

**DBA Thesis Evaluation**  
**“Development and Application of Profitability Indices” by M. Gary Okamoto**  
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Gary Okamoto's DBA thesis, “Development and Application of Profitability Indices,” consists of two parts: (1) seven chapters of text (142 pages), and (2) 285 pages of data. The first half of the text consists of developing a new industry-wide profitability metric suitable for evaluating returns relative to industry benchmark, selecting the industries to be analyzed, and presenting the results of the analyses. The second half of the text consists of implications to be drawn from the resulting data.

The primary metric used in the thesis to measure industry profitability is ROIC (return on invested capital), which has operating income as the numerator and short-term and long-term capital invested as the denominator. Invested capital is measured as the sum of total stockholder's equity, interest bearing financed debt, and minority interest to the stockholder's equity less cash. The thesis compares and contrasts ROIC with traditional measures of profitability, including return on sales (ROS), return on assets (ROA), return on equity (ROE), and others.

To select the Japanese industries for this study, a rigorous selection process was first undertaken to determine which industries were most competitive on a global basis, using United Nations trade statistics and other published sources. ROIC was then measured across 49 manufacturing industries, 49 service industries, and four financial industries<sup>1</sup> for Japan and “Global” (i.e., rest of the world excluding Japan) over a five-year period using the OSIRIS database.<sup>2</sup> Data for 1,922 companies and 10,034

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<sup>1</sup> There were only four financial industries analyzed since ROIC was not deemed to be appropriate for financial institutions due to different accounting principles used in the financial sectors and the way those principles affected the ROIC calculations.

<sup>2</sup> OSIRIS was a fully integrated public company data covering 120 countries produced commercially by Bureau van Dijk Electronics Publishing. Among the various databases available (e.g., Bloomberg, Thomson Financial, Amadeus, OneSource, etc.), OSIRIS was

foreign competitors were used to develop industry-wide ROIC measures.

The bulk of the thesis consists of presenting the results of the analyses, which took two forms: (1) presenting of raw data industry by industry, and (2) comparing industries on the basis of ROIC both within Japan and within “Global.” For each of the 102 industries, the raw data showed ROIC, ROS, ROA, and ROE measures over a five-year period for Japan and Global, the number of companies included in the database, as well as ROIC and revenue data for the largest Japanese and Global companies in a particular industry classification. Comparisons were conducted separately for the manufacturing sector and the service sector. For each sector, the ranking of the most profitable industries was presented separately for Japan and Global. For example, the leading manufacturing industry in Japan was the “toys, games, and sporting athletic goods” industry, with ROIC of 43.2%, and the lowest (ranked No. 49) was the “ship and boat building and repairing” industry with 2.3% ROIC. The leading service industry in Japan was the “internet service providers” industry, with 83.6% ROIC, and the leading industry in the Global category was the “business services – advertising” industry, with 75.2% ROIC. Comparisons were also made on the basis of “fastest rising ROIC” industries for Japan.

The thesis then goes a step further to compare industry ROIC across Japan and Global. It is here that the author uncovers the most striking finding, namely that only one Japanese manufacturing industry (toys, games, and sporting athletic goods) outperforms Global and only eight out of the 49 Japanese service industries outperform Global on the basis of ROIC. The author calls these industries “diamond” industries.

In the second half of the thesis, these “diamond” industries are analyzed in depth, followed by an analysis of “diamond” companies, namely the top Japanese companies whose five-year average ROIC exceeded the Japan and Global benchmarks. Of the 25 “diamond” companies, 19 are from the service industry.

The Thesis Review Committee, consisting of Hiroataka Takeuchi, Yoko Ishikura, and Emi Osono, evaluated the thesis and conducted an oral examination on January 31, 2006. The Committee concluded that the raw data presented in the appendices were extremely detailed and compiled methodically. Such an endeavor, we believe, is unprecedented. The database should serve as the benchmark for any researcher

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chosen because of its data quality and quick search process.

conducting analyses at the industry level and at the company level. The in-depth and rich database provides a starting point to conduct further comparative study within Japan and between Japan and the rest of the world.

The ranking of the industries are interesting of itself, but the comparison of Japanese industries with Global industries provides a clear-cut message to Japan, namely that it lags behind its international competitors in terms of profitability returns. While a few standout industries in which Japan excelled were revealed, some of the key industries once considered to be pillars of Japanese competitiveness appeared lackluster. The findings have important implications for corporate managers, scholars, and policy makers.

The Committee, however, found Chapter 6 (Studies of Diamond and Flagship Industries) to be less rigorous than the data development and analysis part of the thesis. The author uses two frameworks developed by Michael Porter, namely the Five Forces framework and the Diamond framework, to investigate the leading Japanese manufacturing and service industries as well as leading Japanese companies. The author wrote a mini-note/mini-case to analyze selected industries and companies, but the application of these frameworks to analyze corporate performance was not appropriate.

Overall, however, the Committee was strongly impressed with the meticulousness with which the ROIC index was constructed, the depth and breadth of industries covered, the quantity and quality of the raw data created, and the potential such a database will offer for future research. As such, the Committee agreed that M. Gary Okamoto's thesis fully satisfies the requirement for a DBA thesis of the International Business Strategy Program at Hitotsubashi University Graduate School of International Corporate Strategy.

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