationalized electric utility had to recognize that previous investment decisions had been too high. Orders were therefore reduced substantially, which profoundly changed business conditions for manufacturers of power plant equipment. Against the background of the general economic slowdown, the manufacturers found themselves in a situation in which their only customer was no longer placing orders. These circumstances led to substantial manufacturing overcapacity, even as high indebtedness severely restricted liquidity and profitability [*Electrical Review*, 1964, p. 400; *The Economist*, 1967, pp. 819-20; 1967, p. 556].

The only exception was GEC. Relieved from the burden of its turbo-generator business, which had been sold to C. A. Parsons in 1965, and benefiting from growing sales and profits in various other product fields, GEC put in a bid for AEI in 1967 [*Electrical Review*, 1967, p. 952]. After meeting initial resistance, GEC finally succeeded in persuading AEI's shareholders to accept the takeover. *The Economist* reported: "AEI failed not because of any weakness in its defence, but because of the incubus in its past. The bulk of its shareholders have had enough of bright promises... And when a company repeatedly disappoints its shareholders, they remember, and the harvest will be reaped..." [1967, p. 661].

Talks between GEC and English Electric followed, and in September 1968 the Board of Trade and Industrial Reorganization Corporation (IRC) approved a merger of the two companies. Jones and Marriott pointed to the high debt level of English Electric and commented: "This large debt element in the capital structure was one of the things that made English Electric vulnerable to a takeover" [Jones and Marriott, 1970, p. 290].

The West German Power Plant Equipment Sector between 1945 and the Late 1960s

During World War II damage to the German electricity supply system was fairly limited, although a rapid increase in output after 1945 was prevented by coal shortages and the breakdown of power plants due to the wartime lack of maintenance. The electrical engineering industry had lost almost all assets in its traditional center, Berlin, but after manufacturing facilities had been erected in West Germany, production picked up, and in 1950 the output of almost all sectors of electrical engineering exceeded prewar levels [*Elektro-Post*, 1951, p. 11].

The shortage of capital among electricity supply undertakings represented the most important obstacle to a rapid increase in the production of heavy electrical equipment. The capital provided by the European Recovery Program

and the state-run Kreditanstalt für Wiederaufbau (Reconstruction Finance Corporation) therefore assumed great importance. Electricity supply became the single most important West German economic sector, receiving credits with which about 45 percent of total investments were financed, thereby creating large demand from which electrical manufacturers benefited [*Elektrizitätswirtschaft*, 1953, p. 625].

The West German power plant equipment market differed from the British in three respects. First, because there were numerous electricity supply companies, both in private and in public ownership, there was not one but many customers. Second, a substantial share of power plant equipment was purchased by German industry, especially by coal, steel, and chemical companies. In contrast to the United Kingdom, where industry relied on public supply, German industrial companies traditionally generated electricity for their own requirements and sold surplus production to utility companies. In 1960, for instance, 35.7 percent of total electricity output in Germany was generated by industry [*Volkswirt*, 1960, p. 2687; Schäff, 1967, pp. 96-97].

West German manufacturers of power plant equipment therefore had to deal with a large number of customers, making price agreements much more difficult than in the United Kingdom. Moreover, supply undertakings traditionally allocated orders after competitive bidding among German manufacturers [*Elektriziätswirtschaft*, 1984, p. 475]. Competitive pressure also increased as a result of legislative developments that made it more difficult for West German than for British companies to establish cartels. First, the Allies implemented a policy of decartelization, intended to prevent any concentration of economic power in Germany: The Decartelization and Industrial Deconcentration Group (DIDEG) of the Allied High Commission looked for price and cartel-like agreements and repeatedly outlawed them [Bundesarchiv Koblenz, B 102, 192425, *Preisabsprachen in der Elektroschalterindustrie, 1948-1952*]. Second, in the early decades of the Federal Republic the architects of the *Soziale Marktwirtschaft* (social market economy) regarded competition as essential for economic prosperity. The *Gesetz gegen Wettbewerbsbeschränkungen* (Law against Rectrictions of Competition) was passed in 1957 despite heavy resistance from trade and industry, which wanted to maintain their right to form trade associations and cartels. Although the law as enacted was much more permissive toward the formation of cartels than was initially envisaged, the Federal Republic of the 1950s and 1960s nevertheless had one of the most restrictive pro-competition legislative regimes of all the Western countries. Together with other factors like low tariffs the legal environment contributed to ensure competitive pressure higher than in most other countries [Görgens, 1969, pp. 136-40, 144-48, 156-59; Nicholls, 1994, pp. 325, 332-36].

As in the United Kingdom, consumer goods were manufactured in West Germany by the large-scale electrical engineering companies as part of a broad and diversified product range and by specialty producers who concentrated exclusively on consumer goods. But in contrast to British producers, the large West German electrical engineering companies were also the most important manufacturers of electrical consumer goods: Robert Bosch in refrigerators and Siemens in washing machines. Siemens and AEG had produced consumer goods even before World War I and traditionally relied on a diversified production program, which helped

to compensate for temporary low sales in some business sectors. Bosch had moved into the consumer market during the interwar years to compensate for seasonal sales declines in the company's main field of activity, electrical automotive equipment [Feldenkirchen, 1995, pp. 42-43, 68; Herdt, 1986, pp. 36, 81].

Given their resources, large-scale manufacturers were able to invest heavily in the development and production of consumer goods and also in establishing the facilities necessary for exports. As a result, the output of West Germany's largest electrical consumer goods manufacturers was nearer to the minimum efficient scale required to employ the most advanced production technologies than was the case for UK producers, providing the German firms with an important competitive advantage [Owen, 1983, pp. 122-25, 131-35].

