

# PROJECTING CAPITALISM

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A History of the  
Internationalization of  
the Construction Industry

Marc Linder

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## The Emergence of a World Construction Market and the Relative Decline of U.S. Firms

"We used to make 30% to 40% on a foreign job in the old days," said a U.S. construction man. "Now we make only 15% to 20% at the most." He smiled when he said it.<sup>1</sup>

### The Resurgence of European and Japanese Competition

During the early postwar period European and Japanese construction firms remained preoccupied with domestic reconstruction projects. Yet by early 1954, the U.S. construction industry's principal press organ, *Engineering News-Record* (*ENR*), was concerned enough to ask "Who forms our competition overseas?" In an unprecedented listing of "foreign firms with far flung construction operations in other lands," *ENR* cautioned that U.S. firms' operations were "being matched" by European competitors' "return to a pre-war pattern." It singled out German firms' renewal of contacts in South America and the Middle East, especially Turkey.<sup>2</sup> A year earlier the journal had editorially prepared U.S. firms for the filling of the immediate postwar international vacuum by observing that some opportunities would inevitably disappear when the U.S. overseas military expansion that had fueled them eventually slowed down. Even in 1953, *ENR* admonished the trade that once the protective shield of the U.S. war machine was removed, international competition would intensify especially since some European engineering-contracting firms had been "our equals or betters all along."<sup>3</sup>

In spite of *ENR*'s claim that by the mid-1950s the "international operations of foreign construction firms represent[ed] a return to a pre-war pattern,"<sup>4</sup> the patterns of postwar competition were not identical with those that had prevailed earlier in the century. In part the new configurations were bound up with the fact that the once-dominant British firms lacked "the capital resources to speculate in overseas constructional work."<sup>5</sup> Venerable international operators such as Cleveland Bridge and Dorman, Long continued to build bridges in Turkey, Iraq, Zambia, Brazil, and elsewhere separately and jointly until Trafalgar House acquired Cleveland Bridge in 1970 and Dorman in 1982.<sup>6</sup> And other British firms

<sup>1</sup>"U.S. Contractors Go Global," *BW*, Apr. 14, 1956, at 139, 142.

<sup>2</sup>"Who Forms Our Competition Overseas?" *ENR*, Mar. 11, 1954, at 52.

<sup>3</sup>"The Export of U.S. Construction," *ENR*, July 30, 1953, at 156.

<sup>4</sup>"Who Forms Our Competition Overseas?" at 52.

<sup>5</sup>J. Colclough, *The Construction Industry in Great Britain* 140 (1965).

<sup>6</sup>"Overseas Constructional Work by British Contractors in 1956-57," 173 *BTJ* 554, 555 (1957); "British Construction Work Overseas 1967-68," 195 *BTJ* 980, 981 (1968); "British Construction Work Overseas 1969-70: New Record," 199 *BTJ* 838, 842 (1970); 2 *MintM* 1991, at 4259 (1991); Trafalgar House Public Limited Company, "Background Information" at 5 (July 1993).

continued building in British Commonwealth countries—ranging from copper mines in Africa, to apartment houses in Canada, and a high school in the Bahamas. Indeed, in the mid-1950s, Commonwealth markets, in which British firms “have special advantages,” still accounted for more than 70 per cent of the work that they performed and new contracts that they obtained.<sup>7</sup>

Supported by British annual expenditures of £150 million on overseas development, however, British companies also expanded to new areas to carry on new types of construction. By 1960, six firms already accounted for half of total British overseas construction, several even performing more work abroad than in Britain.<sup>8</sup> Moreover, firms that before World War II had never or only marginally operated outside the United Kingdom became increasingly dependent on the world market. Indeed, unlike the largest U.S. firms, four of Britain’s five largest construction firms—Wimpey, Costain, Taylor Woodrow, and Laing—first became large-scale enterprises during the interwar period by undertaking domestic speculative housebuilding.<sup>9</sup> The histories of representative firms illustrate this internationalization process.

From its founding in 1880 until the 1930s, George Wimpey had specialized in road construction and private housebuilding. Rechristened Wimpey 680 General Construction Company, Royal Engineers, the firm received so much work building military airfields in Britain during World War II that it “became almost embarrassing.”<sup>10</sup> When a high-ranking official in the Air Ministry with considerable knowledge of desert road and airfield construction became a Wimpey director in 1946, the firm began orienting itself toward the Middle East. After having created contacts with the Anglo-Iranian Oil Company, which was majority-owned by the British government, by performing civil engineering work on the oil company’s refinery in Britain in 1947, Wimpey secured its first overseas contract to build the infrastructure for oilfields in Kuwait. The next year another large British oil company afforded it the same kind of opportunity in Borneo. Wimpey then became junior partner to Bechtel in building a pipeline from Iraq to Syria and carrying out the harbor and housing work for the very large British refinery at Aden. Wimpey significantly enhanced its international capacities by finally acquiring the expertise to perform mechanical and electrical construction for oil refineries, which Anglo-Iranian hired it to do at a British facility in 1950, although it continued to specialize in more conventional infrastructure for oil-related projects in the Middle East, New Guinea, and the West Indies. Like other Western companies, Wimpey also built its share of World Bank-financed hydroelectric dams in South America. During the early postwar period, Wimpey also engaged in considerable traditional construction in British Commonwealth countries such as a skyscraper in Hong Kong and a university in Ghana. An unusual deviation from the standard international process was the firm’s diversification into speculative housebuilding in Canada in the mid-1950s.<sup>11</sup>

Another large British firm, Costain, which was founded in 1865, had not performed any major overseas projects until it participated in the building of the Trans-Iranian Railway in 1935; during World War II it then established offices in

<sup>7</sup>“Overseas Constructional Work by British Firms in 1955-56 Amounted to £87 Million,” 171 *BTJ* 636 (1956); “British Construction Work Overseas in 1959-60 Valued at £124m,” 179 *BTJ* 513 (quotation), 516 (1960); “British Construction Work Overseas 1971/72” at 296, 298.

<sup>8</sup>“British Construction Work Overseas in 1959-60 Valued at £124 m” at 514, 516.

<sup>9</sup>Michael Ball, *Housing Policy and Economic Power: The Political Economy of Owner Occupation* 34 (1983).

<sup>10</sup>Valerie White, *Wimpey: The First Hundred Years* 1-20 (1980) (quotation at 20).

<sup>11</sup>White, *Wimpey* at 28-38. Wimpey’s inferior international position vis-à-vis Bechtel was reflected on the anecdotal level by an incident in 1952 when Bechtel reserved rooms at the Waldorf Astoria Hotel in New York for several Wimpey officials who, because of currency restrictions, could barely pay the bill.

