Data Article

Data on the correlations among brand value, market capitalization, and consolidated overseas sales ratios of Japanese companies

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ARTICLE INFO

Article history:
Received 29 January 2019
Received in revised form 20 February 2019
Accepted 25 February 2019
Available online 4 March 2019

ABSTRACT

This data article features a figure and tables that show the correlations among brand value by Brand Valuation (Interbrand Japan, Inc, Tokyo, Japan), market capitalization, and the consolidated overseas sales ratios of Japanese companies. The figure shows the scatter plot for market capitalization vs. brand value for Japanese companies. The lines in the plot show the regression fits for two groups of companies (domestic and global) with consolidated overseas sales ratios below or above 30%, respectively. The Pearson's correlation coefficients between brand value and market capitalization are calculated for global and domestic companies separately. Additionally, cross-tabulation statistics and Chi-square test of independence for brand values and consolidated overseas sales ratios were performed to assess their correlation.

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https://doi.org/10.1016/j.dib.2019.103808
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1. Data

This data article provides five sets of data: one figure and four tables. Table 1 shows brand values, consolidated overseas sales ratios, and market capitalization of 80 Japanese companies used in this article. The figure indicates the brand value (Interbrand Japan, Inc., Tokyo, Japan) of Japanese companies related to both their market capitalization and consolidated overseas sales ratios (Fig. 1). A scatter plot and regression lines indicate the correlation between brand value and market capitalization. We created regression lines for each global and domestic company with consolidated overseas sales ratios of above and below 30%. Table 2 presents the Pearson’s correlation coefficients between brand value and market capitalization. The Pearson’s correlation coefficients between brand value and market capitalization were higher for global and domestic companies when calculated separately compared to when they are calculated together, as Table 1 shows. The consolidated overseas sales ratio also relates to brand value. The cross-tabulation statistics and Chi-square test of independence (Tables 3 and 4) supports this finding.

2. Experimental design, materials, and methods

2.1. Design

Researchers can calculate the value of a company using many corporate valuation methods [1]. In this data article, we choose “brand value” based on Brand Valuation, a metric published by Interbrand Japan, Inc. (Tokyo, Japan), a branding agency.

2.2. Brand value and market capitalization

The brand value and consolidated overseas sales ratios for 80 Japanese companies (40 domestic and 40 global companies) for 2017 were collected from the website of Interbrand Japan Ltd [2,3]. The
Table 1  

| Brand | Sector | Brand value (US dollar) | Oversea sales ratio | Global/Domestic\(^1\) | Market cap (JPY) |
|-------|--------|------------------------|---------------------|------------------------|-----------------|
| NTT DOCOMO | Telecommunications | 9,543 | 5.0% | Domestic | 10,452,533 |
| Softbank | Telecommunications | 6,397 | 55.2% | Domestic** | 7,266,560 |
| Au | Telecommunications | 4,718 | 5.0% | Domestic | 8,364,618 |
| SMFG | Financial Services | 4,031 | 24.7% | Domestic | 5,165,545 |
| Recruit | Media | 3,222 | 35.6% | Domestic** | 2,385,650 |
| Rakuten | Internet Services | 2,968 | 19.6% | Domestic | 1,736,412 |
| Mizuho | Financial Services | 2,929 | 25.2% | Domestic | 4,495,915 |
| Kao | Personal Care | 2,247 | 35.0% | Domestic** | 2,724,120 |
| Suntoy | Food & Beverages | 2,201 | 41.6% | Domestic** | 1,419,855 |
| Kirin | Alcohol & Others | 1,666 | 34.6% | Domestic** | 1,652,055 |
| Asahi | Alcohol & Others | 1,516 | 13.7% | Domestic | 1,813,931 |
| Lawson | Convenience Store | 1,297 | 5.0% | Domestic | 800,394 |
| NISSIN | Fast Moving | 1,208 | 21.7% | Domestic | 714,179 |

