Corporate Real Estate Holdings by Industry

in the Asia-Pacific Countries

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Abstract

This paper presents corporate real estate holdings and relevant data by industry as of 1995 in Australia, China, Hong Kong, Indonesia, Japan, Korea, Malaysia, New Zealand, Philippines, Singapore, Taiwan, and Thailand. On average, non-Japanese firms hold a little over $200 million whereas Japanese firms hold approximately $1 billion of real estate. Ratios of corporate real estate to the total assets (RE/TA ratios) for non-Japanese and Japanese firms are 38.90% and 36.28% respectively. Country-specific RE/TA ratios for non-Japanese firms range between 27.14% (Australia) and 51.44% (New Zealand). On the other hand, industry-specific RE/TA ratios range between 27.28% in the construction industry and 65.35% in the utilities industry for non-Japanese firms, and range between 17.32% in the services industry and 85.83% in the utilities industry for Japanese firms. The cross-country difference in the RE/TA ratio remains strong even after controlling for industry heterogeneity and the cross-country difference in office rents.

Introduction

This paper has two objectives: (1) To present corporate real estate holdings and relevant data for twelve Asia-Pacific countries; and (2) To explain the cross-country difference in the ratio of corporate real estate to the total assets (the RE/TA ratio). To meet these objectives, balance-sheet information on approximately 4,000 firms are extracted from Datastream. Each firm is assigned to one of twelve different industries and to one of twelve different countries. The first part of the paper is devoted describing corporate real estate and other relevant variables by country and by industry. Not only the size of corporate real estate holdings but also the RE/TA ratio is important to consider. Since corporate real estate is part of the total assets (the book value of the firm), the higher the RE/TA ratio, the greater the impact of real estate decisions made by corporate real estate executives on the firm's overall value. The second part thus employs analysis of variance and covariance to explain the cross-country difference in the RE/TA ratio. Results from these analyses indicate that: (1) The greater the market value (the sales) of a firm, the higher the RE/TA ratio of the firm; (2) The greater the current assets and assets other than the fixed assets of a firm, the lower the RE/TA ratio of the firm; and (3) The cross-country difference in the RE/TA ratio remains strong even after controlling for industry heterogeneity and the cross-country difference in office rents.

Corporate Real Estate Holdings

In this study, we use Datastream to extract firm-specific balance sheet information as of 1995 in twelve Asia-Pacific countries. Panel A of table 1 shows the items included in the asset side of the balance sheet, but we are only interested in the fixed assets for our purpose. We rename the fixed assets as *the corporate real estate holdings*. One may feel uneasy about this broad classification because the fixed assets may include tangible assets other than buildings and land (see Panel B of table 1). We are, however, unable to decompose the fixed assets since most country data provide only the aggregate fixed assets. Each firm is assigned to one of twelve different industry groups, and table 2 displays these groups with corresponding two-digit standard industry classification (SIC) codes.[1] For example, the petroleum industry includes all publicly traded firms which have SIC codes of 13 and 29 whereas the utilities industry includes firms with SIC codes of 46, 48, and 49. Table 3 lists some of the key variables collected: the market value, the net fixed assets, the total assets, the debt-to-equity ratio, the return on the net fixed assets, and the sales. The table lists only the four largest firms (in terms of the net fixed assets) in each country. It is interesting to note that none of the firms in the petroleum industry and the services industry are present in the list. Of 48 firms, 10 firms belong to the utilities industry, 10 firms to the basic industries, 8 firms in the transportation industry, 6 firms in the capital goods industry, and 5 firms in the construction industry. The firm

[1] This industry classification follows Sharpe (1982), Breeden, Gibbons, and Litzenberger (1989), and Chun and Tjung (1998). Most U.S. databases associate listed U.S. firms with their respective SIC codes. Datastream (U.K. based), however, utilizes different industry classifications. Each firm in Datastream is assigned to one of more than 40 industry groups. For example, HLTHC and PROPS stand for health care and property developers. We therefore reassign Datastream industry groups to our industry classification in table 2.

with the largest net fixed assets is Tokyo Electric Power of Japan ($120 billion). The total assets of most firms are substantially greater than their respective market values which indicate poorly developed securities markets in most Asian countries, China in particular. The debt-to-equity ratios of most firms are below one with some exceptions: News Corporation of Australia (7.32), Tokyo Electric Power of Japan (6.73), East Japan Railway of Japan (3.79), Kansai Electric Power of Japan (3.54), and Thai Airways International of Thailand (3.08). The returns on the net fixed assets range between 0.70% (Tokyo Electric Power of Japan) and 51.15% (Samsung Electronics of Korea). The sales range between $351 million (TPI Telephone of Thailand) and $68 billion (Nippon Telegraph & Telephone).

Only Japanese firms provide the detailed information with respect to the composition of the gross fixed assets and the accumulated depreciation (see table 4). The aggregate gross fixed assets are valued at $1.74 trillion; across twelve different industries, the consumer durables industry ($437 billion) and the services industry ($1 billion) hold the largest and the smallest gross fixed assets respectively. Of the aggregate gross fixed assets, the building, the land, the plant & machinery, the other fixed assets, and construction in progress account for 26.05%, 9.89%, 56.27%, 5.71%, and 2.07% respectively (see also Fig 1). The textile/trade industry holds 58.53% of the gross fixed assets in land & buildings while the figure for the utilities industry is only 13.76%. The variable FAN/FAG is the ratio of the net fixed assets to the gross fixed assets.[2] These ratios range between 42.85% (the consumer durables industry) and 60.81% (the construction industry). In other words, most depreciation has occurred in the consumer durables

industry and the least in the construction industry. We can think of three reasons for the difference in the accumulated depreciation between the consumer durables industry and the construction industry. First, the consumer durables industry holds more plant & machinery (60.37%) compared to 24.39% in the construction industry, and presumably the fastest depreciation occurs in the plant & machinery category. Second, land does not depreciate at all, but the construction industry holds more land (24.39%) compared to 8.94% in the consumer durables industry. Third, it is possible that the consumer durables industry has more new depreciable properties than does the construction industry. Datastream includes 1,475 non-financial firms whose aggregate net fixed assets are valued at $1.64 trillion.[3] Of these firms, only 1,053 firms reported the gross fixed assets and its components. As a result, the aggregate net fixed assets of these firms are valued at $786 billion. If we assume that the non-reporting non-financial firms also exhibit the same FAN/FAG ratio of 45.12%, then the aggregate gross fixed assets of non-financial Japanese firms could be valued at $3.64 trillion.

