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Entry of Rio Tinto into Iron Ore Development in Western Australia

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Abstract

This paper examines the historical process behind the development of iron ore in the state of Western Australia by the British mining company Rio Tinto from 1959 to 1962. To analyze Rio Tito's iron ore operations, the author applies Michael Porter's 'five forces' concept. In its uranium case, Rio Tinto had strong bargaining powers in relationships with governments as buyers, which were the reasons for its successes. However, in the Western Australian iron ore case this factor did not influence the company's competitiveness. Thus, the iron ore case demonstrates that Rio Tinto did not just depend on its relationships with governments. On the other hand the positive factors in Rio Tinto's iron ore venture were its relationships with private companies as buyers or collaborators. Both advantages flowed from Rio Tinto's global status, but they were not enough for its entry into iron ore development and had to be complemented by localization in order to overcome the barrier built by the state government.

1. Introduction

This paper examines the historical process behind the development of iron ore in the state of Western Australia by the British mining company Rio Tinto from 1959 to 1962 (Rio Tinto began exploring for iron ore in Western Australia in 1959)[1]. The Western Australian iron ore developed by Rio Tinto was first shipped in 1966, but this paper has set 1962 as the end of its analysis period due to document availability.

The background behind this research is the general business history of the Rio Tinto Company and this paper serves as part of a study on Rio Tinto's post-1954 revival process. In 1954 Rio Tinto sold the Rio Tinto Mine in Spain, the company's original location, to a Spanish bank consortium backed by the Spanish government. The deal was motivated by the pressure caused by the Spanish government's decades-long wish to nationalize the copper mine.

In the first half of the 1950s, Rio Tinto began searching for new mines, mainly in the British Commonwealth. Developing iron ore in Western Australia was one of Rio Tinto's new Commonwealth ventures. The venture succeeded, and Rio Tinto became one of the big three global suppliers of iron ore, along with CVRD (Companhia Vale do Rio Doce) of Brazil and BHP Billiton of Australia and Britain[2].

In regard to previous works we already have two voluminous works on the history of the Rio Tinto Group prior to 1954—the first by Avery (1974) and the second by Harvey (1981). Avery's work is a more general history whereas Harvey's work is based on the framework of the business history research conducted by Chandler (1962, 1977). In Chandler (1990), Chandler himself compared Rio Tinto to American copper mining and smelting companies between 1890 and 1940. Chandler (1990) said that Rio Tinto lagged behind its American competitors because it had not made large investments in the smelting sector[3]. This author is exploring the business history of the Rio Tinto Group after 1954 in order to fill the gap in the Group's history between 1954 and now.

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1 Rio Tinto changed its name in 1962 as Rio Tinto-Zinc (RTZ) as a consequence of the merger with Consolidated Zinc. However in this paper we call the company as Rio Tinto even after 1962. Rio Tinto-Zinc re-changed its name as RTZ-CRA in 1995 and then returned to its original name, Rio Tinto, in 1997, Harvey et al (2009).

2 On the recent situation of the global iron ore industry, Singh and Hoyt (2007).

3 Chandler (1990) especially pp.280-281 and 285-286.

Jones (1996, 2005) dealt with Rio Tinto as a case in his general explanation on the international mining industry between the late nineteenth century and the early twenty-first century. This paper bases its research on Jones' (1996, 2005) and considers it an overview of the history of Rio Tinto since 1954.

With regard to Rio Tinto after 1954, Sugawara (2007) and Sugawara (2009) conducted research on the uranium business in Canada and in Australia in the 1950s, respectively. The entry into the uranium business in the two countries was the first step in the revival of the Group, followed by developments in the copper and iron ore industry in South Africa and Australia, respectively.

Raggatt (1968) and Black and Sone (2009) provided the base for this paper by explaining the developments in the iron ore industry in Western Australia as a whole. Focusing on the developments in the iron ore industry in Western Australia brought about by Rio Tinto, which led to the opening of Hamersley Iron Pty. Ltd., Trengave (1976) is an early intensive work on the history of Hamersley Iron and Hamersley Iron Pty. Ltd. (1981) provided practical information on their operations.

Finally, Boyce's (2001) research is closest to this paper's with regard to the subject and the research method—using archival material[4]. Boyce (2001) focused on the relationship between detailed business negotiations and the transaction cost theory. Empirically, Boyce (2001) emphasizes on the bargaining power of Japanese steel mills and general trading companies. This paper, however, focuses on the entry of Rio Tinto into Western Australia, the relationship between Rio Tinto and the state government, and Rio Tinto's competitiveness.

This paper has two objectives—to describe the history of Rio Tinto's entry into the iron ore mining business and to analyse the reproduced entry process from the perspective of mining firms' competitiveness.

Rio Tinto's revival began in the 1950s with its uranium development businesses in Canada (in 1953)[5] and Australia (in 1954)[6]. In order to compare the iron ore case with

[4] However, the documents Boyce (2001) consulted are currently unavailable.
[5] Sugawara (2007).
[6] Sugawara (2009).

the uranium case we summarize Sugawara (2007) and Sugawara (2009). The buyers of Rio Tinto's uranium were a Canadian government corporation and the British government, respectively. Thus, Rio Tinto's relationship with governments was a main factor in the success of its uranium development. The suppliers of Rio Tinto's uranium mines were smaller explorers in Canada and Australia. Rio Tinto's stronger marketing and financing capabilities gave it a large advantage when negotiating to acquire uranium mines. In other words, not only in its relationships with buyers but also in its relationship with mine suppliers, Rio Tinto's relationship with governments brought advantages. There were two reasons for this. First, Rio Tinto's relationship with governments allowed it to secure uranium buyers before negotiations with mine suppliers began. Second, the relationship helped Rio Tinto raise funds to develop its uranium mines. In the Canadian case, the Commonwealth Development Company, in which the Bank of England had invested, accepted some of Rio Tinto's newly issued bonds; in Australia, the UK Atomic Energy Authority lent Rio Tinto money. Thus, the company's relationship with governments can be identified as a main factor in the success of Rio Tinto's uranium business. However, we must ask whether we can generalize the conclusion, deduced from Rio Tinto's uranium case, that its competitive advantages came from its good relationship with governments, especially in the Commonwealth.

