

SOME ASPECTS OF JAPANESE MANUFACTURING INVESTMENT IN AUSTRALIA

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INTRODUCTION

In the current debate about restructuring the Australian economy, and its reorientation towards the Western Pacific, there has been remarkably little discussion of the relationship between exports, technological underdevelopment and foreign ownership. Current policy is based on developing new (and therefore small) enterprises which operate high technology ventures, in order to replace jobs being lost in the large establishment sector of manufacturing (Australian Academy of Technological Sciences 1983).

Besides giving assistance to new firms in sunrise industries Australia's future role within the Western Pacific will also depend upon the behaviour of the large transnational corporations (TNCs) who control trade and investment in this area. In Particular, foreign ownership and control of Australian manufacturing is substantial (36 percent of turnover). Therefore the success, or otherwise, of recent government exhortations for private business to restructure their operations will vitally depend on how the firms which control our manufacturing sector respond to the prospect of greater international competition from an Australian base. The existence of a Pacific Economic Community or similar regional grouping will clearly increase the locational options for foreign firms considering serving the Australian market, as well as those foreign and indigenous firms already located here. The question arises whether they will keep a manufacturing presence in Australia and take up the government's challenge to export to markets in East and Southeast Asia, or whether they will disinvest as tariffs decline, and import more products into Australia from a low wage country.

In order to make a judgement about possible outcomes, it is necessary to understand the present motivations and strategies of the corporations concerned, together

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1) Critiques of an over-reliance upon the small firm sector in industrial policy can be found in Storey (1983) and McLoughlin. (1984).

with the nature of their existing operations in Australia. Within the above broad concern this paper explores certain characteristics of Japanese-controlled manufacturing companies in this country. Although the importance of Japan to Australia is primarily through our raw material exports, the Australia-Japan trading relationship has also been augmented by a wide range of investments from Japan (see Edgington 1983a²).

As an export market for Japan, Australia ranks ninth, and Japan is the second largest importer into Australia behind the U. S. Japanese firms' export successes in Australia followed soon after their penetration of East and Southeast Asian markets. Those manufacturers who captured substantial shares of the Australian market tended to establish their own sales distribution channels rather than rely upon Japanese trading companies (Sōgō Shōsha) or local distributors. Faced with Australian protectionist policies certain firms eventually established local production operations behind the tariff wall. In the case of the car industry, the 85 per cent local component regulation has stimulated two Japanese firms (Toyota and Nissan) to move beyond simple assembly operations and invest substantial amounts of capital into new engine plants. Government policies towards the electronics industry have also led to some investment by Japanese manufacturers of telecommunications and consumer products (e. g. NEC and Sanyo).

In the discussion that follows, an attempt is made to ascertain to what extent this Japanese investment satisfies national development goals related to an industrial strategy based upon high technology.

JAPANESE DIRECT FOREIGN INVESTMENT IN AUSTRALIA-THE THIRD WAVE

To begin with, a few comments about the general characteristics of Japanese overseas investment in Australia may be in order. The conventional image of TNCs has been one of very large enterprises, predominantly of United States origin, with large-scale overseas operations concentrated in manufacturing industries which take advantage of R and D-intensive products developed by the parent company back in the home country. Whilst many Japanese firms also display these types of characteristics, a number of researchers have pointed to particular contrasts between North American or European firms with overseas operations and those of firms from Japan (Ozawa 1979, Sekiguchi. 1979).

Japanese direct overseas investment in Australia does in fact differ in a number of important respects from the patterns displayed by U. K. or U. S. based firms.

2) Australia is Japan's fourth largest trading partner (1982/3) and also ranks fourth among host nations to Japanese overseas investment.