Turkey, Nigeria, and Rhodesia. Yet from the 1950s on, impelled to intensify its internationalization by a decline in domestic construction, Costain was doing at least two-fifths of its work abroad. A focal point of its projects was British colonial Africa, where Costain built, for example, roads in Nigeria and parts of Zambia University.<sup>12</sup> Taylor Woodrow was constrained to undertake industrial and commercial projects in British East and West Africa, Afghanistan, Pakistan, and Guyana for the opposite reason: it "had grown so large that it needed to expand overseas."<sup>13</sup> John Laing, another large speculative housebuilding firm during the interwar years and wartime airfield builder that had never engaged in international operations since its founding in 1848, initially pursued a traditional Commonwealth path when it opened a branch in South Africa in 1947 to perform building, civil engineering, and housebuilding, soon followed by road and housebuilding in Rhodesia, Zambia, and Canada. By 1951, it had expanded beyond the Commonwealth into Libya and Syria to build a power plant and harbor works. In the 1960s it established large operations in Spain and the Middle East.<sup>14</sup>

The quantitative evolution of postwar British international construction is presented in table 9.1. In the decade from 1955, when the British Ministry of Works first began surveying contractors, to 1965, the value of work performed by British firms overseas more than doubled—from £70 million to £160 million.<sup>15</sup> Thus by the late 1950s, they were annually putting in place in excess of \$300 million worth of construction abroad. In addition to performing projects throughout the British Commonwealth, they recorded notable gains in Iran and Brazil, where U.S. firms were also active.<sup>16</sup>

By 1950, despite foreign exchange restrictions and the intensive reconstruction requirements in West Germany, Philipp Holzmann had already received orders from Turkey, Iraq, Greece, and Pakistan. The same year the German firm Julius Berger also resumed overseas irrigation work in Egypt and the Sudan.<sup>17</sup> In the 1950s, Hochtief and Holzmann built roads, harbors, dams, tunnels, pipelines, copper refineries, and nuclear power plants in Turkey, Iraq, Peru, Egypt, India, Chile, Paraguay, Sierra Leone, Portuguese Africa, and elsewhere.<sup>18</sup> During the 1950s, German firms' overseas orders averaged

<sup>12</sup>Costain Group PLC, "Company Milestones" (Sept. 30, 1992); Hedley Smyth, *Property Companies and the Construction Industry in Britain* 125-26, 128 (1985); "British Construction Work Overseas, 1965-1966" at 875.

<sup>13</sup>"British Construction Work Overseas 1966-67," 193 *BTJ* 916-18 (1967); "Taylor Woodrow," in 1 *IDCH* 590 (Thomas Derdak ed., 1988) (quotation).

<sup>14</sup>"British Construction Work Overseas 1967-68" at 980-81; Roy Coad, *Laing: The Biography of Sir John W. Laing, C.B.E. (1879-1978)*, at 19, 81, 97-116, 152-60, 184-85 (1992 [1979]).

<sup>15</sup>"How Overseas Constructional Work Helps Export Drive," 169 *BTJ* 937 (1955). The annual data refer to the twelve months ending March 31. Unlike the survey data collected by *ENR*, the British data encompass the value of work done, of new contracts obtained, and of work outstanding. The data on the value of work done show greater continuity than those on contracts obtained. A third of a century later it remains true that "even the United States with their extensive statistical services do not regularly collect statistics similar to those collected here." "British Construction Work Overseas in 1959-60" at 513. The table stops with 1982 because the data ceased to be "directly comparable" when the U.K. Department of Environment changed its questionnaire "at the request of the Export Group for the Constructional Industries." "Building Up—to £3.8 bn," 12 *BB* 456, 457 (1983).

<sup>16</sup>"British Contractors Boost Overseas Business," *ENR*, Nov. 19, 1959, at 188; "British Firm Gets Contract for Large Brazilian Dam," *ENR*, June 26, 1958, at 52 (Wimpey).

<sup>17</sup>Kurt Hecker, in 1849-1974 *H[olzmann]. Ansprachen beim Festakt anlässlich des 125jährigen Bestehens der Firma Philipp Holzmann* 1, 3 (1974) (untitled address); Philipp Holzmann Aktiengesellschaft, *Das umfassende Leistungsangebot der Holzmann-Gruppe* 38 (1992); "Billfinger & Berger Bau A.G.," in 1 *IDCH* 560, 561 (Thomas Derdak ed., 1988).

<sup>18</sup>See e.g., *Samsun Harbour in Turkey: A Joint Enterprise of the Companies Rar-Insat Turk, Philipp Holzmann, Hochtief* (n.d. [1961]); "Building Iraqi Dam Has an International Operation," *IC*, Oct. 1962, at 2; "South-East Asia's Largest Pipeline," *id.*, Dec. 1962, at 20; "Germany's Hochtief Builds High and Deep Everywhere," *ENR*, Nov. 3, 1966, at 40; "Tunnel Under the Nile," *IC*, Nov. 1968, at 17; "Peruvian Harbour Development," *id.*, July 1969, at 8; C. Tupholme, "Cabora Bassa," *id.*, Apr. 1970, at 24;

**Table 9.1**  
**British Construction Firms' Overseas Contracts, 1955-82**

Year	New Contracts (£ million)	Index (1955=100)	Work Done (£ million)	Index (1955=100)
1955	72	100	70	100
1956	109	151	87	124
1957	102	142	102	146
1958	119	165	114	163
1959	114	158	120	171
1960	131	182	124	177
1961	98	136	135	193
1962	122	169	113	161
1963	147	204	111	159
1964	118	164	123	176
1965	198	275	160	229
1966	190	264	169	241
1967	170	236	172	246
1968	232	322	182	260
1969	234	325	204	291
1970	341	474	220	314
1971	311	432	274	391
1972	300	417	320	457
1973	346	481	317	453
1974	554	769	362	517
1975	1084	1506	457	653
1976	1280	1778	857	1224
1977	1588	2206	1250	1786
1978	1676	2328	1597	2281
1979	1385	1924	1678	2397
1980	1385	1924	1384	1977
1981	1366	1897	1271	1816
1982	1870	2597	1478	2111

Source: 171 *BTJ* 636 (1956); 173 *BTJ* 554 (1957); 175 *BTJ* 515 (1958); 179 *BTJ* 514 (1960); 183 *BTJ* 549 (1962); 187 *BTJ* 593 (1964); 191 *BTJ* 877 (1966); 195 *BTJ* 980 (1968); 199 *BTJ* 838 (1970); 9 *TI* 294 (1972); 17 *TI* 97 (1974); 33 *TI* 128 (1978); 37 *TI* 359 (1979); 9 *BB* 257 (1982)

somewhat more than 200 million marks annually. By the first half of the 1960s, in part as a result of the integration of the firms into their government's foreign development aid programs in Africa and Asia, annual orders rose to 331 million marks; orders rose again by more than double to 777 million marks during the latter half of the decade.<sup>19</sup>

The new postwar political-economic constellation of forces required French firms to reorient themselves geographically. For Batignolles, for example, it was no longer possible to profit from the "privileged situation" which it had enjoyed for sixty years in central and eastern Europe. Although the firm was able to build ports, airports, and factories in French colonial Africa, it quickly recognized that large projects would require it to associate with other firms.<sup>20</sup> French firms, in addition to maintaining a stranglehold on markets in the former and remaining French colonies, especially those in Africa, were competitive enough to invade such long-time U.S. strongholds as Cuba.<sup>21</sup> And several Italian firms, impelled by the decline in construction of domestic hydroelectric plants once the postwar reconstruction had been completed, began using the expertise that they had accumulated in the Alps to build dams in Third World countries in the late 1950s.<sup>22</sup> In particular Impresit (Imprese Italiane all' Estero), founded by Fiat in 1929 to promote Italian overseas enterprise, separately and as the Impregilo consortium with Girola and Lodigiano, built the Kariba Dam in Rhodesia and the Volta River Dam in Ghana in the 1950s and 1960s.<sup>23</sup>

The Danish firm Christiani & Nielsen, which had been internationally oriented almost since its formation in 1904, resumed its overseas participation almost immediately after the war. Indeed, its subsidiary in Brazil had been building there almost continuously since World War I. In the late 1940s the company constructed an important pier in Rio de Janeiro as well as the world's largest football stadium. In a joint venture with British firms, it began work on the Owen Falls hydroelectric project in 1949; the next year it constructed an airfield in Burma.<sup>24</sup>

No Japanese construction firm, however, was awarded an overseas contract—except for projects carried out within the framework of war reparation and economic cooperation programs such as hydroelectric projects, tunnels, and hotels in Burma, South Vietnam, Indonesia and the Philippines—until 1961. Japanese firms were still merely "on the verge of entering the world market."<sup>25</sup> Only with the end of the domestic building boom in the mid-1960s, did large

<sup>19</sup>"Cabora-Bassa, World's Greatest Hydro-Electric Scheme," *id.*, Jan. 1975, at 2.