Table 5 shows the number of firms included in this study, and displays the numbers by country and by industry. Datastream includes 7,312 firms for the Asia-pacific countries including Japan, but only 3,987 firms that reported the market value, the net fixed assets, and the total assets are included. Of these firms, Japan has 1,475 firms and the rest has 2,512 firms. The data on the 3,019 U.S. firms are also collected from Compustat.[4] The U.S. has the largest number of firms in the finance/real estate industry (910 firms) while

[2] The difference between the gross fixed assets and the net fixed assets is the accumulated depreciation.
[3] Japanese firms in the finance/real estate industry do not provide the balance sheet information.
[4] The U.S. data are from Chun & Tjung (1998). Their study looks at the time-series pattern of the corporate real estate holdings relative to the total assets held by U.S. firms during the 1976-95 period.

Japan has a substantial number of firms in the consumer durables industry (286 firms), the basic industries (283 firms), and the capital goods industry (309 firms). Major industries (in terms of the number of firms) in the rest of the Asia-Pacific countries are the basic industries (413 firms), the consumer durables industry (325 firms), the capital goods industry (321 firms), and the textile/trade industry (309 firms).

One of the main objectives of this paper is to present corporate real estate holdings by country and by industry for twelve Asia-Pacific countries. Table 6 shows that 1,475 non-financial Japanese firms hold corporate real estate valued at $1.63 trillion as of 1995, and 2,512 firms of other Asia-Pacific countries own $597 billion of corporate real estate. In comparison, corporate real estate holdings of 3,019 financial and non-financial firms of the United States are valued at $3.02 trillion. Corporate real estate holdings of the Asia-Pacific countries excluding Japan range between $11 billion (Philippines) and $169 billion (Korea). Japanese and U.S. firms, on average, hold $1 billion of corporate real estate (see also fig 2). However, this average figure can be misleading because the U.S. average is based on both financial and non-financial firms and is grossly scaled down due to the low average of corporate real estate holdings of U.S. financial firms ($151 million) while the Japanese data do not include financial firms. Japanese firms in the utilities industry than U.S. counterparts hold substantially more corporate real estate: $15.5 billion vs. $3 billion. On the other hand, U.S. firms in the petroleum industry and the food/tobacco industry rather than Japanese counterparts own relatively more corporate real estate: $3.6 billion vs. $1.5 billion in the former industry, and $2 billion vs. $0.5 billion in the latter industry. In most industries, non-Japanese firms in Asia-Pacific

countries than either Japanese firms or American firms generally own much less real estate. The only exception is the finance/real estate industry; the average value of real estate owned by non-Japanese firms in Asia-Pacific countries is $357 million whereas that of U.S. firms is $151 million. It is interesting to see how these corporate real estate holdings are distributed across industries in each country. In Japan, the U.S. and several Asia-Pacific countries, most corporate real estate is found in the utilities industry: 30.49% for Japan, 29.35% for the U.S., 20.97% for Indonesia, 20.22% for Korea, 31.97% for Malaysia, and 38.74% for Philippines. In Australia, China, New Zealand, and Taiwan, most corporate real estate is found in the basic industries: 51.08% for Australia, 28.03% for China, 29.75% for New Zealand, and 30.40% for Taiwan. The largest industries with the most corporate real estate in other countries are the following: the finance/real estate industry (46.52%) for Hong Kong, the transportation industry (34.67%) for Singapore, and the construction industry (19.17%) in Thailand.

For a firm, not only the size of corporate real estate but also the ratio of corporate real estate to the total assets (the RE/TA ratio) is an important consideration. Since corporate real estate is part of the total assets (the book value of the firm), the higher the RE/TA ratio, the greater the impact of real estate decisions made by corporate real estate executives on the firm's overall value. In their 1983 paper, Zeckhauser and Silverman write, "Only 40% of U.S. firms clearly and consistently evaluate the performance of their real estate while most treat property as an overhead cost like stationary and paper clips". As a result, many firms do not utilize their real estate at the highest and best use, and these hidden values might make these firms easy takeover targets. Table 7 indicates the

RE/TA ratio by industry varies from 1.82% (the finance/real estate industry) to 68.59% (the utilities industry) for U.S. firms in 1995. But due to the dominance of the finance/real estate industry, the average U.S. ratio is only 21.09%. In comparison, Japan's average ratio is 36.28% while the ratio by industry varies from 17.32% (the services industry) to 85.83% (the utilities industry).[5] Average RE/TA ratio of non-Japanese firms in Asia-Pacific countries is 38.90%, which resembles the Japanese ratio. Country-specific ratios vary from 27.14% in Australia to 51.44% in New Zealand (see also fig 3). Industry-specific RE/TA ratios in these Asia-Pacific countries also vary widely from 24.57% in Philippines to 62.12% in Australia for the petroleum industry, from 1.72% in Australia to 51.42% in Hong Kong for the finance/real estate industry, from 17.46% in Singapore to 34.29% in China for the consumer durables industry, from 21.13% in Philippines to 60.54% in New Zealand for the basic industries, from 26.67% in Singapore to 48.88% in Malaysia for the food/tobacco industry, from 16.71% in Hong Kong to 51.05% in Philippines for the construction industry, from 22.12% in Philippines to 56.47% in New Zealand for the capital goods industry, from 33.14% in China to 67.84% in Singapore for the transportation industry, from 13.20% in Thailand to 81.94% in Malaysia for the utilities industry, from 14.52% in Singapore to 46.48% in Philippines for the textile/trade industry, from 30.55% in Singapore to 71.16% in Malaysia for the services industry, and from 24.59% in Philippines to 72.93% in Hong Kong for the leisure industry (see also fig 4). Firms in Asia-Pacific countries including Japan rather than U.S. firms generally exhibit higher industry-specific RE/TA ratios. This implies that

[5] If the financial firms of Japan are also included and the RE/TA ratio in this industry is as low as that industry in the U.S., then the average ratio of Japan may be much lower than 36.28%.

real estate decisions have relatively more significance on firms' values in Asia-Pacific firms than in U.S. firms across industries.

The corporate real estate turnover ratio is the ratio of sales to the net fixed assets, and country- and industry-specific turnover ratios are shown in table 8. These ratios describe how efficiently or intensively firms use their assets to generate sales. These ratios across the countries vary from 2.26 in China to 17.16 in Philippines (see also fig 5). On average, Asia-Pacific countries show the ratio of 7 compared to the ratio of 6.05 in Japan. Industry-specific turnover ratios of Japan range between 2.15 in the transportation industry and 11.16 in the services industry while Asia-Pacific countries' turnover ratios range between 1.85 in the petroleum industry and 11.47 in the basic industries. Some very high turnover ratios are found in the following industries: 128.40 in Hong Kong's basic industries, 75.19 in Philippines' basic industries, 38.60 in Australia's finance/real estate industry, and 28.42 in Korea's capital goods industry. On the other hand, low values are observed in the following: 0.25 in Thailand's finance/real estate industry, 0.37 in Singapore's services industry, 0.56 in Philippine's transportation industry and so forth.