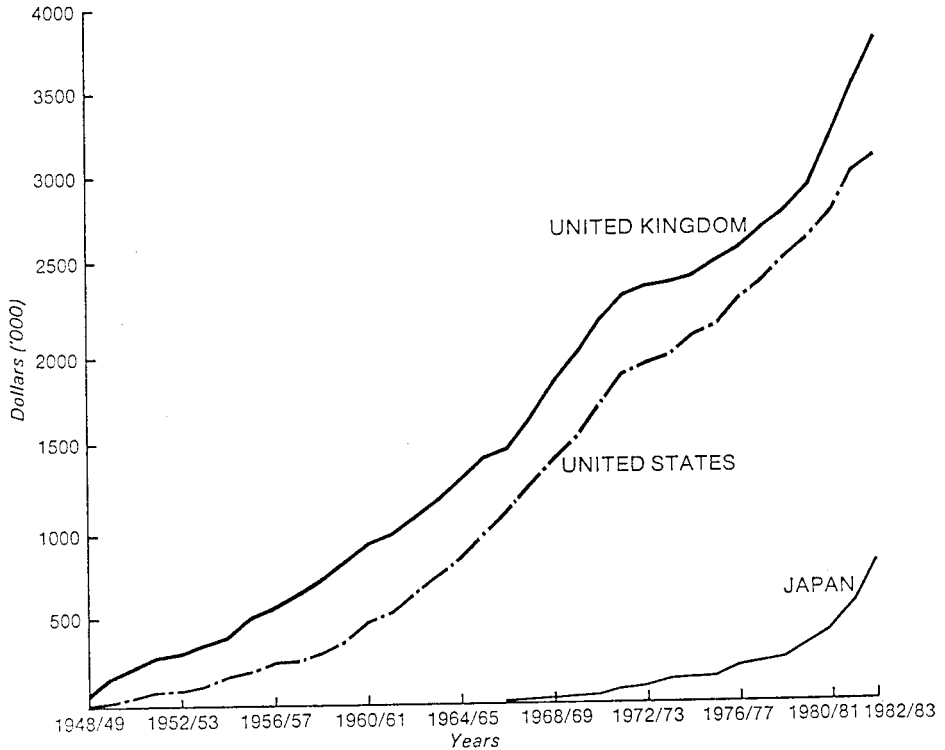


Figure 1 : Cumulative Value of Inflows of Foreign Investment into Australian Enterprises, 1948/49-1982/83 by Country of Origin
Expressed in Constant Dollars [1948/49=100]

Thus with respect to timing, Japan has only emerged as a significant source of overseas investment over the last 15 years or so. Figure 1 shows Japanese investment into Australia as a third wave trailing that from the U. K. and U. S. This reflects Japanese government policy which restricted foreign investment prior to 1969 in order to protect a then fragile balance of payments situation. Consequently, of the total level of foreign investment in Australia as at mid-1982, only 9.2 per cent came from Japan compared with 27.3 per cent from the U. K. and 32.7 per cent from the U. S. (ABS 1983). Yet if undistributed income is excluded as a measure of investment inflow, then capital funds from Japan appear even more significant. They have ranked either first or second in six out of the last ten years. (See Table 1³⁾).

In terms of the capital involved in Japanese investments, the major concentration

3) The undistributed component of net inflows of direct foreign investment reflects the ability of existing subsidiaries to invest out of previous generated earnings. A measure of direct foreign investment which excludes this component to some extent gives a better impression of flows to new capital funds from home country transnationals to their subsidiaries in host countries.

Table 1 : Annual Inflow of Direct Foreign Investment (excluding undistributed income) by Country of Origin, 1973/4-1982/3 (\$ million)

Year	U. K. %	U. S. %	JAPAN %	OTHER %	TOTAL %
1973/4	83 (1) (44.4)	47 (2) (25.1)	42 (3) (22.5)	15 (8.0)	187 (100.0)
1974/5	82 (1) (20.0)	53 (2) (12.9)	53 (2) (12.9)	223 (54.3)	411 (100.0)
1975/6	-8 (2) (-)	-54 (3) (-)	67 (1) (-)	-33 (-)	-38 (100.0)
1976/7	64 (2) (15.7)	191 (1) (46.8)	40 (3) (9.8)	113 (27.6)	408 (100.0)
1977/8	100 (3) (26.1)	157 (1) (41.0)	119 (2) (31.1)	7 (1.8)	383 (100.0)
1978/9	247 (2) (48.1)	295 (1) (57.5)	58 (3) (11.3)	-87 (-)	513 (100.0)
1979/8	-183 (3) (-)	202 (1) (36.7)	159 (2) (28.9)	7 (1.3)	551 (100.0)
1980/1	319 (2) (20.5)	437 (1) (28.1)	289 (3) (18.6)	512 (32.9)	1557 (100.0)
1981/2	293 (2) (15.1)	264 (3) (13.6)	361 (1) (18.6)	1021 (32.7)	1939 (100.0)
1982/3	401 (2) (28.8)	361 (3) (26.0)	462 (1) (33.2)	167 (12.0)	1391 (100.0)

figures in brackets indicate ranking, negative sign denotes net outflow

Source: A. B. S. (1983)

has been in resource developments-largely coal and iron ore mining. Here, Australia as a host country to Japanese overseas investment departs from the world-wide norm. Whereas Japan's total global direct overseas investment has been 31.9 per cent for manufacturing and 19.4 per cent for mining, in Australia the ranking of these two sectors has been reversed-only 25.9 per cent invested in manufacturing but 42.3 per cent invested in mining (Source: Ministry of Finance, Japan, in Australia Japan Economic Institute 1984).

By number of cases most of it involves small to medium scale enterprises operating in manufacturing (either processing or secondary industry) and distribution.

Thus, of all the companies operating in Australia having 25 per cent or more Japanese equity, over three-quarters had less than 100 employees, a little over half were engaged in wholesale and retail, whilst a further 17 per cent were engaged in manufacturing.

The extent to which Japanese investment differs from earlier waves of investment from the U. K. or U. S. can only be answered by comparing profiles of affiliated companies from these three different home countries. This data has been prepared by the author from trade directories which purport to cover all U. K., U. S. and Japanese subsidiaries, associate companies and branches in Australia at the beginning of the 1980s,⁴⁾ (see Table 2). Instead of using the conventional industry sectors, a functional classification has been adopted which divides companies and branches according to the function that they play in the parent corporation's global organisation (e. g. resource projects, overseas manufacturing, sales and distribution

4) See Oriental Economist, (1981), Australia Japan Economic Institute, (1981), Australian British Trade Association (1982), and American Chamber of Commerce in Australia, (1983). Unfortunately the trade directory data on which the analysis has been based does not permit comparisons by employment or capital value.