<sup>19</sup>Karin Behring, Erich Gluch, & Volker Rußig, *Entwicklungstendenzen im deutschen Auslandsbau*, tab. 2.1 at 25 (1982); Hauptverband der Deutschen Bauindustrie, *BJ 1975* at 51; Erich Gluch & Jürgen Riedel, "The Federal Republic of Germany," in *The Global Construction Industry: Strategies for Entry, Growth and Survival* 120-23 (W. Strassmann & Jill Wells ed., 1988).

<sup>20</sup>Société de Construction des Batignolles, *L'Oeuvre d'un siècle 1846-1946*, at 86, 87 (1952).

<sup>21</sup>27 *CE* 899 (1957) (Société des Grandes Travaux de Marseille builds tunnel in Havana).

<sup>22</sup>"Italy," *IC*, Sept. 1973, at 55, 65-66 (foreign contract awards peaked in 1968 at £308 million, declining to only £35 million by 1971); Aldo Norsa, "Italy," in *The Global Construction Industry* at 86, 89-90.

<sup>23</sup>See James Moxon, *Volta: Man's Greatest Lake* 117-19 (1969); H. Olivier, *Great Dams in Southern Africa* 98 (n.d. [1976]); "Impreglio Power Push Dominates World Market," *ENR*, June 17, 1982, at 74; Norsa, "Italy" at 89, 96.

<sup>24</sup>Christiani & Nielsen, *75 Years of Civil Engineering 1904-1979*, at 22, 58, 60, 69, 87 (Leif Nilsen ed., 1979).

<sup>25</sup>"Japanese Builders Eye the World Market," *ENR*, May 4, 1961, at 40 (mentioning however a steel mill that a Japanese firm began building in Brazil in 1958). See also "Japanese Push to Enter Australian Construction," *ENR*, Apr. 17, 1958, at 92; "Kajima, the Versatile Giant of Japanese Construction," *ENR*, Apr. 14, 1966, at 44; Yasuyuki Hippo & Saburo Tamura, "Japan," in *The Global Construction Industry* at 59, 61-62.

Japanese firms feel pressure to enter the world market.<sup>26</sup> By the early 1970s, Japanese firms, which had just begun to expand their international scope beyond Asia, were still only marginally active overseas.<sup>27</sup>

As a result of this lagged re-internationalization of non-U.S. construction firms, by 1956, when European firms were just beginning to compete with U.S. firms, the latter were estimated to have an annual overseas volume of \$750 million to \$1 billion, while British, German, and Italian firms combined accounted for about \$660 million.<sup>28</sup> The situation was little changed a decade later: "In the late 1960s most international construction was still American."<sup>29</sup>

Even in retrospect, some European firms appeared uncomfortable in explaining what had propelled them overseas. Hochtief, which as late as the 1960s accounted for more than half of all construction work performed by West German firms abroad,<sup>30</sup> could articulate no more plausible motivation than "that human personality can be developed and liberated by work in a distant clime under unusual conditions, by a flight from the secure conditions of employment at home and from the dangers of a society where greater perfectionism was ever being sought, and by confrontation with people who had other aims in life and practiced other cultures." Only as an afterthought did the in-house company history add that it was also "felt that...money could be made abroad even if at considerable risk."<sup>31</sup>

By the 1960s, the largest construction firms in Britain and Germany were already clearly integrated into the world market. In 1968, overseas projects accounted for one-seventh of the turnover of Britain's largest firm, George Wimpey; the international shares for John Laing and Taylor Woodrow, were similar, while Costain's hovered at two-fifths.<sup>32</sup> That pattern still embraced quasi-monopoly colonial markets. Hochtief, for example, complained that although Germany and France contributed equal amounts to a special European Common Market fund for the development of former colonies, German construction firms were almost completely excluded from the former French colonies in Africa. Nevertheless, by 1965 Hochtief had done \$300 million worth of overseas work since the end of World War II, and international projects accounted for one-quarter of its total annual income.<sup>33</sup> From 1960 to 1969, the aggregate annual value of West German firms' new orders from abroad rose almost eight-fold to 1.5 billion marks, which was, however, still only one-twelfth of the U.S. volume.<sup>34</sup>

Once non-U.S. firms became integrated into the world market, they were most competitive in the traditional building and civil engineering infrastructural

<sup>26</sup>"Japan Scrambles for Overseas Work," *ENR*, Apr. 29, 1965, at 77; "Japan Flexes Its Muscle Abroad," *ENR*, Dec. 11, 1969, at 36.

<sup>27</sup>Basil Caplan, "The Japanese Construction Industry: Part 1: Construction Activity," *IC*, June 1969, at 54, 60; "Japan," *id.*, June 1974, at 34, 51 (in 1971 overseas contracts awarded to Japanese firms amounted to only £70 million); Fumio Hasegawa, *Built by Japan: Competitive Strategies of the Japanese Construction Industry* 82 (1988); Peter Rimmer, "Japanese Construction Contractors and the Australian States: Another Round of Interstate Rivalry," 12 *IJURR* 404, 408 (1988).

<sup>28</sup>"Competition Tightens Overseas," *ENR*, Nov. 14, 1957, at 25. According to another estimate, U.S. firms carried out £250 million of work overseas in 1956 compared with about £90 by British firms. "Overseas Construction Work by British Contractors in 1956-57" at 554.

<sup>29</sup>W. Strassmann, "The United States" in *The Global Construction Industry*, at 22, 23.

<sup>30</sup>Heiner Radzio, *Die Aufgabe heisst Bauen: 110 Jahre Hochtief* 32 (1985).

<sup>31</sup>*Hochtief 1875-1975*, at 4 (n.d. [ca. 1975]).

<sup>32</sup>Basil Caplan, "The U.K. Construction Industry: Part 1: Construction Activity," *IC*, Oct. 1969, at 49, 54, 59.

<sup>33</sup>"Germany's Hochtief" at 43, 49.

<sup>34</sup>*BJ* 1975 at 51.

projects that required limited transfers of advanced technology.<sup>35</sup> Yet as early as 1962, U.S. firms acknowledged that the U.S. share of international construction volume was declining, and by 1970 warnings were issued that non-U.S. firms were closing the technology gap, leading to lower profits abroad for U.S. firms.<sup>36</sup> And during the Vietnam War, European firms saw U.S. companies' preoccupation with military construction in South East Asia and the concomitant reduction of U.S. government financing for construction elsewhere in the Third World as lessening the U.S. companies' competitiveness.<sup>37</sup>

Despite the large strides taken towards the creation of an international construction market, the industry was still characterized by a lower degree of integration and competition than that prevailing in numerous manufacturing industries. This difference was expressed most clearly in the relative lack of direct competition or transnational acquisitions among American, Western European, and Japanese construction firms in one another's domestic markets. When Taylor Woodrow, for example, undertook a £2 million office building project in Paris in the mid-1960s, it was the first of its kind since World War II.<sup>38</sup> Costain's construction of a food depot in Belgium at the same time was the first contract awarded by a Belgian company to a British firm for a project in Belgium.<sup>39</sup> Not only was there no "European construction market" in the 1960s,<sup>40</sup> but some authorities asserted that building standards and methods varied so greatly from country to country "that general building must inevitably remain outside the field of international enterprise."<sup>41</sup> Foreign holdings as a share of West German construction corporations' stock were as late as 1970 only one-third of the average for all West German industry (7.6 per cent and 21.7 per cent respectively).<sup>42</sup>

At the beginning of the 1970s, the United Nations reported that:

Overseas contracting has grown significantly in the postwar period, and although the international market is still dominated by United States contractors (1 to 1.5 billion dollars of overseas construction a year), firms from France and the United Kingdom (\$400 million each)...Italy (\$300 million), the Federal Republic of Germany (\$100 million) and Japan (\$100 million) are increasingly active. Most of this work consists of civil engineering projects in developing countries. For western Europe as a whole overseas construction is estimated at between 1 and 3 per cent of gross construction output....<sup>43</sup>

Thus by 1972, British construction firms did £320 million of work overseas—twice the amount performed in 1965 (table 9.1). Yet of the total value of new foreign contracts that they obtained from 1968 to 1982, all of Europe accounted for only 2 to 17 per cent, while the European Economic Community countries accounted

<sup>35</sup>Strassmann, "The United States" at 34

<sup>36</sup>Gerald O'Connor, "Foreign Competition in Overseas Construction," *CE*, Feb. 1962, at 56 (official of Raymond International, also claiming without evidence that U.S. firms' overseas volume was declining absolutely); "Foreign Competitors Winning Race for Overseas Work," *ENR*, Nov. 5, 1970, at 85.

