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Catherine J. Morrison-Paul
University of California, Davis

Donald S. Siegel
Rensselaer Polytechnic Institute

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Catherine J. Morrison Paul
Department of Agricultural and Resource Economics
University of California, Davis
One Shields Ave.
Davis, CA 95616-8512
Tel: (530) 752-0469
Fax: (916) 752-5614
Email: cjmpaul@primal.ucdavis.edu

Donald S. Siegel
Department of Economics
Rensselaer Polytechnic Institute
Sage Building-Room 3506
110 8th Street
Troy, NY 12180-3590
Tel: (518) 276-2049
Fax: (518) 276-2035
Email: sieged@rpi.edu

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Corporate Social Responsibility and Economic Performance

Abstract

We describe some perspectives on corporate social responsibility (CSR), in order to provide a context for considering the strategic motivations and implications of CSR. Based on this framework, which is based on characterizing optimal firm decision making and underlies most existing work on CSR, we propose an agenda for further theoretical and empirical research on CSR. We then summarize and relate the articles in this special issue to the proposed agenda.

Keywords: Corporate Social Responsibility (CSR), Total Factor Productivity (TFP), Environmental Performance

JEL Classification: L15, L21, M14

Introduction

In recent years, academics in fields of several business administration have studied the economic and managerial implications of corporate social responsibility (CSR). CSR may be defined, consistent with McWilliams and Siegel (2001), as actions on the part of a firm that appear to advance the promotion of some social good beyond the immediate interests of the firm/shareholders and beyond legal requirements. That is, CSR activities of companies are those that exceed compliance with respect to, e.g., environmental or social regulations, in order to create the perception or reality that these firms are advancing a social goal.

It is not surprising that some firms choose to be socially responsible in this sense. Most large multi-national companies encounter extensive pressure from consumers, employees, suppliers, community groups, government, non-governmental organizations (NGOs), and institutional shareholders to engage in CSR. Such CSR activities might include incorporating social characteristics or features into products and manufacturing processes (e.g., producing aerosol products with no fluorocarbons or making greater use of environmentally-friendly technologies), striving to reach higher levels of environmental performance via recycling or pollution abatement (e.g., adopting an aggressive stance towards reducing emissions), or promoting the goals of community organizations or NGOs (e.g., United Way or Greenpeace). From an economics perspective, companies would be expected to engage in such activities if the perceived (measured or unmeasured) benefits exceeded the associated costs in the view of the decision-making entity.

Recent theories of CSR (Baron, 2001, McWilliams and Siegel, 2001, Bagnoli and Watts, 2003) thus conjecture that companies engage in “profit-maximizing” CSR, based on anticipated benefits from these actions. Examples of such benefits might include reputation enhancement,

the potential to charge a premium price for its product(s), or the enhanced ability to recruit and retain high quality workers. For a CSR action to be undertaken by a company, the benefits of engaging in this activity must offset the higher costs associated with the additional resources that must presumably be allocated for the firm to achieve CSR status. Due to rising pressures for and visibility of CSR activities in the increasingly socially aware climate of developed countries, the end result has been a substantial increase in investment in such activities in all OECD nations.

Based on the profit-maximization CSR hypothesis, most academic studies of CSR have focused on a narrowly-defined business-oriented research question: do socially responsible firms achieve higher, lower, or similar levels of *financial performance* than comparable firms that do not meet the same CSR criteria (Griffin and Mahon, 1997, Dowell, Hart, and Yeung, 2000, McWilliams and Siegel, 2000, and Orlitzky, Schmidt, and Rynes, 2003)? Financial performance is typically defined in such studies in terms of either (short- or long-run) stock prices or accounting profitability (e.g., return on equity, return on investment, or operating profit). Such studies also tend to use the firm rather than the establishment or sector as the unit of observation for empirical analysis, both because they are advancing a “business case” for CSR and due to the ready availability of company-level financial data (e.g., accounting data from Standard and Poor’s Compustat or stock price data from the Center for Research in Security Prices).

Although the business administration perspective of this body of research justifies an exclusive focus on financial measures of performance, from an economic perspective this is unfortunate. A more salient issue in this context is the relationship between *economic performance* and CSR activities, where economic performance involves technological and economic relationships between output production and input demand, recognizing opportunity costs of inputs and capital accumulation. For example, economic performance may be defined as

the amount of (good or marketable) output producible from a given amount of inputs (productivity), the deviation of output produced from that implied by “best practice” production (technical efficiency), or the input/resource use required to produce a given amount of output (cost effectiveness). Because such measures are based on evaluating marketed outputs and inputs, this raises questions about whether conventional productivity/performance estimates are biased from not recognizing environmental or other social externalities, and how economic performance might be affected by reducing such externalities.

