The Effects of ESG on Japanese Manufacturing Companies: A Dynamic Panel Approach Using Time Lags

Research Representative: CORTEZ Michael A., Professor, APU

The business rationale for sustainability promotes that corporate social responsibility (or social performance) leads to enhanced revenues, reduced costs, increased profits, lowered costs and overall value created for the business. Over the years, various measures of sustainability were proposed to universally capture these initiatives of a business organization from the Global Reporting Initiative to the Sustainability Index and finally to the Environmental Accounting Reporting of Japanese manufacturing companies. However, as Sustainable Development Goals (SDGs) gathered worldwide currency, there was a need for a metric system to measure sustainability.

Bloomberg in coordination with Deloitte and various industry bodies developed the ESG Score Index which assess and compare company performance based on these three factors. There is an overall ESG score index, and separate indices for environment, social and governance factors with more detailed sub-variables and scores. These will be deemed as independent variables with a built-in time lag of one year since corporate financial performance is reported for one year and ESG scoring is released the year after. On the other hand, financial performance variables such as profitability (return on sales), liquidity (current ratio), firm size (market capitalization), leverage or business risk (debt to equity capital structure) and market value (Tobin's q) shall be deemed as dependent variables. Considering that ESG reporting is fairly new with a seven-year time series, we cannot consider growth factors such as compounded annual growth rates for revenues, profits and assets. Likewise, a static but balanced panel regression and cross section analysis cross comparing automotive and electronics in the seven-year period may be considered weak given the nature of the dataset. In this dataset, I propose that dynamic panel modelling of generalize methods of moments (Arellano bond) be used to estimate causality between the ESG indices and corporate financial performance. Our expected results is that sustainability practices take a while before it is appreciated by customers and the market and translated into business value. This means one to two years time-lag must be felt from the independent variables causing the dependent variables.

This is pioneering in the field of sustainability research to support the idea that it is worthy of investments and business value. Initially, it may strike as an investment hence a negative correlation but certain variables signal that the market appreciates governance restructuring in corporate Japan, and that there is a need for more disclosures on social activities. Environmental activities may have been in the asset threshold for a long time since the institution of Environmental Accounting and Reporting by the Ministry of Environment of Japan.