<sup>37</sup>"Germany's Hochtief" at 49.

<sup>38</sup>"British Construction Work Overseas, 1965-1966," 191 *BTJ* 874 (1966).

<sup>39</sup>"British Construction Work Overseas 1966-67" at 916.

<sup>40</sup>Götz Hohenstein, "Konzentration in der Bauwirtschaft," *FAZ*, May 11, 1963, at 5, col. 5 (business section).

<sup>41</sup>Colclough, *The Construction Industry of Great Britain* at 142.

<sup>42</sup>See "Ausländische Beteiligungen an Unternehmen in der Bundesrepublik," 24 *MDB* 28, 36-38 (Jan. 1972). See also Hohenstein, "Konzentration in der Bauwirtschaft."

<sup>43</sup>U.N., Secretariat of the Economic Commission for Europe, *Economic Survey of Europe in 1971*, pt. I: *The European Economy from the 1950s to the 1970s*, at 62 (1972). See also Roland Neo, *International Construction Contracting: A Critical Investigation into Certain Aspects of Financing, Capital Planning and Cash Flow Effects*, tab. 2.1 at 38, 59-60 (1975) (U.S. firms accounted for two-thirds of world market excluding projects undertaken by socialist countries [without accurate source for U.S.]).

for only 0.5 per cent to 3 per cent.<sup>44</sup>

Similarly, only three per cent of the foreign contract value awarded to West German contractors in 1974 derived from European countries—one per cent from within the EEC and even less from North America; 95 per cent was issued for work in African and Asian (including Middle Eastern) countries.<sup>45</sup> Among those firms performing intra-European construction, Christiani & Nielsen occupied a leading position based on its specialized expertise. It built bridges, marine terminals, submerged tunnels, and motorways in West Germany, Britain, Belgium, and Portugal.<sup>46</sup>

As late as 1973, European and Japanese construction firms faced such obstacles to overcoming U.S. industrial firms' preference for U.S. construction firms that the United States and Canada accounted for only a twentieth of the world's export markets for construction firms.<sup>47</sup> That in the 1960s one of Britain's largest firms, Taylor Woodrow, acquired a 49 per cent interest in a medium-size regional construction company in the United States constituted a minor exception.<sup>48</sup> Although U.S. firms did perform industrial, refinery, and pipeline construction in Western Europe in the 1960s and 1970s, they complained of politically inspired obstacles. The U.S. National Export Expansion Council charged that access to these markets was hampered by the fact that countries such as France and Italy maintained government-subsidized constructors, effectively excluding U.S. firms.<sup>49</sup>

Sheltered national construction markets in the advanced capitalist countries of Western Europe have nevertheless not been the product of domestic monopoly in the same way in which historically national manufacturing monopolies, in reacting to intensified world market competition, generated protective tariffs.<sup>50</sup> Other reasons adduced to account for lagging interpenetration among construction firms in EEC countries were heterogeneous building standards and construction methods; moreover, in order to avoid the risks of alien labor relations and legal systems, firms wishing to exploit patents or industrialized building methods were said to prefer licensing arrangements to establishing subsidiaries.<sup>51</sup>

A much different structure of competition evolved in the less developed countries where indigenous construction firms only gradually began to develop the capacity to execute the work on technologically more complex projects.<sup>52</sup> For

<sup>44</sup>Calculated according to data in *FT*, July 28, 1976, at 20; and *id.*, Nov. 15, 1976, at 25; "British Construction Work Overseas 1973/74," 17 *TI* 96, 97 (1974); "Going Up—British Building Business Overseas," 37 *TI* 358, 359 (1979); "Building Up: The Work of UK Construction Firms Overseas," 9 *BB* 256, 257 (1982); Smith, *Property Companies and the Construction Industry in Britain*, tab. 7.1 at 202.

<sup>45</sup>*BJ* 1975 at 51. See also *WSJ*, Apr. 25, 1975, at 21; Neo, *International Construction Contracting* at 42-43, 54 (70 per cent of Western European contractors' foreign work in 1972 took place in developing countries [without a source]).

<sup>46</sup>Christiani & Nielsen, *75 Years* at 37-38, 44, 50, 92, 97.

<sup>47</sup>Kenneth Brooks, "The U.S. Engineering-Construction Industry: Is It Ready for a Building Boom?" *CW*, Mar. 21, 1973, at 33, 38.

<sup>48</sup>"World Competition Grows Sharper," *ENR*, Nov. 1, 1962, at 61; Caplan, "The U.K. Construction Industry" at 59. The company, Blitman Construction Corp. of New York, ranked 119th in contracts awarded in 1968. "Top 400," *ENR*, Apr. 10, 1969, at 70, 76.

<sup>49</sup>See "The 400," *ENR*, Apr. 10, 1969, at 70; "The 400," *ENR*, Apr. 9, 1970, at 42; National Export Expansion Council, *Report of the Industry Committee on Engineering and Construction Services* 47 (1970).

<sup>50</sup>See e.g., Rudolf Hilferding, *Das Finanzkapital: Eine Studie über die jüngste Entwicklung des Kapitalismus* 406-20 (1968 [1910]).

<sup>51</sup>Colclough, *Construction Industry in Great Britain* at 142.

<sup>52</sup>See Derek Miles & Richard Neale, *Building for Tomorrow: International Experience in Construction Industry Development* 63 (ILO, 1991) ("most...international projects undertaken by Singapore firms were residential and commercial buildings"); A. Zahlan, *The Arab Construction Industry* (1984); Peter Cassimatis, *Construction and Economic Development* (NTIS, 1975); Edward Jaycox & Clifford Hardy, "Domestic Construction Industries in Developing Countries," *FD*, Mar. 1975, 21-24, 46; E. Howenstine,

U.S. construction firms, even prior to the Middle Eastern construction boom, the impoverished rather than the enriched nations constituted the chief overseas market. From 1960 to 1968, three-fifths of U.S. constructors' repatriated profits stemmed from Third World countries and only one-fourth from Western Europe. In 1968 for example, Iran, where the shah displayed a penchant for spectacularly gigantic projects of comparatively little economic value, alone accounted for one-tenth of U.S. construction companies' repatriated profits. In contrast, approximately three-quarters to four-fifths of U.S. foreign direct investment in manufacturing were located in Western Europe and Canada during the 1960s.<sup>53</sup>

The prospect of numerous large and very profitable projects in the Third World drove U.S., Western European, and Japanese construction firms into a phase of intense competition, which led in turn to the intercession of individual national governments to create the best possible conditions for "their" firms.<sup>54</sup> This "growing importance of political and financial expertise to big engineering outfits that operate on a global scale" is most clearly reflected in the recruitment by Bechtel of such former high-ranking government officials as the Secretary of Labor and Secretary of the Treasury, George Shultz (who also joined the board of directors at J. P. Morgan & Co.), the Secretary of Health, Education, and Welfare, Caspar Weinberger, the CIA director, Richard Helms, and the president of the U.S. Export-Import Bank (which provides loans for many of the Third World projects for which Bechtel competes), John Moore.<sup>55</sup>