To consider this question through an analysis of Rio Tito's iron ore operations, the author applies Michael Porter's 'five forces' concept because Porter's notion clarifies the impact of firms' relative bargaining power on their competitiveness[7]. Among the five relationships in the five forces concept, the author focuses on three: a firm's relationships with its buyers, suppliers, and competitors. In Rio Tinto's uranium case, in the company's relationships with buyers (governments) and suppliers (smaller local firms), Rio Tinto had strong bargaining powers, which were the reasons for its successes. We wonder, then, whether the same conditions obtained in other natural resource areas.

The structure of this paper is as follows. In section two we describe the entry process of Rio Tinto into iron ore development in Western Australia chronologically and

[7] Porter(1980), especially chapter 1.

in detail. Then in section three we consider bargaining powers of Rio Tinto and Western Australian government and the competitiveness of Rio Tinto in comparison with the case of uranium business. The final section concludes this paper.

2. The Entry Process

2.1. Background

In the middle of the 1950s, Japan's demand for iron ore increased as it began its historically high rate of growth. Japan had lost its traditional iron ore supplier, China, through the consequences of WWII and the beginning of the Cold War[8]. Thus, Japanese steel makers and trading houses sought new iron ore suppliers[9]. On the other hand Australia banned iron ore exports in 1938 (the ban continued into the 1950s)[10]; Australia began trying to curb Japan's military production in the same year while seeking to promote its domestic steel production[11]. However, Australia was expected to lift its ban on iron ore exports in the late 1950s[12].

Table 1 shows the chronology of Rio Tinto's entry into the iron ore business in Western Australia. Before its entry, Rio Tinto had no iron ore production capacity.

[Table 1]

The success and development of the iron ore industry in Western Australia has been very beneficial to all three stakeholders, Rio Tinto, Japanese and Australian industries. First, after 1966, iron ore became the second most important product for Rio Tinto, following copper in sales and profits (Figures 1 and 2). Hamersley Iron, the centre of iron ore development for the Rio Tinto Group, became the largest iron ore producer in

[8] Kosai(1986)p.82.
[9] Tanaka(2008)pp.176-177.
[10] Raggatt(1968)pp.106-109.
[11] David and Sone(2009)chapter 6.
[12] Raggatt(1968)pp.109-110.

Western Australia[13]. This was mainly because of the sales to Japan (Figure 3). Second, the increase in iron and steel production in Japan was supplemented by the iron ore supply from Western Australia (Figure 4 and Table 2)[14]. Third, iron ore emerged as a major export commodity for not only Western Australia but also the Australian economy as a whole (Figures 5 and 6). The iron ore trade increased and strengthened the economic relationship between Australia and Japan (Tables 2 and 3). However, for Rio Tinto to enter the iron ore industry was never easy.

2.2 Collaboration with Western Mining

By May 1959, Rio Tinto had begun iron ore exploration in Western Australia[15]. Just after starting, Rio Tinto attempted to collaborate with the Western Mining Corporation of Australia[16]. Both companies had already collaborated when Rio Tinto entered into Australian uranium development in the middle of the 1950s[17]. However, the collaboration promptly began to dissolve by the end of November 1959, chiefly because of Western Mining's temporary financial problems but also because Rio Tinto's basic strategy was to diversify its mining products by increasing the number of mines under its own operation[18].

2.3 Approach by Japanese trading houses

In late November of 1959, a Japanese trading house, Mitsubishi Corporation,

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[13] Among four largest iron ore producers (Hamersley, Mt. Newman, Robe River, Mt. Goldsworthy), Hamersley was the second largest following Mt. Newman in 1970 to 1973 and the largest in 1974 to 1977, Matsushima (1980) p.246. Mt. Newman project was led by BHP (Australia) and Amax (USA), Raggatt (1968) p.125.

[14] The three largest iron ore suppliers to Japan were Australia, Brazil and India. For example, in 1975 Australia supplied 63 million wet metric tons to Japan followed by Brazil's 23 million tons and India's 16 million tons, Tanaka (2012) p.38.

[15] R.S.Matheson (Exploration Manager, Rio Tinto) to H.Jensen (Exploration Manager, Rio Tinto), 5 May 1959, Rio Tinto Archives (hereafter, RTA), RTC-211-120-C-41-1.

[16] Lindesay Clarke (Western Mining) to Val Duncan (Managing Director, Rio Tinto), 3 June 1959, RTA, RTC-211-120-C-41-1.

[17] Sugawara(2009).

[18] Pat Robinson (Rio Tinto, Australia), Note on conversations with Mr. Lindsey Clarke, 26 November, 1959, RTA, RTC-211-120-C-41-1. Val Duncan (Managing Director, Rio Tinto) to Pat Robinson (Rio Tinto, Australia), 25 September 1959, RTA, RTC-211-120-C-41-1.

approached Rio Tinto's Melbourne office to suggest collaborating in Western Australia. Rio Tinto responded that they did not need investments in their iron ore venture from Japanese firms and that other Japanese trading houses had already approached them[19]. In June 1960, Mitsubishi visited Rio Tinto Melbourne again and Rio Tinto repeatedly told them that other Japanese trading houses had already approached the mining company. Rio Tinto also said that they would choose a Japanese trading house as a business partner for their iron ore exports to Japan when exporting from Australia became possible[20].