Another measure we look at is the return on corporate real estate, and this return is calculated by taking the ratio of net income to the net fixed assets. This profitability measure intends to measure how efficiently the firm uses its net fixed assets and how efficiently the firm manages its operations. As shown in table 9, Australia (-52.16%) and New Zealand (-33.90%) exhibit very poor returns while Malaysia (56.81%) and Hong Kong (37.80%) show healthy returns on corporate real estate in 1995 (see also fig 6).

Japan has the return of 16.54% and other Asia-Pacific countries on average exhibit mere 3.07%. For Japan, the lowest return is found in the textile/trade industry (-9.17%) while the highest is observed in the services industry (24.26%). In comparison, for other Asia-Pacific countries, the petroleum industry has the lowest return of –66.76% while the construction industry has the highest return of 49.75%. Some very low industry-specific returns are found in the basic industries (-380.25%) of New Zealand and in the petroleum industry (-270.89%) of Australia. On the other hand, very high values are found in the finance/real estate industry (489.72%) of Australia and in the construction industry (156.51%) of Malaysia.

Explaining the Cross-Country Difference in the RE/TA Ratio

To explain the variation in RE/TA ratios across firms in twelve Asia-Pacific countries, analysis of variance and covariance models for unbalanced data with missing cells are estimated. The problem on hand is a two-way factorial analysis of variance (covariance) problem; 3,987 firms, each originated from one of twelve different countries, belong to one of twelve different industries, and firm-specific RE/TA ratios are recorded. The data are unbalanced since the number of firms in each cell is different, e.g., 86 Korean firms in the consumer durables industry vs. 52 Thai firms in the food/tobacco industry. The data also include some missing cells; as an example, none of Chinese, Hong Kong, New Zealand, and Taiwanese firms is present in the petroleum industry. We want to know the effects of cross-industry difference and cross-country difference on the RE/TA ratio. The

F test of the main effect of industry (country) is equivalent to the test of equality of means across industries (countries).

Two models of analysis of variance are employed, and results are displayed in table 10. Both models include not only industry (GROUP) and country (COUNTRY) terms but also the interacted term between country and industry (COUNTRY*GROUP). The first model uses the RE/TA ratio as the dependent variable while the second model uses an adjusted RE/TA ratio. Results from these two models are quite different and we explain the difference next.

As shown in the table, when the RE/TA ratio is used (refer to equation 1), the R-squared is only 5.83%. In other words, the overall significance of COUNTRY, GROUP, and COUNTRY*GROUP terms is minimal in explaining the variation in RE/TA ratios across firms. The only significant one is the interacted term, and the term is statistically significant at 0.03% level. The second model uses the different dependent variable, the ARE/ATA ratio. The variable ARE is the variable RE multiplied by the ratio of 30 to the CBD office rent per square foot in that particular country[6]. This new variable is created to control for the cross-country difference in office rents. Suppose that the average CBD office rent in Japan is higher than that in the U.S. Consequently, even a Japanese firm and an American firm hold the same amount of office space, the RE/TA ratio for the Japanese firm would be higher than that for the U.S. firm. If we assume that average CBD office rent in the U.S. is $30 per square foot, then ARE represents the sum of money a foreign

[6] *ULI Market Profiles 1997: Pacific Rim* provides the data on the average CBD office rent per square foot in the Asia-Pacific countries included in this study.

firm has to come up with if its office space to be acquired were located in the United States[7]. By using the variable ARE, the cross-country difference in office rents no longer plays a role in the cross-country difference in the RE/TA ratio. This adjustment in the RE/TA ratio forces us to make an adjustment in the variable TA too since corporate real estate is part of the total assets. The variable ATA is the sum of ARE and other items in the total assets. The analysis of variance model using the ARE/ATA ratio (refer to equation 2) drastically improves the R-squared (51.49%). Also COUNTRY and GROUP become highly significant terms in explaining the variation in RE/TA ratios. The result is interpreted as follows. As the ratio of corporate real estate to the total assets is revised to control for the difference in office rents across countries, part of the difference in firm-specific RE/TA ratios can be explained by the cross-industry difference and by the cross-country difference in property prices. However, the term COUNTRY is also highly significant, and it implies that there are other missing factors to explain the variation in RE/TA ratios across countries. Put differently, even industry concentration is different and industry-specific RE/TA ratios are different across countries, the cross-industry difference alone is not sufficient enough to explain why each country displays quite different RE/TA ratios. This conclusion leads us try yet another model.

Analysis of covariance is tried to include some covariates to further boost the R-squared value. As shown in table 11, the following covariates are included: LTANET (log of TA-RE), LMV (log of the market value), and LSALE (log of the sales). All of these variables

[7] One crucial assumption made in calculating the ARE variable is that Asia-Pacific firms own only CBD office properties. Of course, this is not correct. First, part of RE can be land or any other type of fixed assets. Second, office properties these firms hold may not be in central business districts. This grossly

indicate how large each firm is. These size variables are highly significant in explaining the variation in RE/TA ratios. As a result, the R-squared is raised to 69.6%. The negative coefficient estimate of LTANET implies that the greater the current assets and other investments of a firm, the lower the firm's RE/TA ratio. On the contrary, the greater the market value (sales), the higher the firm's RE/TA ratio. However, all categorical variables remain highly significant. More than one-half of the countries included contribute significant effects on RE/TA ratios. These countries are Australia, Hong Kong, Japan, Malaysia, New Zealand, Philippines, and Singapore. The following industries also provide significant effects: finance/real estate, consumer durables, food/tobacco, capital goods, utilities, and textile/trade industries.

Concluding Remarks

This paper presented corporate real estate holdings and relevant data by industry as of 1995 in twelve Asia-Pacific countries. On average, non-Japanese firms held a little over $200 million whereas Japanese firms held approximately $1 billion of real estate. Ratios of corporate real estate to the total assets (RE/TA ratios) for non-Japanese and Japanese firms were 38.90% and 36.28% respectively. Country-specific RE/TA ratios for non-Japanese firms ranged between 27.14% (Australia) and 51.44% (New Zealand). On the other hand, industry-specific RE/TA ratios ranged between 27.28% in the construction industry and 65.35% in the utilities industry for non-Japanese firms, and ranged between 17.32% in the services industry and 85.83% in the utilities industry for Japanese firms.

simplified assumption is however made since Datastream does not give the information on what types of corporate real estate holdings are available and where these holdings are located for each firm.

Results from analysis of variance and covariance models indicated that the cross-country difference in the RE/TA ratio remained strong even after controlling for industry heterogeneity and the cross-country difference in office rents.

Future research can improve analyses employed in this paper to explain the variation in RE/TA ratios in two ways. First, it was no surprise to see a strong cross-country difference in the RE/TA ratio after controlling for the difference in property prices because the same office rent was applied to all of the firms in the same country. If different property prices were applied for different industries or for different firms, it would possibly to weaken substantially the effect of the cross-country difference on the RE/TA ratio. Second, some other covariates can be employed to further improve the goodness of fit. As an example, it is plausible to assume that there exists the tradeoff between the payroll cost and the occupancy cost. To control for expenses, firms will attempt to reduce the amount of office space per worker or move to less expensive office properties as the payroll cost rises.