5)
etc.)

The distributions in Table 2 indicate important differences between the investment motives and strategies of Japanese companies and those from the U. K. and U. S. Japanese investment for example shows a marked overrepresentation of mining and other resource-oriented companies (16.3 per cent of the Japanese total but only 8.0 per cent of U. K. and 6.4 per cent of U. S. totals). Japanese trade-oriented functions such as importers are also overrepresented in Australia and amount to over twice the proportion from the U. K. Conversely, there is a striking underrepresentation of Japanese firms in Australian manufacturing-less than 10 per cent compared with about a third of firms from the U. K. and U.S.

This particular pattern is closely bound up with many of the general characteristics of Japanese direct overseas investment. For example, it reflects the overall importance of exports in Japan's economic development and also the importance of a stable supply of industrial and energy resources. Moreover, apart from recognising the economic sense of investing in labour-intensive manufacturing in the developing countries, and investing in certain energy-intensive operations (e. g. aluminium smelting) or pollution-intensive operations (e. g. iron ore sintering) offshore, there has traditionally been an underlying resistance among Japanese companies to manufacture abroad.⁶⁾ Cultural barriers and inhibitions against managing subsidiaries in overseas environments have been reinforced by fears about the quality of overseas labour and component suppliers, compared to the industrial situation in

5) A full legend for the functional classification used in Table 2 is as follows:

A. Resource-oriented companies: those local subsidiaries whose major activity is either primary production for export (e. g. cattle stations or mining enterprises) or the processing of raw materials prior to their export (e. g. wool scouring, wood chipping or aluminium smelting). This group also includes some companies involved in mineral exploration and stockpiling of resources (e. g. coal) prior to export.

B. Manufacturing firms: those firms engaged in secondary manufacturing in Australia (in addition to any import and distribution functions) such as automobiles (e. g. Toyota and Nissan) and electronic products (e. g. Sanyo and Matsushita).

C. Trade-oriented companies: those firms engaged in wholesaling activities (either importing or exporting). They comprise the Japanese general trading companies (*Sōgō Shōsha*) such as Mitsui and Mitsubishi; companies who specialise in organising the export of raw materials; and sales firms who have been established to import, distribute and service overseas products in Australia-usually subsidiaries or representative offices of overseas-based manufacturing companies.

D. Service-oriented companies: This group includes local merchant banks and finance companies as well as representative offices of overseas banks; other financial services such as insurance companies and accounting firms; companies engaged in other services industries such as shipping, tourism, business services and construction; and a miscellaneous category which includes holding companies and other companies set up to invest in Australian resources and real estate.

6) This has changed recently due to political pressures to set up manufacturing plants in the United States and Europe in response to growing protectionist policies overseas.

Table : 2 : Functional Distribution of Subsidiaries, Associates and Branches from United Kingdom, United States and Japan (%)

Function*	U. K.	U. S.	JAPAN
A. RESOURCES-ORIENTED			
1. Agriculture etc.	0.9	0.5	3.4
2. Mining (incl. oil exploration)	3.1	4.2	7.3
3. Processing-Ag. etc.	3.0	—	2.9
4. Processing-Minerals/Oil	1.1	1.6	2.6
Sub total	8.0	6.4	16.3
B. MANUFACTURING :	37.5	31.3	7.6
C. TRADING-ORIENTED :			
1. General wholesale/trading	0.6	0.5	7.1
2. Exporters	0.7	0.1	5.8
3. Manufacturing Representative Offices	—	1.4	7.1
4. Importers, Distributors, Sales	18.9	26.4	26.5
Sub total	20.1	28.4	46.5
D. SERVICES-ORIENTED :			
1. Banks and Finance Cos.	3.3	3.5	4.2
2. Bank Representative Offices	0.7	6.8	5.0
3. Insurance, other financial services	4.7	3.5	3.7
4. Other Services	19.3	23.5	9.7
5. Miscellaneous	6.4	1.5	7.1
Sub total	34.4	34.0	29.7
TOTAL	100.0	100.0	100.0
	(N=1033)	(N=739)	N=381)

*for definition see footnote 4

Source : see footnote 5

Japan.

The distribution of U. K. and U. S. affiliated companies on the other hand is a mirror image to that of the Japanese companies. There is a general under-representation for example, in the number of resource-oriented companies, except in the case of U. K. -based agricultural processing firms. British and American firms both show a preference for establishing secondary manufacturing companies rather than trade-affiliates. This appears to reflect the general finding by Morgan (1979 : 81) that U. K. and U. S. -based firms are more likely to supply a higher proportion of foreign markets by local production rather than by exports-the very opposite of the position of Japanese companies.