2.4 Tender for Goldsworthy

In December 1960, Australia's Minister of Economic Development lifted the nation's embargo on iron ore exports, whereupon Rio Tinto attempted to select a Japanese trading house as an iron ore business partner[21]. Rio Tinto nominated Marubeni Co. because the Japanese house had, in January 1961, offered to bear half of the Mt. Goldsworthy (Map 1) exploration expenditure[22]. Rio Tinto's local Australian staff had a high opinion of Marubeni because a Marubeni employee from Japan in charge of its Australian iron ore business had seemed far more acquainted with the business than were other Japanese trading houses[23].

In March 1961, the Western Australian Minister for Mines informed Rio Tinto that the tender for Mt. Goldsworthy would be held shortly. At that time, Rio Tinto requested longer term mining rights for extra royalties without tender, but the Western

[19] A.E.Buxton (Rio Tinto, Australia) to P.M.Robinson (Rio Tinto, Australia), 1 December 1959, RTA, Bow-113-269.
[20] A.E.Buxton (Rio Tinto, Australia) to G.Okada (Mitsubishi, Australia), 22 June 1960, RTA, Bow-113-269.
[21] A.E.Buxton (Rio Tinto, Australia), Comments on the Australian Government's decision to lift the embargo on the export of iron ore, 15 December 1960, RTA, Bow-113-269.
[22] R.H.Harding (Rio Tinto, Australia) to the Secretary (Rio Tinto, London), 17 January 1961, RTA, Bow-113-269. R.H.Harding (Rio Tinto, Australia) to the Secretary (Rio Tinto, London), 25 January 1961, RTA, Bow-113-269.
[23] R.H.Harding (Rio Tinto, Australia) to A.E.Buxton (Rio Tinto, Australia), 25 January 1961, RTA, Bow-113-269.

Australian government refused[24].

Rio Tinto had hoped that the state government would support infrastructure construction such as railroads and ports, but understood it would not; research on the costs of railroad and port construction showed that it would be too expensive[25]. Due to these high infrastructure costs, Rio Tinto did not join the Goldsworthy tender[26]. A consortium consisting of Consolidated Goldfields of Australia (a subsidiary of South Africa's Consolidated Goldfields), Cyprus (USA), and Utah Construction (USA) bid successfully[27].

2.5 The discovery of the Pilbara (Hamersley) deposits

The cost of infrastructure was not the only reason Rio Tinto decided not to join the Goldsworthy tender. Rio Tinto had another, positive reason: the discovery of more attractive deposits in Pilbara (Map 1). In early March of 1961, Rio Tinto Australia made a short internal report stating that the estimated amount of iron ore in Pilbara was 500 million tons[28]. In late March, Rio Tinto's London head office was also attracted by the Pilbara deposits[29]. However, Rio Tinto was uncertain about developing new mines in Pilbara because they did not know how the Western Australian government would assign the exploration rights[30].

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[24] Brief Memorandum of Discussion between the Hon. A.F.Griffith-Minister for Mines in Western Australia-and Mr.A.H.Telfer-Under Secretary for Mines, Messers L.G.Hancock and E.A.Wright, 1 March 1961, RTA, Bow-113-269.

[25] Jewell (Rio Tinto, London) to Byers (Rio Tinto, London), 15 March 1961, RTA, Bow-113-269. Hohnen to Duncan (Managing Director, Rio Tinto), 15 March 1961, RTA, Bow-113-269. Frank Byers to John Hohnen, 21 March 1961, RTA, Bow-113-269. Hohnen to Duncan, 28 March 1961, RTA, Bow-113-269.

[26] John H. Hohnen (Rio Tinto, Australia) to the Secretary (Rio Tinto, London), 1 June 1961, RTA, RTC-211-120-C-41-1.

[27] *Financial Times*, 22 December 1964. Raggatt (1968) p.121.

[28] Hohnen (Rio Tinto, Australia) to Duncan (Managing Director, Rio Tinto), 1 March 1961, RTA, Bow-113-269. Byers (Rio Tinto, London) to Hohnen, 21 March 1961, RTA, Bow-113-269.

[29] Hohnen (Rio Tinto, Australia) to Duncan (Managing Director, Rio Tinto) 24 March 1961, RTA, Bow-113-269.

[30] R.W.Wright (Rio Tinto, London) to John Hohnen(Rio Tinto, Australia), 21 April 1961, RTA, Bow-113-269.

2.6 Temporary reserve rights on Hamersley

In May 1961, Rio Tinto, with Hancock and Wright (a local prospector), applied for temporary reserve rights (a two-year right to exclusive exploration) on the Pilbara deposits to the state government. In July, Rio Tinto and Hancock and Wright were permitted temporary reserve rights on ten deposits of the thirteen to which they had applied[31]. At that time, the mining concerns that had secured sufficiently large lands were BHP (Australia), with 750 m^2, Rio Tinto (Britain), with 688 m^2, and Consolidated Goldfields (Australia), with 481 m^2 [32].

2.7 Seeking mining rights to Hamersley

In December 1961, Rio Tinto sought the mining rights to Hamersley by presenting a concrete proposal to develop the area to the Western Australian government. However, the government again refused[33]. The Premier of Western Australia regarded the proposed royalty as too low and the proposed quantity of iron ore to be secured by Rio Tinto as too large. During negotiations, both sides manoeuvred for dominance. A state representative implied that offers to develop the Hamersley deposits had been made by other mining concerns; Rio Tinto replied that, if a deal were not reached quickly, its Japanese steel mills would secure its iron ore supply from another country, such as Brazil[34]. Finally, the government proposed a royalty of six shillings per ton and permission for Rio Tinto to secure 200 million tons of the area's ore for export. Rio Tinto accepted these conditions in January 1962[35].