Despite the reemergence of Shultz and Weinberger as Secretary of State and Secretary of Defense respectively in the Reagan Administration, one specialist in international construction has asserted, without evidence, that a "coherent government-military-industrial complex for exploiting the rest of the world is not their...ideology. [T]hese former (and future) businessmen in government believe in sink-or-swim market place individualism. Heading a government agency to them is simply heading a different sort of enterprise that has adversarial relations with other enterprises."<sup>56</sup> Yet detailed studies suggest that such state-firm personnel interpenetration has directly and significantly benefited Bechtel.<sup>57</sup>

A final type of international construction that multinational firms perceived as constricting rather than expanding their world market was the more than 3,000 projects that the Soviet Union carried out in the Third World during the postwar period. The best known of these was the mammoth Aswan High Dam in Egypt in

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"Social Considerations in Promoting Construction Work in Developing Countries," *CRev*, June 1972, at 4; Charles Cockburn, *Construction in Overseas Development* (1970); W. Strassmann, "Construction Productivity and Employment in Developing Countries," 101 *ILR* 503-18 (1970); *idem*, "The Construction Sector in Economic Development," 18 *SJPE* 391-409 (1970); U.N. Industrial Development Organization, *UNIDO Monographs on Industrial Development, Industrialization of Developing Countries: Problems and Prospects*, No. 2: *Construction Industry* (1969).

<sup>53</sup>National Export Expansion Council, *Report* at 58 and Exhibit 3-2 at 61 (citing unpublished data furnished by the U.S. Bureau of Economic Analysis); U.S. Bureau of the Census, *Historical Statistics of the United States Colonial Times to 1970*, pt. 2, ser. U 41-46 at 870-71 (1975); Bahman Nirumand, *Persien, Modell eines Entwicklungslandes oder die Diktatur der Freien Welt* 51 (1967); Nikki Keddie, *Roots of Revolution: An Interpretive History of Modern Iran 176-77* (1981).

<sup>54</sup>See National Export Expansion Council, *Report*; "Problems of Overseas Construction," *CRev*, Oct. 1966, at 9; "Eximbank's New Policies Will Aid Construction Firms," *CRev*, Aug. 1970, at 9; "Foreign Competitors Winning Race for Overseas Work," *ENR*, Nov. 5, 1970, at 85; "Export Promotion Cuts Draw Builder Concern," *id.*, Feb. 20, 1975, at 77; "Foreign Competition," *id.*, May 29, 1975, at 10.

<sup>55</sup>"Where George Shultz Fits in at Bechtel," *BW*, May 18, 1974, at 76; *NZZ*, July 10, 1974, at 14; "Room at the Top for Ex-Cabinet Men," *BW*, Sept. 1, 1975, at 19-20; "Bechtel: A Builder Moves into Financing and Operations," *id.*, Oct. 22, 1979, at 119-20; Victor Zonana, "Megabuilder Bechtel Tries to Stay on Top by Being Aggressive," *WSJ*, Oct. 16, 1984, at 1, col. 6.

<sup>56</sup>Strassmann, "The United States" at 47.

<sup>57</sup>See Laton McCartney, *Friends in High Places: The Bechtel Story* 152-228 (1988). For Strassmann's partial defense of Bechtel in rebuttal, see his review of McCartney's book, 23 *JEI* 275 (1989); see also the more sympathetic review by C. Pursell, in 30 *TC* 702 (1989).

the late 1950s and 1960s, on which a work force of more than 33,000 labored.<sup>58</sup> The prominence of the Tanzanian-Zambian railway built by the People's Republic of China in the late 1960s and early 1970s and other large development projects overshadowed the hundreds of infrastructure projects that China carried out on a commercial basis in Asia and Africa and even in Kuwait. Eastern European state entities set up in developing countries in conjunction with projects financed by Eastern European countries also performed a considerable volume of capital construction.<sup>59</sup> The significant volume of construction performed within the socialist countries in the form of international labor collectives represented another unique facet of internationalization.<sup>60</sup>

The fact that Soviet bloc states had all of their societies' resources at their command and could operate "with an indifference to profits...which no private investor can match" enabled them to engage in international development projects with a "resounding advantage over the United States."<sup>61</sup> Even in the mid-1950s, U.S. firms complained about losing contracts—especially for dams and hydroelectric plants—to "Communist" state-owned enterprises that worked at a loss.<sup>62</sup> The U.S. government's response to such political competition brought to consciousness the contradictory consequences for U.S. multinational capital of U.S. foreign policy.

This contradiction was most blatantly exemplified by the withdrawal of U.S. aid for the Aswan Dam, and U.S. pressure on the American president of the World Bank, Eugene Black, a Wall Street banker, to attach "patronizing" conditions to its loan for construction of the dam in retaliation for Egypt's closer relationship with the Soviet Union at the height of the Cold War during the Eisenhower administration.<sup>63</sup> On the one hand, the construction industry, eager for more of the profitable projects in the Third World that U.S. foreign aid made possible,<sup>64</sup> called for using construction as "an arm of our foreign policy to a far greater extent than it has been in the past."<sup>65</sup> On the other hand, it was acutely aware that precisely such ideological militance generated political criteria so rigid that U.S. firms would lose business to the Soviet Union: "[T]here's the problem of neutralism. Most of the weak and newly independent nations want to stay neutral. Moscow has actively supported those desires. The U.S. has been more anxious to enlist the underdeveloped nations as military allies."<sup>66</sup>

A specific instance of Cold War competition will illustrate the attitude that

<sup>58</sup>Waldo Bowman, "Construction Begins on Aswan Dam—Russian Style," *ENR*, Feb. 23, 1961, at 32-38; "Aswan's First Stage Completed," *ENR*, May 21, 1964, at 55; National Research Council, *Building for Tomorrow: Global Enterprise and the U.S. Construction Industry* 46-47 (1988); Tom Little, *High Dam at Aswan* (1965); Marshall Goldman, *Soviet Foreign Aid* 61-72 (1967). For a critical view of the environmental and economic impact of the Aswan Dam, see John Waterbury, *Hydropolitics of the Nile Valley* 116-53 (1979); Edward Goldsmith & Nicholas Hildyard, *The Social and Environmental Effects of Large Dams: Overview* 250-57 (1984).

<sup>59</sup>"Vielgestaltige chinesische Entwicklungshilfe," *NZZ*, Sept. 30, 1974, at 9; Martin Bailey, "Freedom Railroad," *MR*, Apr. 1976, at 32; "China—the Sleeping Giant," *IC*, June 1983, at 30, 31; "Bulgaria Special," *IC*, Aug. 1984, at 58; Yu Fai Law, *Chinese Foreign Aid* 181, 221-22 (1984); Carl McMillen, *Multinationals from the Second World: Growth of Foreign Investment by Soviet and East European Enterprises* 99, 149 (1987).

<sup>60</sup>L. Vasil'ev, *Mezhdunarodnye trudovye kollektivy stroitelei stran-chlenov SEV: praktika i perspektivy razvitiia* (1987).

<sup>61</sup>Raymond Vernon, "The American Corporation in Underdeveloped Areas," in *The Corporation in Modern Society* 237, 241 (Edward Mason ed. 1966 [1959]).

<sup>62</sup>"U.S. Contractors Go Global" at 139.

<sup>63</sup>Waterbury, *Hydropolitics of the Nile Valley* at 102-109 (quotation at 105); Edward Mason & Robert Asher, *The World Bank Since Bretton Woods* 627-42 (1973).