Japan Airlines | Logistics | 1,123 | 39.0% | Domestic** | 1,122,932 |
| SECOM | Security | 1,017 | 5.0% | Domestic | 1,769,028 |
| Mitsubishi Estate | Construction & Real Estate | 922 | 5.0% | Domestic | 2,894,713 |
| Kampo Seimei | Financial Services | 795 | 5.0% | Domestic | 1,321,200 |
| FamilyMart | Convenience Store | 740 | 12.6% | Domestic | 833,767 |
| Calbee | Fast Moving Consumer Goods | 685 | 11.9% | Domestic | 509,739 |
| Mitsui Fudosan | Construction & Real Estate | 675 | 5.0% | Domestic | 2,370,001 |
| Meiji | Food & Beverages | 616 | 5.0% | Domestic | 1,600,122 |
| NEC | Computer Services | 616 | 21.4% | Domestic | 731,930 |
| LINE | Internet Services | 612 | 29.6% | Domestic | 934,818 |
| ROSE | Cosmetics | 586 | 17.7% | Domestic | 581,082 |
| Daiwa House | Construction & Real Estate | 563 | 5.0% | Domestic | 1,922,763 |
| NTT DATA | Business Services | 556 | 31.2% | Domestic** | 1,520,310 |
| Dai-ichi Life | Financial Services | 548 | 17.9% | Domestic | 1,846,153 |
| ORIX | Financial Services | 476 | 22.9% | Domestic | 2,205,220 |
| TOTO | Construction & Real Estate | 442 | 24.0% | Domestic | 743,321 |
| BANDAI NAMCO | Entertainment | 438 | 25.2% | Domestic | 699,300 |
| Yamato | Transportation | 424 | 5.0% | Domestic | 985,159 |
| Sekisui House | Construction & Real Estate | 414 | 5.0% | Domestic | 1,232,365 |
| ABC-MART | Apparel | 405 | 26.9% | Domestic | 527,382 |
| Resona | Financial Services | 390 | 5.0% | Domestic | 1,083,039 |
| Sompo Holdings | Financial Services | 370 | 12.2% | Domestic | 1,413,859 |
| Sumitomo Mitsui Trust | Financial Services | 345 | 12.2% | Domestic | 1,385,738 |
| Gusto | Restaurants | 289 | 5.0% | Domestic | 330,121 |
| Matsumotokiyoshi | Retail | 282 | 5.0% | Domestic | 222,369 |
| Nitori | Retail | 260 | 5.0% | Domestic | 1,438,555 |
| Sumitomo Realty | Construction & Real Estate | 251 | 5.0% | Domestic | 1,315,426 |

| Development | |
| Toyota | Automotive | 53,580 | 77.9% | Global | 20,291,687 |
| Honda | Automotive | 22,106 | 86.1% | Global | 5,695,131 |
| Canon | Electronics | 11,081 | 81.2% | Global | 4,023,964 |
| Nissan | Automotive | 11,066 | 85.2% | Global | 4,576,081 |
| Sony | Electronics | 8,315 | 71.4% | Global | 4,245,563 |
| MUFG | Financial Services | 7,435 | 38.5% | Global | 7,716,358 |
| Panasonic | Electronics | 6,365 | 52.3% | Global | 2,691,000 |
| UNIQLO | Apparel | 5,356 | 42.2% | Global | 3,761,372 |
| Subaru | Automotive | 3,566 | 81.3% | Global | 3,149,006 |
| Nintendo | Electronics | 3,250 | 73.1% | Global | 3,604,059 |
| Bridgestone | Automotive | 2,997 | 82.5% | Global | 3,183,296 |
| Mazda | Automotive | 2,072 | 80.6% | Global | 1,036,285 |
| Suzuki | Automotive | 1,893 | 67.1% | Global | 1,831,430 |
| Tokio Marine | Financial Services | 1,808 | 33.4% | Global | 3,142,969 |
| Shiseido | Personal Care | 1,639 | 61.1% | Global | 1,083,200 |
| Komatsu | Machinery | 1,496 | 77.6% | Global | 2,277,320 |