In the services, functions, Japanese firms exhibit roughly the same relative overall proportion as U. K. and U. S. affiliated companies. In the types of companies such as advertising agencies and other business services the Japanese are under-repre-

sented, perhaps due to cultural barriers to establishing Japanese companies in these activities in the Australian market when compared with British or American transnationals.

JAPANESE-CONTROLLED MANUFACTURING OPERATIONS IN AUSTRALIA

Industrial Sectors

Within Australian manufacturing itself the distribution of Japanese direct foreign investment is far from even. When employment in Japanese controlled manufacturing enterprises is classified by industry sector (2-digit ASIC 21-34) it shows a higher concentration than the national distribution of manufacturing employment (see Table 3). Nearly 70 per cent of its employment is in the transport equipment industry (mainly passenger vehicles and components), whilst most of the remainder is in the two other major groups—other manufacturing and equipment' (mainly electrical equipment such as colour TVs) and 'miscellaneous manufacturing' (accounted for by a single tyre producer, Bridgestone).

Japanese manufacturing has also been more limited in its scope when compared

Table 3: Distribution of Employment in Japanese Controlled Manufacturing Plants and Total Australian Manufacturing Plants by Industry Sector, 1981

INDUSTRY SECTOR	Japanese-Controlled Mfg. Employment* (%)		Total Australian Mfg. Employment ('000) (%)	
Food, beverages, tobacco	56	(0.4)	183.6	(16.0)
Textiles	215	(1.6)	36.9	(3.2)
Clothing and Footwear	—	—	78.6	(6.8)
Wood products	100	(0.7)	78.9	(6.9)
Paper, printing etc.	10	(0.1)	102.4	(8.9)
Chemicals etc.	342	(2.6)	59.9	(5.2)
Glass, clay etc.	—	—	45.9	(4.0)
Basic metal products	—	—	96.4	(8.4)
Fabricated metal products	—	—	112.9	(9.8)
Transport equipment	9,855	(74.2)	128.4	(11.2)
Other machinery/equipment	1,576	(11.9)	161.8	(14.1)
Leather etc. and N. E. C.	1,234	(9.3)	64.7	(5.6)
TOTAL	13,388	(100.0)	1,150.4	(100.0)

*excludes iron ore mining and pelletising operations, and smelters and plants still under construction in 1981.

Sources: Japanese-controlled manufacturing derived from trade directories and by survey.
Total Australian manufacturing employment derived from ABS, *Manufacturing Census, Small Area Statistics, 1980-81*, various issues.

Table 4: Distribution of U. K., U. S. and Japanese Manufacturing Subsidiaries, by Capital Value (%)

<i>Industry Sector</i>	<i>U. K.</i> ^(a)	<i>U. S.</i> ^(a)	<i>Japan</i> ^(b)
Food etc.	9.6	8.1	1.8
Textiles	2.3	0.5	1.4
Clothing and Footwear	1.3	0.4	—
Wood products	0.6	0.2	3.4
Paper, Printing etc.	2.6	2.7	0.2
Chemicals	28.0	28.3	15.4
Glass, clay etc.	2.2	1.3	—
Basic Metal products	42.6	18.4	—
Fabricated metal products	0.7	1.9	—
Transport Equipment	3.1	16.4	60.0
Other machinery/equipment	5.1	18.8	7.8
Leather etc. and N. E. C.	0.8	4.1	9.7
TOTAL	100.0	100.0	100.0
(N = \$ million)	(7074.3)	(6270.4)	(218.4)

Note: Majority equity or 50/50 joint ventures only

Source: (a) Department of Industry and Commerce (1976)

(b) Australia-Japan Economic Institute, (1981), *Oriental Economist* (1981)

Table 5: Distribution of U. K., U. S. and Japanese Manufacturing Subsidiaries, by Number (%)

<i>Industry Sector</i>	<i>U. K.</i>	<i>U. S.</i>	<i>Japan</i>
Food etc.	7.7	8.6	7.4
Textiles	8.0	1.5	14.8
Clothing and Footwear	2.2	1.2	—
Wood products	1.5	0.7	3.7
Paper, printing etc.	5.8	5.1	3.7
Chemicals	13.8	25.0	7.4
Glass, clay etc.	4.9	2.9	—
Basic Metal products	5.5	2.9	—
Fabricated metal products	12.0	6.6	—
Transport Equipment	5.5	5.6	22.2
Other Machinery/Equipment	28.0	33.1	25.9
Leather etc. and N. E. C.	4.9	6.6	14.8
TOTAL	100.0	100.0	100.0
(N =)	(325)	(408)	(28)

Notes and Source, see Table 4.

with investment by British and American transnationals; the latter has extended over a wide area ranging from metal processing, petrochemicals, pharmaceuticals, clothing, cosmetics and paints. The single industry group 'transport equipment' accounts for two-thirds of Japanese manufacturing by capital value (see Table 4) and a quarter of the number of companies (see Table 5). These are much higher than the comparable proportions in the U. K. and U. S. distributions.