<sup>64</sup>"What Foreign Aid Means to You," *ENR*, June 9, 1960, at 19.

<sup>65</sup>"Aswan to Baghdad and Beyond," *ENR*, July 31, 1958, at 92 (editorial).

<sup>66</sup>"Foreign Aid: New Look Needed?" *ENR*, July 31, 1958, at 21, 22.

the multinational firms adopted toward the changed circumstances in the Third World that their noncommercial rivals from the Second World had helped trigger. After the military coup in Iraq in 1958 disposed of the British-installed monarchy, U.S. construction firms such as Morrison-Knudsen and J. A. Jones felt threatened by "stiff future competition from Iron Curtain countries" that had theretofore been barred from participation in the most extensive construction program yet undertaken in an underdeveloped country.<sup>67</sup> They had, moreover, little understanding for the new regime's criticism of projects that benefited the few rather than the masses—especially a regime that "squeeze[d]" foreign firms by introducing the eight-hour day, overtime pay, social security taxes, and making dismissal more difficult.<sup>68</sup>

### "Reclaiming Petrodollars by Exploiting the...\$500-billion Mideast Construction Market"<sup>69</sup>

By the 1970s, important internationalizing impulses also derived from three other sources situated outside North America, Western Europe, and Japan: First, the mounting worldwide search for and exploitation and processing of petroleum and mineral resources at sites outside the Middle East (such as Australia, Malaysia, Nigeria, Indonesia, and Singapore) for export to the advanced capitalist economies; second, the incipient industrialization of certain Third World countries such as Brazil, Taiwan, and Hong Kong; and third, the construction of various large industrial complexes in the Soviet Union, which for political reasons benefited European firms such as those from Finland more than U.S. firms.<sup>70</sup>

All these projects, however, were overshadowed by the paroxysm of construction activity in the Middle East. The enormous increase in revenue that began flowing to the members of the Organization of Petroleum Exporting Countries (OPEC) in 1973 enabled them to implement unprecedented industrial development programs based on the strategy of securing an increased share of total world production of refined petroleum products and petrochemicals.<sup>71</sup> Oil revenues also financed monumental construction schemes running the gamut from such infrastructure projects as highways, harbors, airports, and desalination projects to housing, hospitals, schools, and a camel race track grandstand for the ruler of Dubai.<sup>72</sup> In Saudi Arabia, the largest OPEC producer, oil-related government revenues rose 11-fold from 1972-73 to 1977-78 and 27-fold to the peak year of 1981-82—from 12 billion to 324 billion Saudi riyals.<sup>73</sup> The increase in value

<sup>67</sup>"Construction's Stake in Iraq," *ENR*, July 24, 1958, at 23, 24; Waldo Bowman, "Iraq's Operation Bootstrap—Part One: A Modern Mesopotamia is Molded," *ENR*, Dec. 12, 1957, at 34.

<sup>68</sup>"How U.S. Firms Will Make Out in Iraq," *ENR*, Jan. 29, 1959, at 44 (mentioning a Frank Lloyd Wright opera house); "Iraq Squeezes Western Builders," *id.* at 42, 44.

<sup>69</sup>"U.S. 'Arrogance' Costs Firms Billions in Lost Jobs," *ENR*, Nov. 29, 1979, at 26, 28.

<sup>70</sup>See e.g., "Singapore Refiners in Midst of Huge Construction Campaign," *OGJ*, July 20, 1992, at 23 (Nexis); "The Top 250 International Contractors: Instability Slows Growth Abroad," *ENR*, July 22, 1991, at 30 (Hong Kong and Taiwan "are on huge infrastructure spending sprees"); [Brown & Root], *Brownbuilder*, No. 1, 1992, at 15; "Nixon Uses Credit to Push Soviet Trade," *BW*, June 1, 1974, at 24; "But Chemico's Four-Plant Contract is Biggest Ever With USSR," *ENR*, June 27, 1974, at 9; Rimmer, "Japanese Construction Contractors and the Australian States"; Visvanathan, "International Construction Industry" at 81-85.

<sup>71</sup>See Faribarz Ghadar, "The Impact of the New OPEC Downstream Operations on Oil Industry Structure," in *Petroleum Resources and Development: Economic, Legal and Policy Issues for Developing Countries* 232-45 (Kameel Khan ed. 1988).

<sup>72</sup>"Building Up to £3.8bn," 12 *BB* 456, 458 (1983).

<sup>73</sup>Calculated according to data in Kingdom of Saudi Arabia, Central Dept. of Statistics, *Statistical Year Book*, tab. 10-2 at 381 (14th Issue, 1978); *id.*, tab. 10-2 at 522 (19th Issue, 1983); *id.*, tab. 10-2 at 554 (24th Issue, 1988). During this period the exchange rate rose from about 4.15 to 3.415 riyals to the U.S. dollar.

added in Saudi construction during this period almost exactly mirrored the rise in government revenues, increasing from 1973 to 1981 from 1.8 to 50.3 billion riyals.<sup>74</sup> The other major OPEC producers registered similar increases. In Iran and Iraq, for example, government oil and gas revenues rose eight-fold and ten-fold respectively alone from 1972 to 1974.<sup>75</sup>

In order to build so-called downstream facilities such as refineries, petrochemical complexes, and gas-gathering and processing plants, OPEC states had to rely on the few multinational, and especially U.S., engineering and construction firms competent to carry out these very large and technologically complex projects.<sup>76</sup> The largest construction firms in the United States, Western Europe, and Japan have therefore ranked high among the capital-goods-producing beneficiaries of the recapture of petrodollars. But industrially advanced building on such a gargantuan scale simultaneously created a secondary international redistribution of profits in the form of a proportionately expanded demand for capital goods from the advanced capitalist oil-consuming nations.<sup>77</sup> "In most cases, the value of this industrial equipment [to be installed] can be three or four times that of the engineering and construction services."<sup>78</sup>

The scope of these ancillary exports, which are even more profitable than the construction operations themselves, can be measured by the fact that in 1975 two-thirds of the value of large U.S. construction firms' overseas contracts went to materials, equipment, and machinery, of which in turn 44 per cent were procured in the United States.<sup>79</sup> In the same year, "the total that U.S. builders spent on domestic equipment and services for export to foreign construction sites came to about \$9.6 billion. That pushed heavy construction past the defense industry as the top industrial bulwark of America's balance of trade."<sup>80</sup> Middle Eastern expenditures on construction machinery quickly rose to per capita levels approaching those in the United States.<sup>81</sup>

These massive construction programs initiated by the Middle Eastern oil-exploiting nations in the mid-1970s afforded an immense impetus to the

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After 1978, the data for taxes include non-oil company income taxes, but these are relatively minuscule and for the sake of comparability have been used for all years. The other rubric of oil-related revenue is "Royalties from Oil," which is decidedly smaller. In contrast to the English translation, the Arabic text incorrectly uses "intaj al-zait" ("oil production" or "output"). Telephone interview with Dr. Hilali, Saudi Arabian embassy, Washington, D.C. (Feb. 2, 1993) (confirming the error).

<sup>74</sup>Calculated according to data in U.N., *YCS 1973-1980*, at 158 (1982); *id.*, 1984, at 179 (1986). For descriptions of infrastructure projects and the construction industry in Saudi Arabia, see Ali Johany, Michel Berne, & J. Mixon, Jr., *The Saudi Arabian Economy* 131-40 (1986); Hossein Askari, *Saudi Arabia's Economy: Oil and the Search for Economic Development* 67-85 (1990).