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Table 1
Components of Assets in Corporate Balance Sheets

Panel A.	Components of Assets
	ASSETS
	Cash and short-term investments
	Account receivable/debtors
	Inventories
	Current assets-other
	Current assets-total
	Fixed assets (tangible)
	Investments and advances-equity
	Investment and advances-other
	Intangible assets
	Assets-other
	Assets-total

Panel B.	Components of Fixed Assets (Corporate Real Estate)
	FIXED ASSETS
	Buildings
	Land
	Plant & Machinery
	Other Fixed Assets
	Construction in Progress
	Fixed assets-total

Table 2
Industry Groups

Industry Group	2-Digit US SIC Codes	Industries
1 Petroleum	13, 29	Oil and gas Extraction; Petroleum and coal products.
2 Finance/Real Estate	60-69	Depository institutions; Nondepository institutions; Security and commodity brokers; Insurance carriers; Insurance agents, brokers, and services; Real estate; Holding and other investment offices.
3 Consumer Durables	25, 30, 36-37, 50 55, 57	Furniture and fixture; Rubber and miscellaneous plastics products; Electronic and other electronic equipments; Transportation equipments; Wholesale trade-durable goods; Automotive dealers and service stations; Furniture and homefurnishing stores.
4 Basic Industries	10, 12, 14, 24, 26, 28, 33	Metal mining; Coal mining; Nonmetallic minerals except fuels; Lumber and wood products; Paper and allied products; Chemical and allied products; Primary metal industries.
5 Food/Tobacco	1, 20, 21, 54	Food and kindled products; Tobacco products; Food stores.
6 Construction	15-17. 32, 52	General contractor and operative builders; Heavy construction except buildings; Special trade contractors; Stone, clay, and glass products; Building material and garden supplies.
7 Capital Goods	34-35, 38, 39	Fabricated metal products; Industrial machinery and equipments; Instrument and related products; Misc. manufacturing industries.
8 Transportation	40-42, 44, 45, 47	Local and interurban passenger transit; Trucking and warehousing; Water transportation; Transportation by air; Transportation services.
9 Utilities	46, 48, 49	Pipelines, except natural gas; Communication; Electric, gas, and sanitary services.
10 Textile/Trade	22-23, 31, 51, 53, 56, 59	Textile mill products; Apparel and other textile products; Leather and leather products; Wholesale trade-nondurable goods; General merchandise stores; Apparel and accessory stores; Miscellaneous retail.
11 Services	72-73, 75, 76, 80, 82, 83, 87, 89	Personal services; Business services; Auto repair and painting services; Misc. repair services; Health services; Educational services; Social services; Engineering, accounting, management services.
12 Leisure	27, 58, 70, 78-79	Printing and publishing; Eating and drinking places; Hotels and other lodging places; Motion pictures; Amusement and recreational services.

Table 3
Major Corporations in the Asia-Pacific Countries

The data are from Datastream. INDC is the industry group as defined in table 2. GEOGs are the country codes: Australia (AU), China (CH), Hong Kong (HK), Indonesia (ID), Japan (JP), Korea (KO), Malaysia (MY), New Zealand (NZ), Philippines (PH), Singapore (SG), Taiwan (TA), and Thailand (TH). The market values (MV), the net fixed assets (FAN), the total assets (TA), and the sales (SALE) are in million US dollars. DE is the debt-to-equity ratio and RFA is the return on the fixed assets in percentage terms. For each country, only the top four firms in terms of the net fixed assets are listed.

NAME	INDC	GEOG	MV	FAN	TA	DE	RFA	SALE
BROKEN HILL PROPRIETARY	4	AU	27,552	14,159	24,082	0.54	8.16	13,195
RIO TINTO LTD.	4	AU	9,433	8,026	15,774	0.57	14.45	8,171
CSR	6	AU	3,108	3,197	5,336	0.55	9.09	4,405
NEWS CORP.	12	AU	10,339	2,821	22,108	7.32	27.18	9,057
SHAI.TYRE & RUBBER	4	CH	46	2,669	5,195	1	.	3,418
SHAI.CHLOR-ALKALI	4	CH	85	2,353	4,292	0.57	.	2,392
SHAI.VACUUM ELT.APP.	3	CH	34	1,585	4,353	1.81	.	2,700
SHAI.YAOHUA PIL GLASS	6	CH	88	1,127	1,693	0.07	.	650
SWIRE PACIFIC	7	HK	7,534	12,918	18,056	0.51	6.46	6,009
WHARF HDG.	2	HK	7,224	11,021	13,459	0.3	4.23	.
SUN HUNG KAI PROPS.	2	HK	19,016	9,878	16,667	0.16	13.57	.
HUTCHISON WHAMPOA	7	HK	22,046	7,050	15,448	0.69	17.55	4,276
TELEKOMUNIKASI INDO.	9	ID	12,246	3,775	6,960	.	10.51	.
INDOCEMENT TP	6	ID	4,052	1,702	3,589	1.57	12.23	.
ASTRA INTERNATIONAL	7	ID	1,805	1,540	6,830	2.87	10.53	.
INDOFOOD	5	ID	3,671	1,004	1,619	1.39	.	915
TOKYO ELECTRIC POWER	9	JP	36,198	120,495	132,270	6.73	0.7	48,496
NIPPON TELG. & TEL.	9	JP	128,806	100,141	123,581	1.33	0.74	68,222
EAST JAPAN RAILWAY	8	JP	19,466	64,397	70,641	3.79	0.99	23,732
KANSAI ELECTRIC POWER	9	JP	23,718	57,570	63,879	3.54	0.75	24,639
KOREA ELECTRIC POWER	9	KO	24,458	31,123	35,019	0.7	3.77	12,910
POHANG IRON & STEEL	4	KO	6,137	9,274	17,168	0.75	11.67	10,595
SAMSUNG ELECTRONICS	3	KO	11,750	6,312	17,483	0.84	51.15	20,871
KOREAN AIRLINES	8	KO	1,760	5,135	6,985	2.31	2.66	4,357
TENAGA NASIONAL	9	MY	12,111	9,097	9,621	0.51	5.38	2,617
TELEKOM MALAYSIA	9	MY	15,556	5,439	7,098	0.32	11.41	2,069
MALAYSIAN AIRLINE SY.	8	MY	2,275	4,225	4,904	1.94	1.3	1,883
MALAYSIA INTL.SHIPPING	8	MY	2,580	1,703	2,053	0.06	12.99	975
BRIERLEY INVS.	7	NZ	2,110	3,735	6,159	1.11	7.56	1,357
CARTER HOLT HARVEY	4	NZ	3,726	2,943	4,921	0.45	9.88	1,777
AIR NEW ZEALAND	8	NZ	716	1,190	2,031	0.88	14.29	1,507
FLETCH.CHAL.FOREST DIVN.	4	NZ	864	845	937	0.45	5.26	229
PHILP.LONG DSN.TEL.	9	PH	2,857	2,270	3,138	0.71	7.51	835
SAN MIGUEL	10	PH	2,617	1,552	3,315	0.82	13.22	3,021
MANILA ELECTRIC	9	PH	1,412	1,407	1,960	0.23	11.41	1,817
JG SUMMIT HDG.	7	PH	392	855	2,003	0.65	12.86	453
SINGAPORE AIRLINES	8	SG	7,254	6,483	8,574	0.05	10.01	4,635
KEPPEL CORPORATION	7	SG	4,602	2,445	11,206	0.42	6.19	1,063
SINGAPORE TELECOM	9	SG	33,852	2,192	4,803	.	42.75	2,408
NEPTUNE ORIENT LINES	8	SG	812	1,757	2,573	2.05	1.78	1,320
CHINA STEEL	4	TA	5,754	3,782	5,963	0.37	.	2,821
NAN YA PLASTICS	4	TA	3,697	1,776	3,684	0.65	.	3,877
TATUNG	3	TA	3,442	1,675	3,657	0.89	.	3,104
FAR EASTERN TEXTILES	10	TA	1,648	1,384	2,767	0.69	.	1,255
THAI AIRWAYS INTL.	8	TH	2,418	3,704	5,062	3.08	3.47	2,890
SIAM CEMENT	6	TH	6,365	2,446	4,796	2.7	9.84	3,261
THAI PETROCHEMICAL	4	TH	2,064	1,378	2,701	0.77	17.55	792
TPI POLENE	6	TH	1,511	956	1,764	2.61	3.45	351