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[31] Rio Tinto Australia to Rio Tinto London, 20 July 1961, RTA, RTC-211-120-C-41-1. T.D. to Byers (Rio Tinto, London), 28 July 1961, RTA, RTC-211-120-C-41-1. H.E.Jensen (Exploration Manager, Rio Tinto) to Jocelyn (the Secretary, Rio Tinto, London), 7 August 1961, RTA, RTC-211-120-C-41-1. R.F. Lethbridge (Rio Tinto, London) to R.W.Wright (Rio Tinto, London), 9 August 1961, RTA, Bow-115-268.

[32] R.F. Lethbridge (Rio Tinto, London) to R.W.Wright (Rio Tinto, London), 9 August 1961, RTA, Bow-115-268.

[33] Rio Tinto to Arthur Griffith (Minister for Mine, Western Australia), 5 December 1961, RTA, Bow-115-268.

[34] John Hohnen (Rio Tinto, Australia) to J.M.Rodd, 29 December 1961, RTA, Bow-115-268.

[35] John Radd to Duncan (Managing Director, Rio Tinto), 3 January 1961, RTA, Bow-115-268. John Hohnen (Rio Tinto, Australia) to A.Griffith (Minister for Mine, Western Australia), 16 January 1962, RTA, Bow-115-268.

Despite Rio Tinto's compromise, negotiations were suspended[36]. In May 1962, Val Duncan, managing director of Rio Tinto London, said 'the business became a total mess'[37]. The suspension occurred because the state government had given priority to another iron ore development project, Goldsworthy (whose participants included a local firm), and had decided not to provide support to any other projects[38].

2.8 Mining rights entitlement for Hamersley

Rio Tinto was given mining rights to the Hamersley deposits by the Western Australian government in July 1963[39]. During the negotiations, Rio Tinto had been disadvantaged relative to local firms. In order to overcome this, Rio Tinto did two things. It merged with Consolidated Zinc Corporation, established in 1949 through a merger between a British manufacturing firm, the Imperial Smelting Corporation, and an Australian mining firm, the Zinc Corporation, and regarded as a local mining firm. After the merger, Consolidated Zinc managers did most of the negotiating with the government, improving relations between the government and the newly merged company[40].

Rio Tinto's second tactic was collaborating with the American Kaiser Steel in July

[36] John Hohnen (Rio Tinto, Australia) to David Brand (the Premier, Western Australia), 2 March 1962, RTA, Bow-115-268. Hadden F. King (Director in Charge of Exploration, Consolidated Zinc) to M. Mawby (Chairman, Consolidated Zinc, Australia), 19 March 1962, RTA, RTC-211-120-C-41-1.

[37] Duncan (Managing Director, Rio Tinto) to Alfred Bear (Chairman, Consolidated Zinc, London), 1 May 1962, RTA, Bow-133-281F.

[38] Hadden F. King to M. Mawby (Conzinc Riotinto of Australia), 29 November 1962, RTA, Bow-133-281F. Mawby to Duncan (Managing Director, Rio Tinto Zinc), 29 November 1962, RTA, Bow-133-281F.

[39] M.Mawby (Chairman, Conzinc Riotinto of Australia) to Crawford D. Nalder (Acting Premier, Western Australia), 30 July 1963, State Record Office of Western Australia, ITEM1963-0222V1.

[40] M.Mawby (Chairman, Consolidated Zinc, Australia) to C.W.M.Court (Minister of Industrial Development, Western Australia), 6 March 1962, RTA, Bow-115-268. Hadden F. King (Director in Charge of Exploration, Consolidated Zinc) to M. Mawby (Chairman, Consolidated Zinc, Australia), 19 March 1962, RTA, RTC-211-120-C-41-1. The Premier of Western Australia to M.Mawby (Chairman, Consolidated Zinc, Australia), 20 March 1962, RTA, RTC-211-120-C-41-2. Blake Pelly (Rio Tinto, Australia) to Tom Price (Kaiser Steel), Draft, 26 April 1962, RTA, Bow-115-268.

1962[41]. They invited Kaiser into their iron ore business to show their intention to establish a steel mill and contribute to the industrialization of Western Australia[42]. The state government expected that a local steel mill would process the iron ore mined there on a long-term basis, and Rio Tinto tried to appeal to the government's expectations[43]. The collaboration with Kaiser Steel was treated favourably by the local mass media[44]. Rio Tinto's collaboration with Kaiser Steel was also driven partly by its merger with Consolidated Zinc, as the latter company had a business relationship with Kaiser Industries, the parent of Kaiser Steel and Kaiser Aluminium with which Consolidated Zinc had run a joint Australian venture, Comalco, in bauxite mining and aluminium refining[45]. In the end, however, Rio Tinto had waited two years to receive the mining rights to the Hamersley deposits after obtaining temporary reserve rights, whose full term of two years was expiring.

3. Discussion: the bargaining power of Rio Tinto

3.1 Rio Tinto's counterparts in the iron ore case

In the case of the Western Australian iron ore development, the buyers were Japanese steel mills and general trading houses; the land supplier was the Western Australian government, and the competitors were local firms, such as Western Mining, Consolidated Goldfields, and BHP and American firms such as Cyprus, Utah Construction, and Kaiser. Competitors could also be collaborators, as with Western Mining and Kaiser.

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41 Memorandum of Agreement between Kaiser Steel Corporation ("Kaiser Steel") and the Rio Tinto Mining Company of Australia, which is changing its name to Conzinc Riotinto of Australia ("CRA"), 11 July 1962, RTA, RTC-211-120-C-41-2.