<sup>75</sup>Calculated according to data in Statistical Centre of Iran, *Statistical Yearbook of Iran 1352 (March, 1973-March, 1974)*, at 461 (1976); Republic of Iraq, Central Statistical Organization, *Annual Abstract of Statistics 1976*, at 256 (n.d.). For an overview of the oil revenues and construction programs throughout the Middle Eastern oil producing nations, see Jim Antoniou, *Construction in the Middle East* 7-25, 31-53 (Economist Intelligence Unit Special Report No. 55, 1978).

<sup>76</sup>See U.S. International Trade Administration, *Current Developments in U.S. International Service Industries* 55-56, 61-62 (1980). On the strategy in Iran, see Jahangir Amuzegar, *Iran: An Economic Profile* 66-77 (1977); Abolghassem Atighetchi, *Industriepolitik als Versuch der Überwindung ökonomischer Unterentwicklung im Iran* (1983).

<sup>77</sup>See Ernest Mandel, *The Second Slump: A Marxist Analysis of Recession in the Seventies* 34-46, 129-32 (1978).

<sup>78</sup>National Export Expansion Council, *Report* at 33.

<sup>79</sup>National Export Expansion Council, *Report* at 36; U.S. International Trade Administration, *Current Developments in U.S. International Service Industries* at 57. These data are consistent with domestic U.S. data showing that value added in the industrial and nonresidential building sectors account for a little less than one-third of the output. *SAUS: 1992*, tab. 1201 at 705.

<sup>80</sup>"Where the Constructors Strike it Rich," *BW*, Aug. 23, 1976, at 46, 48-49.

<sup>81</sup>See Winfred Richter, "Middle East Construction: Potentials and Prospects," *IC*, Sept. 1975, at 80.

internationalization of construction.<sup>82</sup> In 1975, as the OPEC building bubble expanded, the value of Middle East contracts amounted to 10 per cent of the total construction volume and one-third of the overseas volume credited to the 400 largest U.S. construction firms.<sup>83</sup> This sea change was captured by the vast shift in the geographic distribution of international profits: in 1970 U.S. construction firms derived 22 per cent of their overseas net receipts from Western Europe and 25 per cent from OPEC members; by 1978 the corresponding figures were 7 per cent and 61 per cent.<sup>84</sup>

Internationally oriented British firms' dependence on the Middle East became even more pronounced. From 1972-73 to 1976-77, their new overseas contract awards more than quadrupled, from £346 million to £1,588 million (table 9.1), while the share accounted for by Middle Eastern countries rose from 22 per cent to 55 per cent. The United Arab Emirates alone accounted for almost half of the Middle East total.<sup>85</sup> Despite the ongoing extraordinary reliance of French multinational construction firms on markets in the former French colonial Africa, they too witnessed a tripling of their international construction work between 1973 and 1976.<sup>86</sup> French firms, such as Bouygues, that had been largely domestic builders finally became enmeshed in the world market through huge contracts in Iran, Saudi Arabia, and Iraq.<sup>87</sup>

In the Middle East, a politically mediated benefit accrued to U.S. firms, which, as the U.S. National Academy of Engineering acknowledges, "[t]o some degree ha[ve] enjoyed...a relationship with Saudi Arabia" similar to that of the British and French construction industries with their respective countries' former colonies.<sup>88</sup> In particular, non-U.S. construction firms were frustrated by the fact that their prime competitors could rely on a military superpower's expeditionary Army Corps of Engineers, which "has all its fingers in the pie...."<sup>89</sup> During the Cold War, under the dual banners of rolling back communism and spreading American free enterprise, Congress had authorized the Army Corps of Engineers to provide (reimbursable) services to friendly foreign countries. In addition to considerable military construction in many regions, in some of which the larger projects are initially set aside for exclusive bidding by U.S. firms,<sup>90</sup> the Army Corps of Engineers managed or performed multi-billion dollar civil construction projects in Saudi Arabia from the 1960s to the 1980s. Pursuant to the Foreign Assistance Act of 1961, 1963, and 1964—in which Congress celebrated "the vital

<sup>82</sup>See Walter McQuade, "The Arabian Building Boom is Making Construction History," *Fortune*, Sept. 1976, at 112-15, 186-90. See also "Building a New Middle East," *BW*, May 26, 1975, at 38-54; "Where the Constructors Strike it Rich"; "Middle Eastern Construction," *FT*, July 28, 1976, at 13-28; "'Mekka' für die Baubranche," *HB*, Aug. 2, 1974, at 19; "Baubranche sucht neue Ertragsquellen," *id.*, Aug. 16-17, 1974, at 15; Shawn Tully, "France's Master Builder is on the March," *Fortune*, May 2, 1983, at 210.

<sup>83</sup>"Foreign Contracts Account for One Third of '75 Volume," *ENR*, Apr. 15, 1976, at 62.

<sup>84</sup>Calculated according to data in Anthony DiLullo, "Service Transactions in the U.S. International Accounts, 1970-80," *SCB*, Nov. 1981, at 29, tab. 8 at 40. By 1980 the shares had become about one-eighth and two-fifths respectively.

<sup>85</sup>Calculated according to data in "Building Big Business Overseas," 33 *TI* 126-28 (1978); "Going Up—British Building Business Overseas," 37 *TI* 358, 359, 362 (1979).

<sup>86</sup>By 1978, 22 per cent of French firms' international work was performed in the Middle Eastern oil producing countries compared with 45 per cent in Africa. Behring, Gluch, & Rußig, *Entwicklungstendenzen im deutschen Auslandsbau* at 52-53.

<sup>87</sup>Elisabeth Campagnac & Vincent Nouzille, *Citizen Bouygues ou l'histoire secrète d'un grand patron* 93-138 (1988).

<sup>88</sup>National Research Council, *Building for Tomorrow* at 16. For charges that the Saudi national oil company even rigs bidding in favor of U.S. firms, see John Egan, "Rigged Bids," *FW*, July 24, 1990, at 56 (Nexis).

<sup>89</sup>"The Top International Contractors," *ENR*, July 19, 1984, at 78 (quoting complaint of West German firm speculating about the impact of "Persian Gulf hostilities" on military construction in Saudi Arabia).

<sup>90</sup>See "U.S. Firms Lose Job for Lack of Bidders," *ENR*, Apr. 4, 1985, at 79.

role of free enterprise”—which directed the U.S. Agency for International Development to encourage the use of “engineering and professional services of United States firms,” the Army Corps of Engineers contracted with private U.S. firms on capital projects financed under the statute.<sup>91</sup>

Although the Army Corps of Engineers accorded an absolute monopoly to U.S. architect-engineering-design firms, ironically, by the end of the 1970s, only one-quarter of the actual construction work, which the Saudi payors insisted be contracted to the lowest bidder, had been performed by U.S. firms (most prominently by Morrison-Knudsen).<sup>92</sup> Even where U.S. construction firms were not low bidders on projects in Saudi Arabia managed by the Army Corps of Engineers, however, “specifications generally specify American material and equipment.... So there is a great amount of money that comes back into the United States....”<sup>93</sup> In contrast, neither the British Royal Engineers, which began building railways in the African colonies in the late nineteenth century and carried out a large volume of reconstruction work after World War II, nor the French Génie Corps nor the Corps des ponts et chaussées, which were particularly active in colonial railway construction and beginning in the mid-nineteenth century in the construction of ports and water systems in North Africa, has had the same international commercial impact as its U.S. counterpart in the post-World War II period.<sup>94</sup>

The OPEC construction programs also projected the defeated national capitals of World War II (Germany, Italy, and Japan) back onto the world market. Bereft of ties to the infrastructure forged by former or current military power, West German firms, for example, “without the ready-made foreign markets of former colonial powers such as Britain and France,” were reported by *Business Week* to “have traditionally stayed at home.” Stymied at first in seeking to overcome “the depression in their domestic market” by obtaining projects in the Middle East at the outset of the OPEC-financed boom, once it expanded beyond the capacities of the traditional internationalist American, British, and French firms, the new entrants quickly became incorporated into the developing world market.<sup>95</sup> West German firms, for example, specializing in harbors, hospitals, and airports, experienced an 18-fold increase in the value of foreign construction contracts in the short span between 1970 and 1976—from 700 million marks to more than 12 billion marks.<sup>96</sup>