Table 4

Composition of Fixed Assets for Non-Financial Japanese Firms in 1995

The data are from Datastream. FAN/FAG is the ratio of net fixed assets to gross fixed assets. FAN is the fixed assets after accumulated depreciation. Datastream includes 1,475 firms whose aggregate net fixed assets are valued at $1.64 trillion. Of these firms, only 1,053 firms reported the gross fixed assets and its components. As a result, the aggregate value of net fixed assets is down to $786 billion.

Industry	Number of Firms	FAN/FAG	Gross Fixed Assets ($ Million)	Gross Building	Land	Gross Plant & Machinery	Gross Other Fixed Assets	Construction in Progress
Petroleum	14	49.02%	39,776	26.90%	17.76%	41.47%	10.13%	3.75%
Consumer Durables	199	42.85%	437,545	27.44%	8.94%	60.37%	1.59%	1.67%
Basic Industries	193	40.96%	373,237	24.43%	7.74%	62.38%	3.38%	2.08%
Food/Tobacco	82	50.42%	80,769	37.29%	14.75%	43.55%	2.72%	1.69%
Construction	149	60.81%	138,310	33.42%	24.39%	37.43%	2.24%	2.52%
Capital Goods	223	43.63%	154,033	29.28%	9.82%	55.01%	4.63%	1.25%
Transportation	34	55.64%	28,151	37.73%	19.04%	29.41%	12.80%	1.02%
Utilities	20	39.60%	344,641	11.81%	1.95%	68.36%	15.03%	2.85%
Textile/Trade	94	57.55%	112,712	40.54%	17.99%	32.77%	6.75%	1.95%
Services	11	50.62%	1,033	33.18%	14.66%	49.22%	2.09%	0.85%
Leisure	34	52.51%	30,881	41.72%	12.56%	42.86%	1.40%	1.46%
Total	1,053	45.12%	1,741,088	26.05%	9.89%	56.27%	5.71%	2.07%

Table 5

Number of Firms in the Asia-Pacific Countries and the U.S. in 1995

Datastream includes 7,312 firms for the Asia-Pacific countries including Japan. Only the firms which reported the market value, the net fixed assets, and the total assets are included below. A-P Total includes all of the Asia-Pacific countries but Japan. The U.S. data are from Compustat.

Country / Industry	Total	IND 1	IND 2	IND 3	IND 4	IND 5	IND 6	IND 7	IND 8	IND 9	IND 10	IND 11	IND 12
Australia	173	12	6	11	63	17	9	22	4	2	9	5	13
China	62	0	1	10	7	2	8	11	7	5	11	0	0
Hong Kong	372	0	76	64	19	13	28	38	22	18	60	0	34
Indonesia	154	1	17	9	32	23	12	14	5	6	25	3	7
Korea	591	5	0	86	126	44	66	106	17	10	103	13	15
Malaysia	318	2	54	22	42	56	55	39	9	8	13	1	17
New Zealand	78	0	4	9	11	11	3	7	6	6	11	3	7
Philippines	114	13	23	6	23	11	7	9	2	9	3	3	5
Singapore	178	1	18	34	14	14	14	37	12	2	8	1	23
Taiwan	174	0	3	42	37	13	20	14	10	5	26	0	4
Thailand	298	2	33	32	39	52	23	24	8	13	40	10	22
A-P Total	2,512	36	235	325	413	256	245	321	102	84	309	39	147
Japan	1,475	19	0	286	283	100	176	309	78	32	139	13	40
U.S.	3,019	133	910	327	325	85	63	306	58	290	207	181	134

Table 6

Corporate Real Estate in the Asia-Pacific Countries and the U.S. in 1995

The Asia-Pacific and the U.S. data are derived from Datastream and Compustat respectively. The number of Asia-Pacific firms including Japanese firms is 3,987 whereas the U.S. includes 3,019 firms. RE is the aggregate value of corporate real estate (the net fixed assets) in million US dollars. IND 1-12 are the industry groups as defined in Table 2. A-P Avg., Japan Avg., and U.S. Avg. are the firm-average real estate values in million US dollars.