In terms of capital value, 'basic metal production' and 'chemicals and petroleum' together make up about 70 per cent of total U. K. manufacturing, and about half that from the U. S. (Table. 4). Yet prior to the estimated \$255 million investment in the Gladstone aluminium smelter in, 1980, Japan had no directly controlled investment in Australian basic metal production. Similarly, whilst over a quarter of U. K. and U. S. investment has been in chemicals (mainly petrochemicals), Japan's investment in this sector has been less substantial (only 16.9 per cent). Prior to the estimated \$20 million investment in a coal liquefaction pilot plant, Japan's involvement here was confined to production of industrial salt in Western Australia which was then exported back to TNCs in Japan.

Geographic Distribution

Due to the very high over-representation of Japanese investment in passenger vehicle production, Melbourne and Adelaide have been the locations for most Japanese transnational activity in manufacturing. Together, they have captured 88 per cent of Japanese controlled manufacturing employment compared with only 35.4 per cent of total Australian employment in the manufacturing sector (see Table. 6).

Sydney, on the other hand, captured nearly half of Japanese-controlled employment in the second largest industry group 'other machinery and equipment' But overall it had an under-representation of 6.1 per cent, compared to its share of total Australian national manufacturing employment of 27.8 per cent a ratio of. 0.2 : 1.

Other regions in the remainder of Australia were highly under-represented and recorded only small employment numbers. Thus Perth was the only State capital to capture Japanese controlled manufacturing employment. Certain industry groups however-textiles, wood products and chemicals-were significantly over-represented in the remainder of Australia when compared to their employment shares of total national manufacturing employment. This is due to the Japanese strategy of investing in Australian resource projects (e. g. wool scouring, timber logging and salt production) which are tied to peripheral resource regions away from the major urban areas.

Apart from resource processing projects the high geographic concentration of Japanese manufacturing plants reflects their predominantly local market orientation. In addition, as argued elsewhere (Edgington 1984), due to the extreme concentration

7) Dicken (1976) has pointed out the difficulty involved in determining the degree to which the parent company 'controls' its subsidiaries and cautions against making a simplistic interpretation based merely upon a majority equity holding. In the present analysis a fairly wide definition of control will be adopted as follows: either the Japanese equity in a subsidiary is 50 per cent or more, or where the enterprise is a joint venture is of equal shares, or where the largest combined share in a joint venture is of Japanese origin, or where a Japanese executive has been dispatched to the Australian company.

Table 6 : Geographic Distribution of Employment in Japanese Controlled Manufacturing Plants and Australian Manufacturing Plants by Cities and Regions, 1981

INDUSTRY	Sydney			Melbourne			Adelaide			Perth			All other areas			TOTAL		
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)
Resource-oriented mfg*	4	1.1	21.4	27	7.8	22.1	—	—	5.8	4.0	10.8	5.0	300	80.9	45.6	371	100.0	100.0
Transport Equipment	—	—	23.6	6080	61.7	38.7	3775	38.3	13.3	—	—	4.0	—	—	5.4	9855	100.0	100.0
Other machinery and equipment	783	49.7	39.3	643	40.8	29.3	—	—	9.8	—	—	4.7	150	9.5	13.9	1576	100.0	100.0
All other manufacturing**	30	1.9	28.9	50	3.1	28.7	1026	76.0	17.4	—	—	5.5	300+	15.9	2.0	1586	100.0	100.0
TOTAL	817	6.1	27.8	6800	50.8	28.2	4981	37.2	7.2	4.0	0.3	5.1	750	5.6	15.8	13388	100.0	100.0

(a) = employment levels in Japanese-controlled manufacturing plants

(b) = percentage distribution of (a)

(c) = percentage distribution of employment in total Australian manufacturing plants

* comprises food etc., textiles and wood products

** comprises clothing and footwear, paper and printing etc., chemicals etc.

+ basic metal products, fabricated metal products and leather and industry n. e. c.

+ Comprises employment generated in salt production at Dampier Sound, Western Australia

Source : as for Table 3

of industrial locations in Australia, Japanese manufacturing subsidiaries have had no option but to follow the locational behaviour of existing companies in similar industrial categories.⁸⁾ Sydney and Melbourne together comprise the centre of the Australian market and are the major sources of skilled labour, capital, materials and corporate control.

The preference of Japanese secondary manufacturers to establish their plants at the centre of the Australian market is further confirmed in Table. 7. This compares the net growth of employment (i. e. total growth less job losses) in Japanese-controlled plants from 1971 and 1981 with employment change in total Australian manufacturing plants during the same period. Acquisitions of existing factories by Japanese corporations (such as Mitsubishi Motors' takeover of Chrysler's local subsidiary) were omitted in this analysis in order to concentrate on new 'green fields' location decisions.

The results show that Melbourne and Sydney recorded over 75 per cent of the increase in net new jobs in the Japanese firms as defined. Over 60 per cent of the increase was located in Melbourne, reflecting the growth of new Japanese plants in the automobile industry. This preference to locate three quarters of new jobs generated by Japanese controlled manufacturing in Australia's two largest urban areas stands in stark contrast to overall manufacturing employment losses in these cities of nearly 90 per cent of total manufacturing employment decline during the 1971 to 1981 period.