As in the United Kingdom, the supply of coal had important repercussions on West German electricity supply. Although in 1957 coal output was barely able to keep up with demand from electricity suppliers, the situation was reversed in 1958. Thereafter the West German coal industry had to deal with insufficient demand, which was in part the result of the increased use of oil for electricity generation. When it was recognized that this development threatened the position of the West German coal industry, two acts were passed in 1965 and 1966 that granted tax reductions and subsidies to supply undertakings that used coal for electricity generation or constructed new coal-fired power plants. Compared to the intent of the legislation, the overall effects of this policy were disappointing. While in 1950 more than three-quarters of the primary fuel consumed by electricity supply was coal, this share fell to one-third in 1967, as employment in the West German coal industry fell from 600,000 to 300,000 in the same period [*Volkswirt* 1967, p. 2783; Kruse, 1972, p. 244].

In the late 1950s West Germany began to employ nuclear power for electricity generation after Allied restrictions had been removed. But an earlier and more widespread use of nuclear plants was prevented not only by Allied restrictions, but also because of the support given to coal and coal-fired power plants. West German manufacturers could therefore rely on continually growing demand for conventional power plants, while the exclusive focus on the application of nuclear power for non-military purposes allowed Siemens and AEG to license light-water reactors from their traditional U.S. partners General Electric and Westinghouse. These reactors were of simple design and comparatively cheap, and both companies began to construct their own reactors based on U.S. designs, giving West German companies lower development costs than their U.K. counterparts [*Elektrizitätswirtschaft*, 1967, p. 375; Surrey and Walker, 1983, pp. 143-47].

Electrical engineering output expanded more slowly in the first half of the 1960s than it had in the 1950s, and the growth process ended in 1966, partly because of the raising of the discount rate by the *Bundesbank*, which was intended to counter inflationary pressure. This action contributed to the general slowdown of economic growth and falling demand from the domestic market. Rising interest rates and labor costs reduced the industry's profit margins and prompted companies to delay investment decisions. Heavy electrical engineering, as an important supplier of capital goods, was hit particularly hard by this downturn, and all companies suffered from falling sales and profits. In 1966 the volume of

orders from the domestic market was declining, and in 1967 total industrial investment in West German industry fell in comparison to the previous year for the first time since reconstruction [*Volkswirt*, 1966, p. 1049; 1967, p. 338, 1023; Giersch et al., 1992, pp. 144-45].

Conclusion

The outstanding difference between British and West German electrical engineering was the widespread collusive behavior of companies in the United Kingdom, which created low competitive pressure, particularly in the power plant equipment market. Large-scale manufacturers like AEI, English Electric, and GEC were protected in this market against foreign competitors and enjoyed large and stable profits. The small number of companies and the lack of pro-competition legislation made the formation of cartels easy. They were supported by the purchasing policy of the most important customer of power plant equipment, the nationalized electricity supply, which did not force manufacturers into competitive bidding.

This situation created low competitive pressure in the British power plant equipment market, allowing the survival of inefficient companies and also preventing an early reorganization of the industry. In contrast, the large number of regional utilities in West Germany relied in their purchasing policy on competitive bidding. Power plant equipment was also purchased by various other industrial sectors, because German industry traditionally generated a large share of the electricity required on its premises and sold surplus production to the utilities, whereas in the United Kingdom industries generally purchased electricity from the public supply. These differences contributed to higher market pressure on West German manufacturers, which forced them to rely on exports and on other product markets, including electric consumer durables.

In the United Kingdom high demand from the nationalized electric utility and the protection from foreign competition promised long-term prosperity in the power plant equipment market, allowing British large-scale electrical manufacturers to neglect the development of consumer goods and export markets. Although they aimed to produce "everything electrical" and offered an almost complete range of electrical consumer goods, the segment had little importance within their total business, whereas in West Germany the large-scale electrical manufacturers were also among the most important producers of consumer goods. The limited activities of Britain's electrical giants in consumer goods had important consequences for British electrical engineering as a whole. Diversified large-scale companies like Siemens and AEG were active in a variety of product fields. This diversity made them less vulnerable to a depression in one product sector and also gave them greater resources for R&D, a broader scope in financial operations, and a higher propensity to export.

Political decisions of British governments had important effects on general business conditions in the electrical engineering industry. First was the purchasing policy of the nationalized electricity supply and governments' pro-competition policy in the field of power plant equipment, even though they did not succeed in

abolishing restrictive trade practices. Second was the decision to concentrate on nuclear power for electricity generation, which led to a sharp decline in the demand for conventional power plants. Finally, the high importance given to the military application of nuclear power prompted the United Kingdom to develop its own nuclear power plant designs. In contrast, West German manufacturers could rely on licensing U.S. plants, resulting in low development and production costs.

It is important to emphasize that at least in short- and medium-term perspectives British electrical engineering companies acted quite rationally. Existing in a market with low competitive pressure, they were able to fulfill the aim of any enterprise in a market economy – to gain profits – quite successfully, at least during the 1950s. But this "atmosphere of cozy inefficiency" [Jones and Marriott, 1970] in British electrical engineering disappeared in the wake of profound changes in overall business conditions, and several companies were not in a position to adapt to the new situation. Seen from the perspective of economic theory, this outcome is not surprising: if competition is an essential factor for economic growth and if the market has to be regarded, at least in principle, as the most efficient instrument for the allocation of resources, the elimination of competition as the main "ingredient" of the market mechanism is bound to have consequences.

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