42 Rio Tinto to Arthur Griffith (Minister for Mines, Western Australia), 5 December 1961, RTA, Bow-115-268. Hohnen (Rio Tinto, Australia) to Val Duncan (Managing Director, Rio Tinto), 11 January 1962, RTA, Bow-115-268.

43 The Premier of Western Australia to M.Mawby (Chairman, Consolidated Zinc, Australia), 20 March 1962, RTA, RTC-211-120-C-41-2.

44 *Daily News*, Perth, 9 March 1962. *The West Australian*, 12 March 1962.

45 Raggatt(1968)p.78. Trengove(1976)p.33. Boyce(2001)p.549.

3.2 The case of uranium in Canada and Australia

When Rio Tinto entered into uranium development in the mid-1950s, the buyers were a state-owned company (in Canada) and the British government (in Australia); the land suppliers were smaller local firms, and the competitors were local and American firms. In the case of uranium development, favourable relationships with government buyers had a strong impact on not only the marketing of uranium ore but also the negotiations with land suppliers during the acquisition of the mines amidst competition from other firms. Moreover, good relationships with the British government were beneficial to financing.

3.3 The mining rights issue: the bargaining power of the WA government

When entering the iron ore business in Western Australia, Rio Tinto had to wait two years, until July 1963, to receive mining rights, having been granted temporary reserve rights in July 1961. Its uranium business exemplified Rio Tinto's strong bargaining powers in the British Commonwealth, but the iron ore case revealed that, even in Commonwealth countries, Rio Tinto did not always have those powers, especially when dealing with governments. It is striking how, in a region rich in natural resources, the Western Australian government had a strong bargaining power when granting mining rights. Behind this strong bargaining power was the industrial organization of the state's iron ore mining; the industry had many entrants. This market situation allowed the state government to give priority to local firms and take advantage of foreign firms for the sake of economic development. The state government's position was similar to that enjoyed by natural resource countries in later years.

Encountering the state government's strong bargaining power, Rio Tinto had no choice but to follow its policy, especially on mining rights. In this restricted situation, Rio Tinto had to localize itself by merging with Consolidated Zinc and insisting on contributing to the industrialization of the local economy by establishing a steel processing sector with Kaiser Steel (though the steel mill was never constructed).

4. Conclusion

In the uranium case, favourable relationships with governments, especially in British Commonwealth countries, were the prime factor in Rio Tinto's competitiveness. In the Western Australian iron ore case, however, this factor did not influence the company's competitiveness. Thus, the iron ore case demonstrates that Rio Tinto did not just depend on its relationships with governments when entering new fields.

The positive factors in Rio Tinto's iron ore venture were its relationships with Japanese trading houses as buyers and its relationships with collaborators such as Consolidated Zinc and Kaiser Steel, which contributed to its successful development of iron ore in Western Australia. The relationship with Kaiser facilitated a financial arrangement with an American bank syndicate led by the Bank of America in 1965[46] as well as displayed Rio Tinto's intention to establish a steel mill. The relationship with buyers enhanced its marketing capability, and its financial arrangement with American banks indicated its fund-raising capability. Both capabilities flowed from Rio Tinto's status as a global mining company based in London, the commercial and financial centre of the global economy[47].

However, these capabilities, based on Rio Tinto's global status, were not enough for its entry into iron ore development in Western Australia and had to be complemented by localization in order to overcome the barrier built by the state government. The merger with Consolidated Zinc filled the final gap between the global and the local.

[46] Trengove(1976)p.78. Hamersley Iron Pty. Ltd., Re: Proposed Bank Financing, 25 January 1965, State Record Office of Western Australia, ITEM1965-0099.
[47] On the commercial aspect of the City of London, Michie(1992), especially chapter 2.

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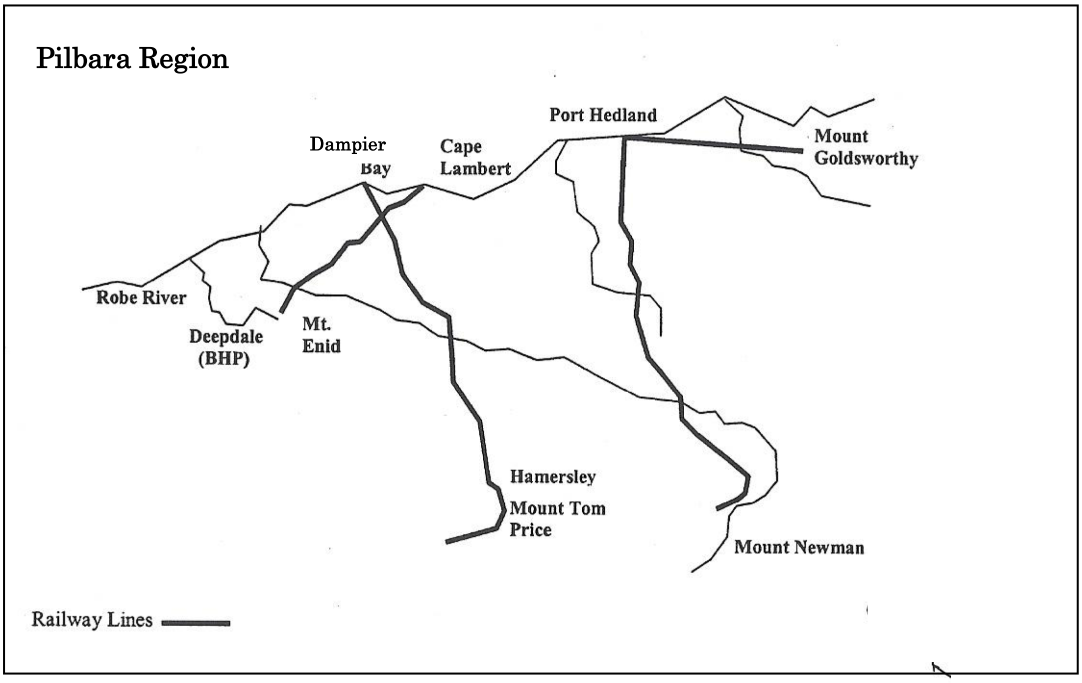
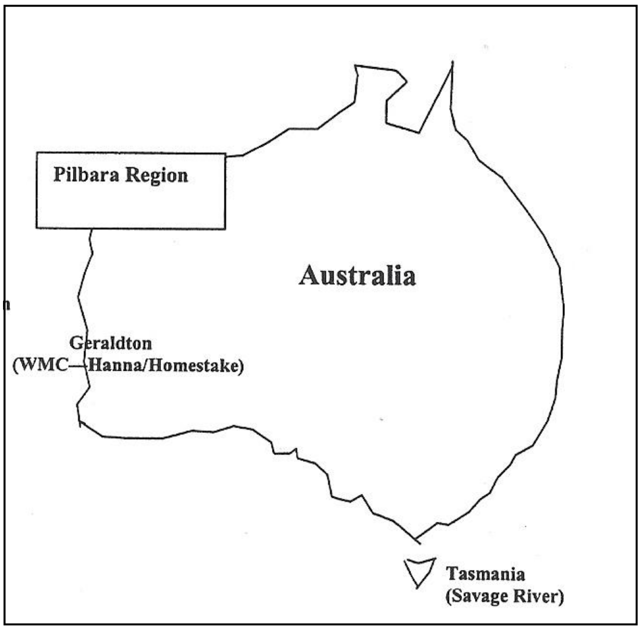
Map 1 Pilbara Region and Hamersley