Country	RE	IND 1	IND 2	IND 3	IND 4	IND 5	IND 6	IND 7	IND 8	IND 9	IND 10	IND 11	IND 12
Australia	72,088	4.89%	2.18%	4.66%	51.08%	6.48%	7.62%	5.30%	3.26%	0.97%	5.46%	1.12%	6.99%
China	19,543	0.00%	3.06%	15.72%	28.03%	4.24%	14.32%	12.92%	6.00%	4.05%	11.66%	0.00%	0.00%
Hong Kong	150,691	0.00%	46.52%	2.76%	1.09%	0.48%	0.50%	24.50%	4.49%	7.12%	2.97%	0.00%	9.57%
Indonesia	19,899	0.40%	10.66%	1.36%	11.78%	12.52%	15.09%	13.04%	2.40%	20.97%	10.32%	0.22%	1.25%
Korea	169,987	4.05%	0.00%	16.08%	18.69%	3.15%	7.89%	12.17%	6.52%	20.22%	9.71%	0.74%	0.79%
Malaysia	50,238	0.65%	6.36%	5.43%	5.45%	13.31%	6.55%	10.10%	12.39%	31.97%	1.19%	0.05%	6.54%
New Zealand	13,674	0.00%	2.35%	5.45%	29.75%	5.02%	0.80%	29.62%	11.72%	4.91%	6.69%	0.43%	3.25%
Philippines	11,592	3.00%	8.31%	0.95%	10.03%	4.82%	6.99%	10.39%	1.19%	38.74%	14.07%	0.61%	0.90%
Singapore	27,323	2.17%	8.04%	4.79%	3.11%	5.04%	1.95%	16.96%	34.67%	8.78%	0.66%	1.49%	12.34%
Taiwan	35,764	0.00%	2.09%	20.53%	30.40%	4.10%	6.51%	3.54%	11.67%	3.61%	16.80%	0.00%	0.76%
Thailand	26,541	3.52%	7.87%	5.77%	18.11%	6.17%	19.17%	4.44%	16.20%	5.27%	8.03%	1.11%	4.34%
A-P Total	597,340	2.13%	14.05%	8.70%	17.17%	4.43%	6.30%	14.06%	7.99%	12.90%	6.82%	0.50%	4.97%
Japan	1,637,164	1.79%	0.00%	19.32%	14.16%	2.94%	5.78%	6.38%	11.93%	30.49%	6.04%	0.04%	1.12%
U.S.	3,026,514	16.06%	4.53%	14.24%	12.97%	5.65%	0.75%	3.21%	4.99%	29.35%	3.75%	1.81%	2.68%
A-P Avg.	238	353	357	160	248	103	154	262	468	918	132	76	202
Japan Avg.	1,110	1,542	N/A	1,106	819	482	538	338	2,503	15,599	712	52	460
U.S. Avg.	1,002	3,654	151	1,318	1,208	2,013	362	318	2,601	3,063	549	303	606

Table 7
Corporate Real Estate as a Percent of Total Assets in 1995

The Asia-Pacific and the U.S. data are derived from Datastream and Compustat respectively. The number of Asia-Pacific firms is 2,512 whereas Japan and the U.S. include 1,475 and 3,019 firms respectively. The percentages are the value-weighted ratios of the net fixed assets to the total assets. N/A means that there were no reporting firms. A-P Total includes all of the Asia-Pacific countries but Japan.

Country	TOTAL	IND 1	IND 2	IND 3	IND 4	IND 5	IND 6	IND 7	IND 8	IND 9	IND 10	IND 11	IND 12
Australia	27.14%	62.12%	1.72%	53.21%	51.69%	37.71%	46.56%	29.43%	42.05%	36.62%	30.80%	36.44%	16.09%
China	30.11%	N/A	17.15%	34.29%	47.98%	34.67%	17.48%	27.60%	33.14%	29.87%	31.20%	N/A	N/A
Hong Kong	51.14%	N/A	51.42%	27.68%	40.84%	36.87%	16.71%	53.25%	50.21%	66.61%	31.58%	N/A	72.93%
Indonesia	35.27%	28.05%	24.72%	26.21%	31.40%	34.88%	48.01%	23.61%	63.36%	50.18%	41.19%	36.14%	50.41%
Korea	41.25%	43.35%	N/A	34.02%	47.44%	41.53%	22.46%	30.02%	63.20%	80.29%	40.61%	33.19%	51.19%
Malaysia	39.57%	55.80%	18.98%	27.31%	35.03%	48.88%	25.12%	20.61%	83.95%	81.94%	25.26%	71.16%	32.82%
New Zealand	51.44%	N/A	26.89%	71.25%	60.54%	41.97%	36.10%	56.47%	63.17%	53.20%	27.79%	40.99%	34.83%
Philippines	35.12%	24.57%	16.42%	26.62%	21.13%	29.96%	51.05%	22.12%	44.24%	69.91%	46.48%	29.18%	24.59%
Singapore	31.31%	56.95%	11.75%	17.46%	36.19%	26.67%	20.31%	23.82%	67.84%	38.64%	14.52%	30.55%	43.76%
Taiwan	38.83%	N/A	50.99%	31.22%	48.28%	39.71%	20.06%	29.41%	57.96%	62.78%	39.17%	N/A	65.00%
Thailand	34.96%	54.75%	15.44%	27.83%	48.12%	33.10%	48.83%	37.61%	58.61%	13.20%	34.49%	60.34%	54.81%
A-P Total	38.90%	47.73%	28.20%	32.55%	47.48%	38.57%	27.28%	35.65%	60.01%	65.35%	36.41%	35.45%	38.98%
Japan	36.28%	37.47%	N/A	21.05%	36.72%	35.66%	18.93%	25.27%	65.23%	85.53%	31.99%	17.32%	32.98%
U.S.	21.09%	63.17%	1.82%	24.21%	44.71%	34.59%	31.40%	20.37%	68.59%	63.90%	33.40%	30.22%	38.55%

Table 8
Average Corporate Real Estate Turnover Ratios in 1995

The data are derived from Datastream. The Asia-Pacific countries excluding Japan include 2,171 firms whereas the number of Japanese firms is 1,474. The corporate real estate turnover ratio is the ratio of sales to the net fixed assets, and each firm's turnover ratio is equally weighted to compute the average ratios. N/A means that there were no reporting firms. A-P Total includes all of the Asia-Pacific countries but Japan.

Country	TOTAL	IND 1	IND 2	IND 3	IND 4	IND 5	IND 6	IND 7	IND 8	IND 9	IND 10	IND 11	IND 12
Australia	4.20	1.33	38.60	6.34	2.50	4.31	3.51	4.83	3.51	3.16	6.70	5.46	5.68
China	2.26	N/A	1.25	3.28	1.82	1.98	2.14	2.23	1.75	1.72	2.47	N/A	N/A
Hong Kong	12.27	N/A	1.08	5.87	128.40	4.24	8.20	2.94	4.35	3.47	5.31	N/A	0.99
Indonesia	4.03	0.65	N/A	7.05	3.15	5.13	1.81	9.99	0.60	1.83	2.81	1.28	2.29
Korea	9.41	3.47	N/A	5.13	3.16	3.69	9.63	28.42	2.74	2.45	7.24	3.18	1.82
Malaysia	3.49	2.34	2.16	6.05	2.34	2.52	3.07	2.48	0.76	2.30	4.90	N/A	12.59
New Zealand	5.87	N/A	0.68	13.91	4.04	6.64	7.05	4.24	1.98	2.11	7.69	8.24	0.79
Philippines	17.16	1.44	2.07	11.08	75.19	4.52	1.21	2.62	0.56	1.07	1.05	0.84	0.64
Singapore	6.37	2.15	8.02	8.92	2.19	17.16	12.04	3.62	1.02	1.96	10.76	0.37	0.81
Taiwan	3.40	N/A	0.67	5.22	2.16	2.04	5.45	2.34	2.07	0.88	3.15	N/A	0.42
Thailand	3.12	1.70	0.25	3.52	1.91	4.56	1.39	4.60	2.36	4.30	3.37	0.86	1.95
A-P Total	7.00	1.85	4.01	5.97	11.47	4.66	6.12	12.34	2.38	2.58	5.48	2.92	2.86
Japan	6.05	4.07	N/A	7.12	3.67	7.21	7.69	7.85	2.15	2.74	5.18	11.16	3.91