JAPANESE MANUFACTURING AND AUSTRALIAN INDUSTRIAL DEPENDENCE

Japanese manufacturing investment in Australia, like Japanese exports has tended to be highly concentrated in certain industries and geographical areas, and the effects of these concentrations have been further heightened by the speed of their expansion. This section of the paper will attempt to take a wider view of the impact of Japanese manufacturing investment and examine whether the strategy of Japanese corporations is compatible with Australia's aims at being a high technology export-oriented manufacturing country.

In order to piece together some of the behavioural characteristics of Japanese subsidiaries in medium to high-technology manufacturing (i. e. excluding resource-processing industries) analysis is made of some preliminary results from an interview-based survey of Japanese controlled firms. The firms surveyed by the author represent approximately 95 per cent of total manufacturing employment in Japa-

8) The decentralised color TV factory of Sanyo's in Albury-Wodonga represents the solitary exception.

Table 7 : Distribution of Employment Growth of Japanese Controlled Manufacturing Plants and Total Australian Manufacturing Plants, 1971-1981.

EMPLOYMENT GROWTH	Sydney	Melbourne	Adelaide	Perth	All other areas	Total
Japanese controlled	+304	+1,509	—	+15	+535	+2363
Mfg. employment	(+12.9%)	(+63.9%)	(—)	(+0.6%)	(+22.6%)	(100.0%)
Total Australian	-75.1	-60.3	-18.5	+1.9	-0.4	-152.4
Mfg. employment ('000)	(-49.3%)	(-39.6%)	(-12.1%)	(+1.2%)	(-0.2%)	(100.0%)

Source : as for Table 6

nese-controlled enterprises in Australia. Following the framework established by Britton and Gilmour (1978) evidence is presented on these firms' behaviour with regard to imports, exports and research and development.

Imports

Firms surveyed were asked to present data concerning their patterns of purchases—both domestic and imports. The responses indicate that Japanese companies have high levels of imports of both components and also finished products for resale (see Table 8). Of the total inputs of these firms (i. e. less labour and overheads) two-thirds reported that 25 per cent or more supplied components from their parent company in Japan, and nearly half replied that 50 per cent or more came from the parent in Japan. In fact 12 out of the 15 firms nominated their parent company as their number one supplier of components (see Table 9). The non-local multipliers from such a high rate of imports are considerable and result in a leakage of growth impulses from Australia back to Japan.

Even more important is the very high percentage of imported finished goods as a proportion of total sales. Table 10 shows that nearly three-quarters of respondents imported more than 25 per cent of their turnover, or conversely manufactured less than 75 per cent of their total sales within Australia. Most importing for resale is undertaken to maintain a full line of equipment and to maximise world sales in order to reduce Japanese marginal costs in the parent company's plant.

Not only to these firms import from their parent company back in Japan but final products and components also come from affiliated companies in other countries of the Western Pacific. One electronics firm involved in local Australian production exhibited a very high degree of integrated production; besides sourcing components from Japan it was involved in cross hauling 20 per cent of its component requirements and 8 per cent of its final sales volumes from subsidiaries in Malaysia, Singapore and Taiwan.

Unfortunately, direct comparison with a full range of subsidiaries from other home countries is not possible. Whilst Brash (1965 : 205) found U. S. subsidiaries imported a very low proportion of finished goods in their local sales (average of

Table 8 : Value of Imported Components from Parent Company as a Percentage of Total Inputs*

<i>Percentage Value</i>	<i>No. of responses</i>	<i>Cumulative %</i>
0-15	4	100%
16-25	—	93.3
26-50	3	66.7
51-75	5	46.7
76-85	1	13.3
86-100	1	6.7
	N = 15	

*for definition see text

Source : author's survey

Table 9 : Location of Purchases, Raw Materials and Components by Top 3 Suppliers

<i>Source</i>	<i>Supplier No. 1</i>	<i>No. 2</i>	<i>No. 3</i>	<i>Total</i>
Parent company in Japan	12			12
Subsidiary in Western Pacific		2	2	4
Other company in Western Pacific	1	1		2
Other company in Europe		1		1
Sydney	1	1	6	8
Melbourne	1	9	4	14
Adelaide		1	2	3

Source : author's survey

Table 10 : Value of Imported Products as Percentage of Total Sales

<i>Percentage Value</i>	<i>No. of responses</i>	<i>Cumulative (%)</i>
0-15	3	100.0
16-25	1	80.0
26-50	4	73.3
51-75	5	46.7
76-85	1	13.3
86-100	1	6.7
	N = 15	

Source : author's survey

Table 11 : Locally Produced Vehicles as a Percentage of Total Australian Sales

<i>Car Plan Producer</i>	<i>Percentage of Total Sales Made in Australia</i>
General Motors	91
Ford	90
Mitsubishi	63
Toyota	43
Nissan	54
	TOTAL
	61

Source : A. C. T. U. (1983)

4.3 per cent), this figure must surely have risen in the last two decades.