Source: Boyce (2001)

* The author replaced Dampier with King Bay in the original map.

Table 1 The Process of Rio Tinto's Entry into the Iron Ore Business in Western Australia

The first half of 1959: Rio Tinto began exploration in Western Australia (hereafter 'WA') in collaboration with the Western Mining Corporation, Australia (hereafter 'WM').

The second half of 1959: Collaboration with WM was dissolved.

1960: RT continued exploration, mainly on Mt. Goldsworthy.

Dec. 1960: Australian government lifted its ban on iron ore exports.

The first half of 1961: RT changed its exploration target from Goldsworthy to Hamersley.

The second half of 1961: RT sought mining rights from WA government.

Feb. 1962: RT merged with Consolidated Zinc (Australia/Britain, hereafter 'CZ').

The first half of 1962: RT negotiated its royalty with the WA government. RT invited Kaiser Steel (America) to become its steel-making partner.

The second half of 1962: RT examined how to market iron ore to Japan.

July 1963: RT was given mining rights for Hamersley by the WA government.

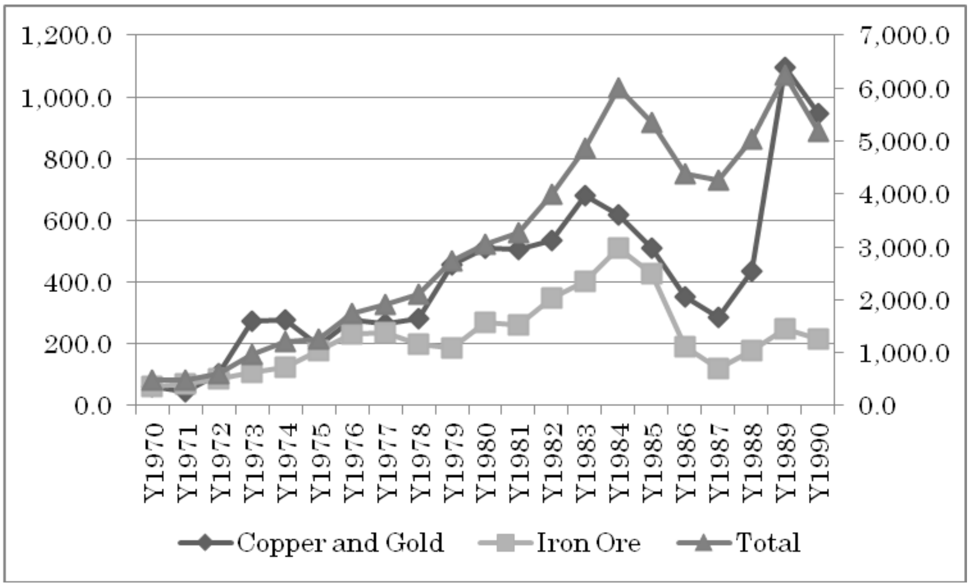
Jan. 1964: RT chose Dampier as its port for iron ore exports.

Dec. 1964: RT contracted iron ore sales with Japanese steel mills.

Jan. 1965: RT had a loan facilitated by a syndicate of American banks.

Aug. 1966: RT shipped its first iron ore from Hamersley to Japan.