<sup>91</sup>Foreign Assistance Act of 1961, Pub. L. No. 87-195, §§ 601, 607, 75 Stat. 424, 438, 441 (1961); Foreign Assistance Act of 1963, Pub. L. No. 88-205, § 301(a)(3), 77 Stat. 379, 385 (1963); Foreign Assistance Act of 1964, Pub. L. No. 88-633, § 301(b), 78 Stat. 1009, 1012 (1964) (codified as amended at 22 U.S.C. §§ 2351, 2357(a) (1990); *Activities of the United States Army Corps of Engineers in Saudi Arabia: Hearing Before the Subcomm. on Europe and the Middle East of the House Comm. on Foreign Affairs*, 96th Cong., 1st Sess. (1979); *The History of the US Army Corps of Engineers* 109-12 (n.d. [1986]).

<sup>92</sup>*Activities of the United States Army Corps of Engineers in Saudi Arabia* at 3-4, 31-32, 40, 43. Complaint about this distribution was reflected in the American trade press. See “U.S. ‘Arrogance’ Costs Firms Billions in Lost Jobs,” *ENR*, Nov. 29, 1979, at 26-27, 37. *WSJ*, Feb. 27, 1978, at 6, col. 1-2, also reported that U.S. firms’ share of Saudi construction, which “had once been an American preserve,” had sunk to 15 per cent. The figures presented there showing U.S. firms’ ranking twelfth in Mideast construction contracts in the late 1970s were either inaccurate or represented an anomalous situation superseded throughout the 1980s and into the 1990s by clear U.S. dominance in the region. See chapter 11 below.

<sup>93</sup>*Activities of the United States Corps of Engineers in Saudi Arabia* at 44.

<sup>94</sup>See W. Baker Brown, 4 *History of the Corps of Royal Engineers* 85, 92, 101, 110-13, 122-23 (1952); 7 *History of the Corps of Royal Engineers: Campaigns in Mesopotamia and East Africa, and the Inter-War Period, 1919-38*, at 245-48 (H. Pritchard ed., 1952); R.P. Pakenham-Walsh, 9 *History of the Corps of Royal Engineers: 1938-1948*, at 545-79 (1958) A. Brunot & R. Coquand, *Le Corps des ponts et chaussées* 513-19, 599-603 (1982); chap. 5 above.

<sup>95</sup>*BW*, Nov. 9, 1974, at 64. See also Behring, Gluch, & Rußig, *Entwicklungstendenzen im deutschen Auslandsbau* at 53, 61; National Research Council, *Building for Tomorrow* at 17.

<sup>96</sup>Behring, Gluch, & Rußig, *Entwicklungstendenzen im deutschen Auslandsbau* 28, tab. 2.1 at 25. These

Between 1973 and 1976, as Italian firms' overseas awards rose sixfold, the share accounted for by oil-producing countries (including Nigeria and Venezuela) jumped from 12 per cent to 69 per cent. Italian construction companies, several of which are owned by the state-controlled Ente Nazionale Idrocarburi (Snamprogetti) and Istituto per la Ricostruzione Industriale (Italmimpianti) and specialize in oil and steel-related projects, recorded such strong gains in the 1970s that they contributed to a surplus in Italy's balance of payments. Overseas construction has accounted for as much as 15 per cent of total Italian construction and 15 per cent of total national exports of goods and services.<sup>97</sup>

Japanese construction firms had been operating overseas—primarily in Asia—on a commercial basis for only a few years at the time of the onset of the OPEC boom. Despite their lack of experience in the Middle East and the sharp competition from Korean firms, they succeeded in virtually doubling their orders annually from 1972 to 1976. By the latter half of the decade, Japanese firms were taking more than half of their international orders from the Middle East. Their particular reliance on projects in Iraq exposed some firms to significant losses as a result of the war with Iran beginning in 1980. A strategic diversification process then ensued, leading Japanese firms back to their traditional markets in Southeast Asia and, when these faltered in the early 1980s, on to new markets in Australia and the United States.<sup>98</sup>

Finally, the petroleum-funded Middle East building spree created an absolutely unprecedented phenomenon: a (former) Third World country, South Korea, joined the export market, capturing a significant share of the Middle Eastern construction market between 1976 and 1985. Originally drawn into the world market as contractors to the U.S. Army Corps of Engineers for military projects in Korea, Vietnam, Guam, and Saudi Arabia, South Korean firms found that their patron's expulsion from South Vietnam in 1975 had left them "with no jobs, idle equipment and unemployed workers." Coincidentally, the advent of the Middle East boom rescued their fixed capital investment.<sup>99</sup>

Korean firms were able to underbid Western firms by 20 to 30 per cent by using a "regimented workforce (backed with army approval and full government support)." They secured orders for many labor-intensive projects largely on the basis both of the much lower wages that they paid their own national manual workers, managers, and supervisors and of credit extended by the largest U.S. banks.<sup>100</sup> Their successful strategy, which was made possible by the absence of a large supply of cheap labor on site, stemmed from their greater facility at transferring cheap labor from their domestic labor market to the Middle East than the First World firms initially showed in recruiting workers from third-party Third World countries. When the focus of the international construction market shifted from the population-poor Middle East to sites where cheap labor was more

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figures are understated because they exclude contracts executed by affiliates of German firms abroad. Erich Gluch & Jürgen Riedel, "The Federal Republic of Germany," in *The Global Construction Industry* at 121. For examples of some of the larger West German projects in the Middle East, see Philipp Holzmann Aktiengesellschaft, *Hafen Damman Saudi Arabien* (n.d. [ca. 1976]); *idem*, *Medizinisches Zentrum in Riyadh Saudi-Arabien. Schlüsselfertige Planung und Ausführung* (1980); *idem*, *Ausbau des Trinkwasser-Systems der libyschen Hauptstadt Tripolis* (1984).

<sup>97</sup>Behring, Gluch, & Rußig, *Entwicklungstendenzen im deutschen Auslandsbau* at 54-56; Bruno Amoroso & Ole Olsen, *Lo Stato imprenditore* 308-15 (1978); "Italy's World Builders," *Economist*, Nov. 11, 1978, at 80; Norsa, "Italy" at 91.

<sup>98</sup>Hippo & Saburo, "Japan" at 59, 62-65.

<sup>99</sup>Dae Chang, "The Republic of Korea," in *The Global Construction Industry* at 141, 42-43.

<sup>100</sup>Antoniou, *Construction in the Middle East* at 62 (quotation); "South Korea Faces Slackening Growth," *NYT*, Jan. 25, 1976, sect. 3, at 70; "Korean Contractors Invade the Mideast," *BW*, May 29, 1978, at 34; Youssef Ibrahim, "How Koreans Built Saudi Success," *NYT*, June 19, 1978, at D5, col. 1; Chang, "The Republic of Korea," tab. 7.1 at 142.

plentiful, Korean firms lost much of their competitive advantage. As the world market demanded more capital- and technology-intensive projects, Korean firms, despite efforts to move into these more sophisticated types of construction, were displaced by traditional competitors. Undercapitalized to begin with, Korean firms' "ridiculously low bids in the Middle East" led to mass insolvencies and mergers as many of them were forced to siphon all their profits into interest payments.<sup>101</sup>

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<sup>101</sup>Chang, "The Republic of Korea" at 148, 150-51 (quotation), 158; chapter 10 below.