(continued on next page)
Daikin Machinery 1340 75.4% Global 2,954,589
Muji Retail 1275 35.1% Global 639,070
ASICS Sporting Goods 1246 76.4% Global 448,317
Unicharm Personal Care 1205 61.1% Global 1,551,155
Shimano Machinery 1190 90.8% Global 1,665,251
Ricoh Printers, Machinery 1146 65.5% Global 637,645
Hitachi Diversified 1105 48.9% Global 2,702,873
Nikon Precision Equipment 1017 85.8% Global 636,195
Mitsubishi Electric Diversified 970 42.6% Global 3,054,394
DENSO Automotive 946 61.4% Global 3,624,924
Yakult Food & Beverages 931 41.1% Global 861,960
Yamaha Diversified 900 84.8% Global 1,557,743
Olympus Precision Equipment 825 79.7% Global 1,285,018
Nomura Financial Services 789 31.8% Global 2,012,579
Fujitsu Computer Services 779 40.0% Global 1,289,828
Epson Printers, Machinery 732 75.8% Global 852,421
Isuzu Automotive 723 64.0% Global 1,102,525
Kikkoman Food & Beverages 714 53.1% Global 1,336,159
Ajinomoto Food & Beverages 711 53.1% Global 1,336,159
Konica Minolta Electronics 702 80.6% Global 473,007
Kubota Machinery 690 67.7% Global 2,109,516
Fujifilm Chemical 657 59.6% Global 2,045,637
Mitsubishi Motors Automotive 655 81.8% Global 871,815

* “Domestic” was defined as a company with overseas sales ratio less than 30%, and a company with more than 30% overseas sales was defined as “Global”. However, the companies indicated by ** have overseas sales ratios exceeding 30%, but because they have less than 30% of sales in each brand-bearing business, they are defined as domestic.

2.3. Statistical analysis

We present the correlation between brand value and market capitalization in a scatter plot and in regression statistics using Pearson's correlation coefficient. Cross-tabulation statistics and Chi-square test of independence were employed to assess the correlation between brand value and consolidated overseas sales ratios of Japanese companies listed in Table 1. All statistical analyses were performed using the free R software package (available at https://www.r-project.org) [4] and Microsoft Excel (Redmond, WA, USA).
Fig. 1. Scatter plot showing correlation between the brand values and market capitalizations of Japanese companies. Linear regression lines with 95% confidence intervals (gray). The lines were created for each group of domestic (magenta) and global (cyan) firms separately. The size of the circles indicates the consolidated overseas sales ratios.

Table 2
Pearson’s correlation coefficients between brand values and market capitalizations for the sample of Japanese companies.

|                  | Total (domestic + global companies) | Domestic companies | Global companies |
|------------------|-------------------------------------|-------------------|-----------------|
| Correlation coefficients | 0.864152*                          | 0.915341*         | 0.9350639*      |

* Statistically significant with a p-value < 0.01.

Table 3
Cross-tabulation statistics for brand value and consolidated overseas sales ratios (global and domestic) on Japanese companies listed in Table 1.

| Brand value | Global | Domestic |
|-------------|--------|----------|
| >1 billion US dollar | 25     | 15       |
| <1 billion US dollar   | 15     | 25       |
Table 4
Chi-square test of independence on the cross-tabulation (Table 2) with different correction methods to measure the relationship between consolidated overseas sales ratios and brand value. Both chi-square tests indicate the relationship between consolidated overseas sales ratios and brand value are not irrelevant.

| Correction methods          | Chi-square | Df | p-value | Significance |
|----------------------------|------------|----|---------|--------------|
| None                       | 5          | 1  | 0.02535 | Significant  |
| Yates' continuity correction| 4.05       | 1  | 0.04417 | Significant  |

*a Correlations with a p-value < 0.05 are considered significant.*

Transparency document

Transparency document associated with this article can be found in the online version at https://doi.org/10.1016/j.dib.2019.103808.

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