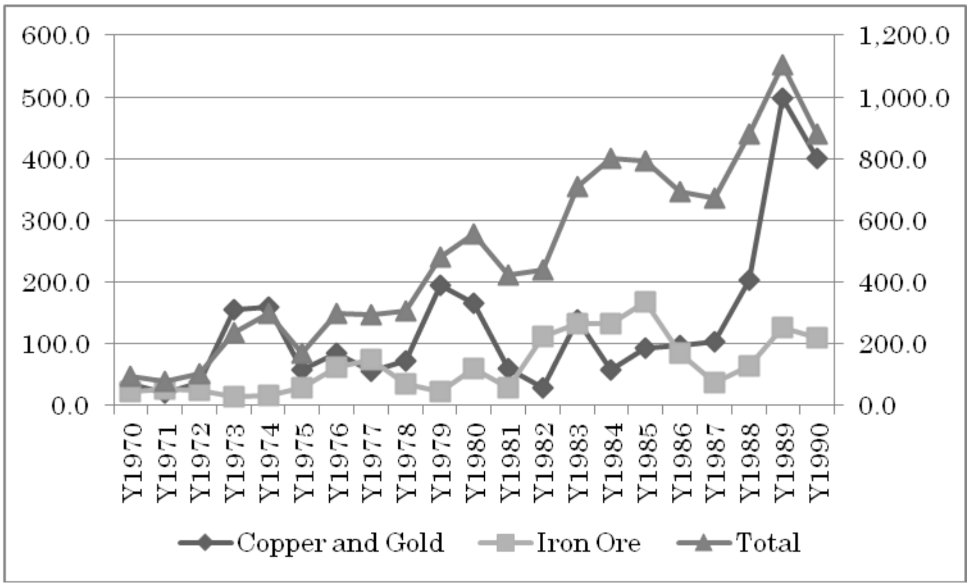
Figure 1 Sales of Rio Tinto by Products (Sterling Pounds Million)



Source: Rio Tinto's Annual Reports

* The left axis shows the sales of copper and gold and iron ore. The right axis shows the total sales.

Figure 2 Profits of Rio Tinto by Products (Sterling Pounds Million)

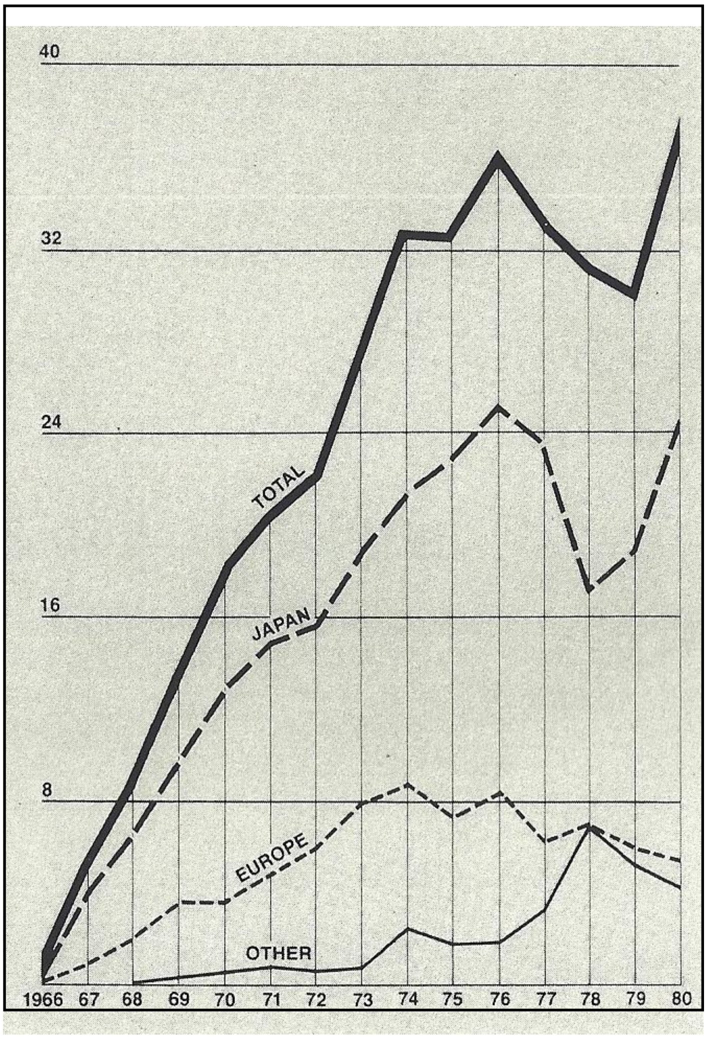


Source: Rio Tinto's Annual Reports

* The left axis shows the profits of copper and gold and iron ore. The right axis shows the total profits.

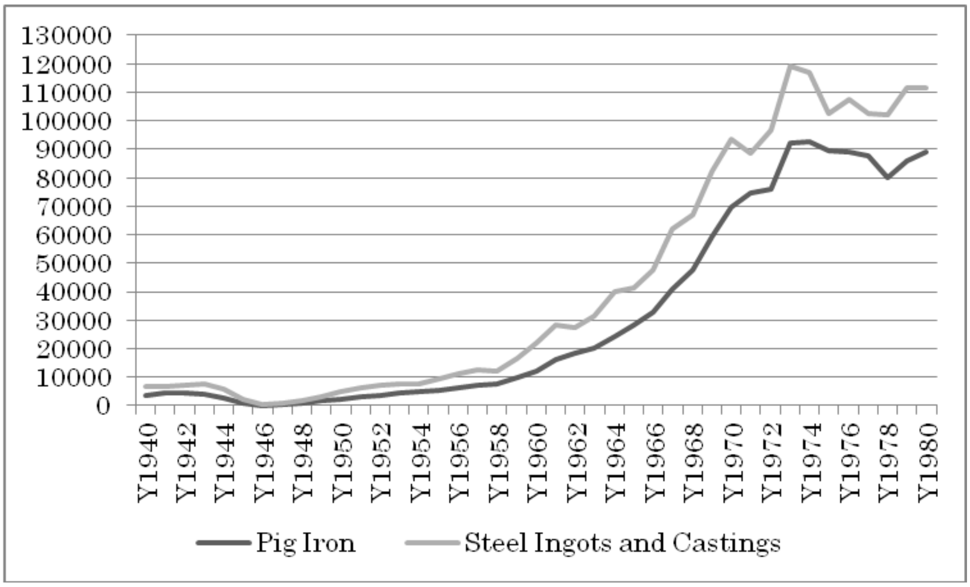
Figure 3 Iron Ore Shipments of Hamersley Iron Pty. Ltd.