Table 9
Average Returns on Corporate Real Estate in 1995

The data are from Datastream. The Asia-Pacific countries excluding Japan include 2,220 firms whereas the number of Japanese firms is 1,474. The return on corporate real estate is the ratio of net income to the net fixed assets, and each firm's return is equally weighted to compute the average returns. N/A means that there were no reporting firms. A-P Total includes all of the Asia-Pacific countries but Japan.

Country	TOTAL	IND 1	IND 2	IND 3	IND 4	IND 5	IND 6	IND 7	IND 8	IND 9	IND 10	IND 11	IND 12
Australia	-52.16%	-270.89%	489.72%	23.44%	-136.06%	14.68%	20.24%	19.45%	13.87%	47.38%	21.51%	28.91%	32.45%
China	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hong Kong	37.80%	N/A	82.48%	3.92%	121.95%	29.70%	34.88%	15.58%	37.73%	40.21%	28.43%	N/A	9.59%
Indonesia	25.13%	15.46%	18.32%	28.18%	34.58%	31.07%	16.18%	48.24%	12.61%	24.51%	10.06%	8.08%	10.11%
Korea	6.27%	8.38%	N/A	10.12%	8.37%	5.24%	-3.77%	10.02%	4.71%	7.23%	2.65%	15.24%	4.91%
Malaysia	56.81%	9.94%	32.41%	31.86%	41.60%	35.58%	156.51%	20.67%	9.98%	23.52%	23.77%	11.51%	101.23%
New Zealand	-33.90%	N/A	3.66%	11.73%	-380.25%	22.01%	65.00%	26.64%	11.88%	26.34%	38.74%	17.45%	17.70%
Philippines	-8.03%	57.77%	127.43%	42.96%	-258.19%	33.90%	15.95%	9.55%	11.41%	15.62%	36.24%	9.16%	124.83%
Singapore	24.93%	3.17%	13.77%	37.21%	9.74%	37.35%	36.42%	23.42%	11.17%	42.75%	62.46%	3.99%	7.89%
Taiwan	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Thailand	20.87%	7.84%	32.78%	-6.91%	10.34%	14.84%	11.64%	20.98%	46.36%	129.40%	19.76%	8.68%	22.19%
A-P Total	3.07%	-66.76%	60.14%	13.51%	-31.51%	22.69%	49.75%	17.60%	19.89%	44.79%	16.69%	14.22%	27.63%
Japan	16.54%	5.11%	N/A	-0.25%	2.39%	2.13%	10.23%	7.74%	0.89%	5.33%	-9.17%	24.26%	3.58%

Table 10
Results from Analysis of Variance

The RE/TA ratio is the ratio of the net fixed assets to the total assets whereas the ARE/ATA ratio is the ratio of the adjusted net fixed assets to the adjusted total assets. ARE is the net fixed assets multiplied by the ratio of 30 to the CBD office rent per square foot. ATA is the sum of ARE and other items in the total assets. COUNTRY is the country code (1-12) and GROUP is the industry group (1-12).

Equation 1. Analysis of Variance using the RE/TA Ratio as the Dependent Variable

Number of obs = 3987 R-squared = 0.0583
Root MSE = 0.85843 Adj R-squared = 0.0258

Source	Partial SS	df	MS	F	Prob > F
Model	175.8198	133	1.3219537	1.79	0.0000
COUNTRY	5.901085	11	0.5364623	0.73	0.7125
GROUP	7.550594	11	0.6864177	0.93	0.5085
COUNTRY*GROUP	125.7829	111	1.1331800	1.54	0.0003
Residual	2839.284	3853	0.7369023		
Total	3015.104	3986	0.7564236		

Equation 2. Analysis of Variance using the ARE/ATA Ratio as the Dependent Variable

Number of obs = 3987 R-squared = 0.5149
Root MSE = 0.16398 Adj R-squared = 0.4982

Source	Partial SS	df	MS	F	Prob > F
Model	109.9821	133	0.8269334	30.75	0.0000
COUNTRY	42.92076	11	3.9018876	145.11	0.0000
GROUP	5.038995	11	0.4580904	17.04	0.0000
COUNTRY*GROUP	11.88829	111	0.1071017	3.98	0.0000
Residual	103.6049	3853	0.0268894		
Total	213.5870	3986	0.0535843		

Table 11
Results from Analysis of Covariance

The ARE/ATA ratio is the ratio of the adjusted net fixed assets to the adjusted total assets. ARE is the net fixed assets multiplied by the ratio of 30 to the CBD office rent per square foot. ATA is the sum of ARE and other items in the total assets. LTANET is the log of the total assets minus the net fixed assets. LMV is the log of the market value. LSALE is the log of the sales. COUNTRY is the country code (1-12) and GROUP is the industry group (1-12). Only coefficients at 5% significance level are printed. CONST includes Thailand and leisure industry effects. Also interacted terms are not printed.

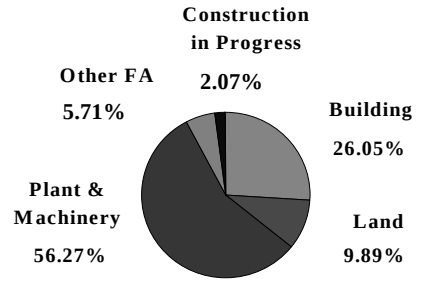
Equation 3. Analysis of Covariance using the ARE/ATA Ratio as the Dependent Variable

Number of obs = 3643 R-squared = 0.6960
Root MSE = 0.12300 Adj R-squared = 0.6844

Source	Partial SS	df	MS	F	Prob > F
Model	121.52063	134	0.9068703	59.94	0.0000
LTANET	14.212811	1	14.212811	939.32	0.0000
LMV	6.0813126	1	6.0813126	401.91	0.0000
LSALE	5.8102588	1	5.8102588	384.00	0.0000
COUNTRY	35.061228	11	3.1873843	210.65	0.0000
GROUP	3.0840952	11	0.2803722	18.53	0.0000
COUNTRY*GROUP	6.8310797	109	0.0626704	4.14	0.0000
Residual	53.079170	3508	0.0151308		
Total	174.59980	3642	0.0479406		