A limited comparison however is available in the two major industries where Japanese manufacturing is concentrated. Thus in the car industry it is revealing to understand that while Ford and GMH produced over 90 per cent of their total sales in Australia (including light and heavy commercial vehicles) the three Japanese companies produce only 52 per cent of their sales locally (see Table 11). Essentially, the Japanese car makers in general and Nissan and Toyota in particular are importers and assemblers rather than manufacturers. Ford and General Motors have undertaken high levels of local manufacturing and account for 72 per cent of the industry's employment with only 45 per cent of industry sales. In some respects this reflects the timing of Japanese investments, as referred to earlier. General Motors was the first large-scale overseas manufacturer to arrive in Australia in 1948. At that time it was forced through necessity to undertake a very large local content in order to guarantee production. Even today, local content on some GMH models runs as high as 95 per cent (see *Financial Review* 2/8/83).

In the case of color TV production five out of six local producers are wholly or partly owned by Japanese TNCs, yet prior to the entry of Japanese firms in to the Australian market local production of TV receivers involved fully integrated manufacture: most components were supplied from local sources and the firms with the least Japanese involvement-AWA and Philips-were at that time (circa 1972) the largest producers of components. After the introduction of color TV transmission and the firms with the arrival of four Japanese producers, the bulk of components are now imported for local assembly. Due to minimum local content regulations in this industry the TV cabinet is the major item produced locally. It is significant however, that the only manufacturer using local components at all, at present, is the subsidiary of Philips Industries, which has no Japanese equity. (Industries Assistance Commission. 1983).

Exports

The Japanese companies included in the survey generally operate as extensions of their parent firm. Their target is the local Australian market. They are poor exporters. 20 per cent stated that they did not engage in any exports at all, and a further 40 per cent only exported less than one per cent of total sales. Only one firm reported exports greater than 5 per cent of total sales.

Moreover, five out of the twelve firms who did record some level of exports were tied to exporting their products either back to their parent company in Japan or a subsidiary elsewhere. That left just seven out of the 15 who could be said to be

9) For example, the export of cars from Mitsubishi Motors' Adelaide plant to Britain is tied to the newly formed 'Lonsdale Car Company' whose chairman is also director of ↗

penetrating export markets. Seven out of the 15 firms also recorded that they were subject to export restrictions imposed on them by their parent company, usually restricting their 'Territory' to New Zealand, PNG and the South Pacific, rather than the lucrative and dynamic economies of the Western Pacific.

Again it is not possible to compare these Japanese firms either with subsidiaries of other countries or with the behaviour of similar domestic firms. However, the overall lacklustre performance of Australian firms in general in the exports of manufactured goods has been noted (Department of Trade 1983); as has the relatively high incidence of restrictive export arrangements. Of 2,643 companies with financial or terminal links with overseas companies covered by a Department of Trade Survey, 408 (15.4 per cent) were subject to some kind of export restraint.

R and D, and Innovation

Many reports have shown that Australia's private expenditure on R and D for manufacturing applications is extremely modest. (See Industries Assistance Commission 1982). Not surprisingly this is reflected in the survey of Japanese companies, who were asked to state what percentage of sales were accounted for by R and D work designed to produce new or improved products and processes. Two-thirds stated that nil expenditure was set aside for this purpose, and 6 out of the 15 firms said no employees were currently engaged on R and D work, even adapting imported technology to the requirements of the local environment.

The general picture that emerges shows that hardly any basic research is conducted in Australia by the Japanese firms. On the other hand, there is a small effort in the field of product development (e. g. Toyota's aluminium foundry) and local adaptation (e. g. NEC's production, which is closely tied to the requirements of Telecom Australia). Whilst there is no clear indication that the Japanese firms conduct any less research locally than U. S. or British controlled subsidiaries, Brash (1965 : 151) did find that in the 1960s some wholly owned American firms received specific encouragement from their parent companies to engage in original product development. Thus GMH and Ford for example, have been recognised in Australia for the quality of their localised design and development work.

The general autonomy of the local subsidiary to innovate, that is develop new products and new markets, was also ascertained by survey. The responses identified a serious level of 'Truncation' (see Hayter 1982) which occurs when a subsidiary does not carry out all the functions-from original research to marketing-necessary for developing products and selling its goods: one or more of these functions

↘ 'Colt' a Mitsubishi company. The motivation behind this operation, which incurs a substantial loss due to the high cost of Australian manufacturing, is because Mitsubishi has no quota allowance in the British market-unlike Toyota and Nissan which have had a historical share of this market.

is usually carried out by the foreign parent firm.

In the case of Japanese manufacturing subsidiaries not only is R and D in the hands of the parent company, but in the majority of cases decision making about new products, new markets and the provision of technical services is undertaken by or with the Japanese parent rather than independently by the local subsidiary (see Table 12). This has serious implications not only for the innovativeness of the local subsidiary, but it also reduces the number of jobs the firm can offer locally and restricts the range of skills required.