(Thousand Wet Metric Tons)



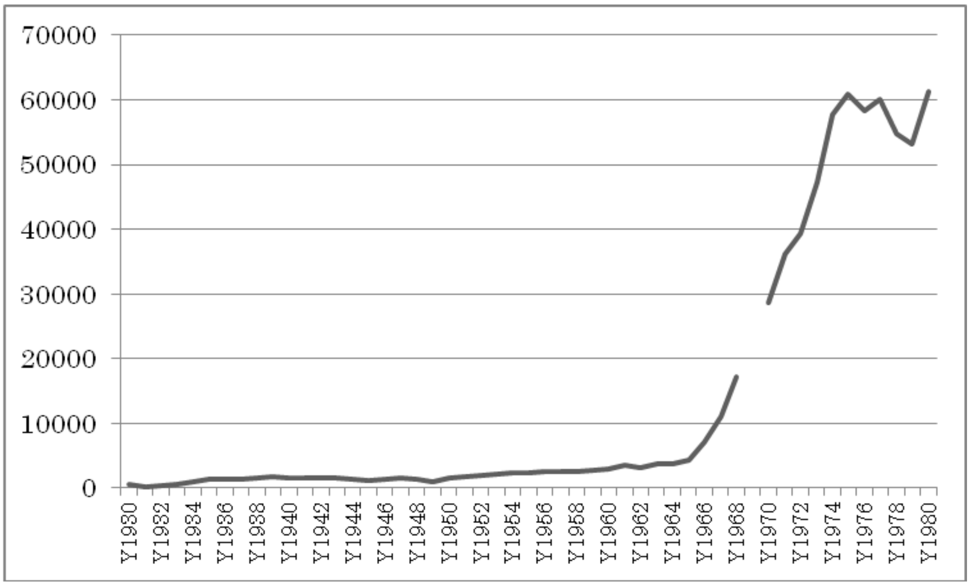
Source: Hamersley Iron Pty. Ltd. (1981)

Figure 4 Japan's Iron and Steel Productions (Thousand Metric Tons)



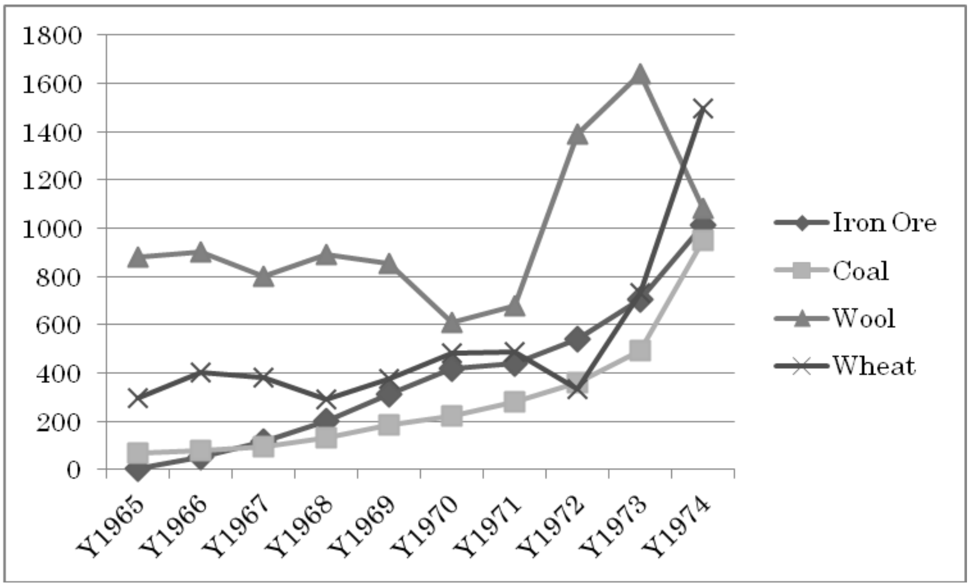
Source: Mitchell (1998)

Figure 5 Australia's Iron Ore Output (Thousand Metric Tons)



Source: Mitchell (1998)

Figure 6 Australia's Major Export Commodities (US Dollar Million)



Source: Crawford and Okita (1976)

Table 2 Japan's Iron Ore Imports (US Dollar Million)

	Y1965	Y1966	Y1967	Y1968	Y1969
Total Value	523.7	606.7	713.3	830.4	967.2
Value from Australia	2.8	24.8	97.8	164.0	273.7
Per cent from Australia	0.5%	4.1%	13.7%	19.8%	28.3%

	Y1970	Y1971	Y1972	Y1973	Y1974
Total Value	1207.2	1330.1	1274.0	1653.6	2073.8
Value from Australia	421.9	515.8	537.8	776.4	973.4
Per cent from Australia	35.0%	38.8%	42.2%	47.0%	46.9%

Source: Crawford and Okita (1976)

Table 3 Australia's Iron Ore Exports (US Dollar Million)

	Y1965	Y1966	Y1967	Y1968	Y1969
Total Value	3.03	51.53	115.43	201.06	311.15
Value to Japan	2.94	47.88	100.58	174.54	274.04
Per cent to Japan	97.1%	92.9%	87.1%	86.8%	88.1%

	Y1970	Y1971	Y1972	Y1973	Y1974
Total Value	419.17	438.94	539.26	706.61	1016.39
Value to Japan	368.8	381.39	471.64	606.42	781.7
Per cent to Japan	88.0%	86.9%	87.5%	85.8%	76.9%

Source: Crawford and Okita (1976)