ARE/ATA	Coefficient	Std. Error	T	P>|t|
CONST	0.5461918	0.026957	20.26	0.000
LTANET	-0.1122720	0.003663	-30.64	0.000
LMV	0.0562162	0.002804	20.04	0.000
LSALE	0.0569540	0.002906	19.59	0.000
COUNTRY				
Australia	-0.2736398	0.043262	-6.325	0.000
Hong Kong	-0.2341697	0.034120	-6.863	0.000
Japan	-0.4708684	0.032951	-14.29	0.000
Malaysia	-0.3346237	0.042221	-7.926	0.000
New Zealand	0.1676379	0.056684	2.957	0.003
Philippines	-0.1827458	0.075796	-2.411	0.016
Singapore	-0.1243177	0.037169	-3.345	0.001
GROUP				
Finance/Real Estate	0.2660072	0.125786	2.115	0.035
Consumer Durables	-0.1897182	0.034373	-5.519	0.000
Food/Tobacco	-0.1388503	0.031587	-4.396	0.000
Capital Goods	-0.1284003	0.036385	-3.529	0.000
Utilities	-0.2164811	0.045627	-4.745	0.000
Textile/Trade	-0.1402718	0.032808	-4.276	0.000

Fig 1. Fixed Assets for Non-Financial Japanese Firms in 1995



Gross Fixed Assets - 1.74 Trillion Dollars

Fig 2. Average Corporate Real Estate Holdings (in $ mil)

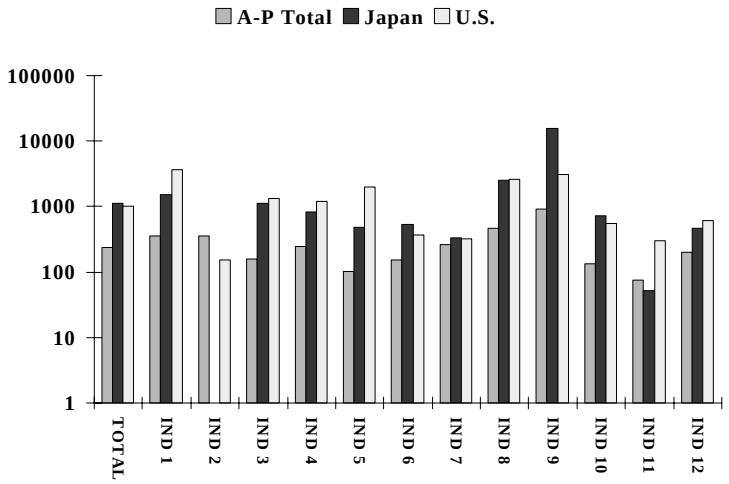


Fig 3. Ratio of Real Estate to Total Assets - by Country

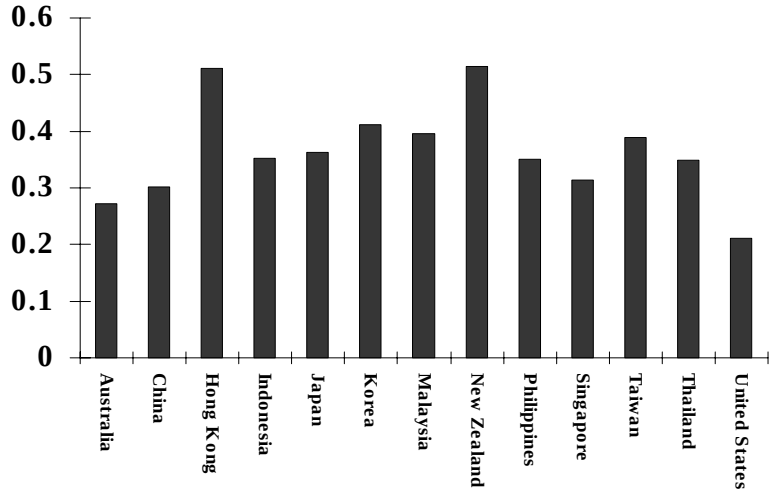


Fig 4. Ratio of Real Estate to Total Assets - by Industry

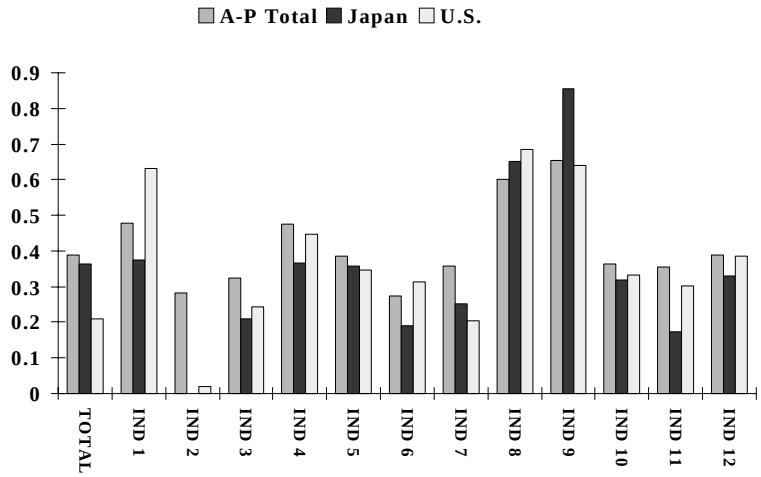


Fig 5. Corporate Real Estate Turnover Ratios in 1995

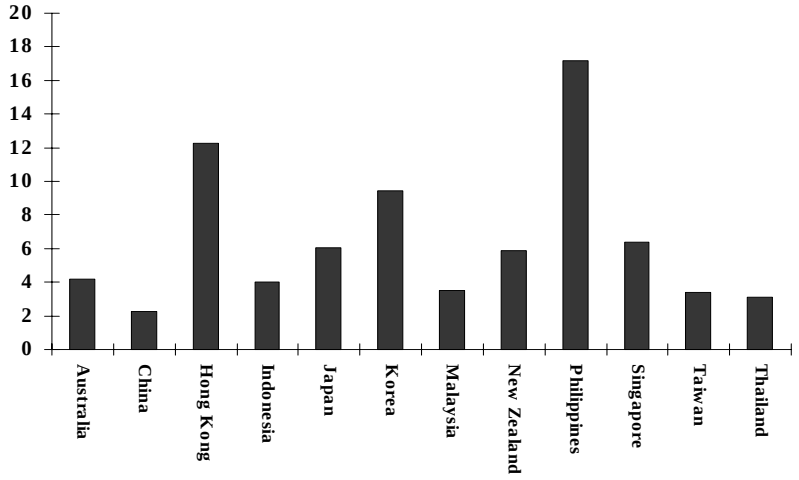


Fig 6. Returns on Corporate Real Estate in 1995