Structural change in Australia depends upon industrial innovation and investment which produces new processes, products and designs. It also depends upon investment in R and D and the development of export markets in order to overcome the small domestic market. In this sense, the behaviour of Japanese controlled firms has contributed to Australian industrial dependence. However, Japanese firms have not been alone in this regard as truncation in the Australian economy occurs in a more general way, due to the behaviour of all foreign firms in allocating roles to their subsidiaries in light of the world wide strategies of their parent corporations.

Conclusions

This paper has commented upon certain characteristics of Japanese manufacturing enterprises in Australia, especially where these have differed from patterns of investment displayed by UK and US controlled enterprises. Evidence has also been presented that suggests that Japanese companies are unlikely to contribute towards a national goal of developing and exporting high technology products to the dynamic Western Pacific economy.

The author has argued elsewhere that, due to the strategies employed, by Japanese corporations an unbalanced vertical international division of labour is occurring in the Pacific Rim (see Edgington 1983b). The USA has been the major recipient of Japanese high technology manufacturing, research and industrial cooperation. In the countries of East and Southeast Asia, Japan concentrates routine and unskilled labour activities where employment costs are lowest. In Australia, Japanese trade and investment has produced an export specialisation in natural or processed re-

Table 12 : Decision Making Related to Innovations.

Decision \ Location	Taken Locally	Negotiated	Taken in Japan	Total
New Products	3 (20.0)	4 (26.7)	8 (53.3)	15 (100.0)
New Markets	5 (33.3)	4 (26.7)	6 (40.0)	15 (100.0)
Source of Technical advice	2 (13.3)	5 (33.3)	8 (53.3)	15 (100.0)

Figures in brackets indicate percentages

Source: author's survey.

source-based goods. Both Toyota and Nissan for example have entered the government's motor vehicle export credit scheme by exporting energy-intensive aluminium castings back to Japan rather than developing the exports of design and skill-intensive engines.

The primary reason for Japanese manufacturing investment in Australia has been defensive: the preservation of Japanese markets in particular sectors (e. g. automobiles and color TVs) in the face of actual or potential trade barriers. In the absence of such barriers-especially non-tariff barriers such as local content plans or 'voluntary' export restrictions-most Japanese firms have been perfectly able to compete in the Australian market by exporting from Japan.

In quantitative terms the input of Japanese manufacturing investment on Australian employment is very small. Only in the case of automobile assembly is the impact of any magnitude, and this has benefitted Melbourne and Adelaide. The indirect employment effects are more difficult to identify. Where local content regulations do not apply, Japanese firms have brought with them a distinctive technology which leads to a very high level of imports and a low interaction with the Australian economy. The local subsidiary is in effect an extension of the parent company's export drive.

Japanese subsidiaries have little or no mandate to innovate or market their products in a way that might reduce the concentration of strategic functions in their parent company back in Japan. Manufacturing subsidiaries have been introduced only for products at the later stages of the product life cycle. The only manufacturing tasks that have been assigned to the Australian subsidiary have been at the assembly end of the industrial process. In theory, import substitution investment is supposed to benefit the host country by manufacturing locally what was previously imported, thereby saving foreign exchange and creating jobs. However, if Australian subsidiaries have to import large amount of parts, equipment, research, design and technical services, then it is Japan that benefits most. Due to the process of truncation, growth may occur in the Australian economy but technological development and development potential will be transmitted to the country containing the headquarters of the parent TNC.

It is an open question as to whether a reduction of trade barriers would lead to the closing down of existing Japanese manufacturing subsidiaries here in favour of an increase of imported components, goods and services. Japanese firms in general tend to have long-term priorities which are very different from those of the UK and US. Thus in Australia many firms have engaged in a long term marketing

10) A good example is in the semi-conductor industry where many US manufacturers have shifted assembly operations to low labour countries. In the same situation Japanese firms have introduced fully automated assembly thereby overcoming the wage cost disadvantage they would have otherwise incurred (March 1983).

plan before commencing manufacturing.¹¹⁾ It is therefore likely that US-based manufacturing firms would be the first to engage in cost cutting measures such as the transfer of production capacity to neighbouring low wage countries.

This case study of Japanese manufacturing subsidiaries provides a general lesson: in the past Australia has relied too heavily upon importing technology in the form of direct foreign investment. Yet whilst the recent encouragement given to new indigenous research and development firms working in specified fields is a welcome policy response,¹²⁾ it is also necessary to create industrial conditions that are conducive to the *general* development of Australia's innovative capacity. There is therefore a fundamental need for a broad strategy which will press for TNC's to restructure their activities in Australia in order to achieve a greater measure of import substitution and increased exports in a range of goods that compliment Australia's comparative or geographic advantages.¹³⁾ The local subsidiary would then be responsible for a full range of operations from R and D through design, production, marketing and exporting a limited selection of the parent's products.

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11) For information on Toyota's long term investment plans see the *Age* 22/7/83, and for NEC's long term commitments in Australia see the *Age* 24/6/83.

12) See press release on *Venture Capital Market* by the Minister for Industry and Commerce and the Minister for Science and Technology, 14/9/83.

13) The Canadian Government, is reported to be developing a policy of 'global product mandating' in full consultation with TNCs operating in Canada (Trade Development Council 1983).

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