For public policy makers, clarifying such relationships helps to identify the resource costs of CSR, or “market failures” with respect to CSR (Siegel, 2001). Such information in turn provides guidance on optimal levels of “social responsibility” regulation. For managers, information on such relationships is useful because it helps to inform resource allocation decisions regarding CSR activities. That is, empirical evidence on the magnitude of the tradeoff between cost or productivity and CSR facilitates determining the amount of CSR expenditure that is economically justifiable.

Our objective in this special issue is to explore this economic perspective to CSR, and thus address some of these gaps in the literature on CSR. After identifying some of the leading contributors to the literature on environmental externalities and economic performance, we solicited manuscripts on the economics of CSR and held a workshop in Nottingham, England, jointly sponsored by the School of Humanities and Social Sciences at Rensselaer Polytechnic Institute and the International Centre for Corporate Social Responsibility (ICCSR) at the University of Nottingham. Among the authors and discussants at the workshop were scholars from several academic disciplines (economics, political science, accounting, finance, and management), including many international contributors and junior scholars.

The best economics-oriented papers generated from this workshop were selected for this special issue, after an additional round of reviews. These studies address two critical themes of the economics of CSR: (1) methodological issues relating to productivity measurement when “bad” outputs that impose social costs are jointly produced with good or marketable outputs; and (2) empirical relationships between environmental and social regulation/performance and economic performance/productivity. In addition, all but one of the articles in this special issue are based on establishment-level data, which is generally regarded as more appropriate for productivity measurement than firm-level data. In the remainder of our introduction to this special issue, we provide a brief summary of each of these studies in the context of the economics of CSR and CSR impacts on productivity and costs.

Ronald Shadbegian and Wayne Gray analyze the relationships among environmental performance, productivity, and regulatory activity. The authors link confidential U.S. databases from the Census Bureau (the Longitudinal Research Database, which contains detailed production data, and the Pollution Abatement Costs and Expenditures survey) and the EPA (the National Emissions Inventory, the Permit Compliance System, the Toxic Release Inventory, and the Compliance Data System).

The authors estimate a stochastic frontier production function model, based on establishment-level data from the pulp and paper, oil, and steel industries. The results show fairly substantial deviations of production from the efficient frontier, which depend on actions affecting environmental degradation. In particular, technical efficiency is lower for older than younger establishments, although both have roughly the same level of environmental performance as proxied by emissions. Efficiency is also lower for establishments that spend more on pollution abatement. However, negligible production efficiency effects appear to result

from additional regulatory inspections, which imply somewhat lower emissions. They also report that regulatory actions, such as local stringency of air pollution limits, are associated with higher levels of efficiency. The latter result suggests that such activities could be stressed by policy with limited productivity consequences.

Donald Vitaliano and Gregory Stella provide direct empirical evidence on the productivity impact of CSR, based on assessment of a key piece of social legislation in the banking industry. The Community Reinvestment Act of 1977 established an elaborate, on-going system of social rating for banks. The data allow the authors to identify whether a bank achieves a social rating of “outstanding” with respect to their lending practices, which is defined as an act of *voluntary* CSR since such companies are deemed to be going beyond compliance, consistent with McWilliams and Siegel (2001).

The authors estimate a data envelopment analysis (DEA) cost minimization model to analyze the relationship between such CSR ratings and productivity. Interestingly, they report no difference in technical efficiency between banks that receive an outstanding rating and those that receive a satisfactory rating. However, cost efficiency does differ between CSR and non-CSR banks. An outstanding rating involves annual extra costs of \$7.4 million, or 1.3% of total costs, which the authors interpret as the shadow price of CSR since it is not based on measured output production or input use. Further, firms appear to recoup the additional cost of being socially responsible. That is, the findings suggest that pre- and after-tax rates of return are equivalent for banks receiving outstanding and satisfactory ratings.

Wendy Chapple, Catherine Morrison Paul, and Richard Harris empirically analyze the cost and input use impacts of voluntary waste minimization, which is viewed as a form of environmental CSR. Their empirical analysis is based on the Annual Business Inquiry

Respondents Database (ARD), which contains longitudinal data for thousands of U.K. manufacturing establishments. In their framework, plants produce bad outputs such as waste, which have negative environmental externalities, jointly with their good outputs. Although firms have tax and reputation-enhancement incentives to reduce waste, doing so can result in less output for a given input base (lower productivity), or more input use for a given production level (higher costs).

To assess such tradeoffs, the authors estimate a generalized Leontief cost function, with shift factors and output levels in quadratic form, following Paul (2001). This functional form allows the authors to generate detailed evidence on substitution patterns involving output and waste production and capital, labor, and materials input use. They find that reducing waste is materials using (implying increased intermediate materials demand or outsourcing), but capital and labor input saving (implying reduced investment and employment). These patterns vary significantly, however, by county, region, and industry, suggesting substantial differences in the costs of limiting waste generation/disposal that depends on various internal and external factors.

Our special issue concludes with a paper by Rolf Färe, Shawna Grosskopf, and Carl Pasurka, who introduce an index number approach based on Malmquist quantity indexes to deal with the measurement of productivity when there are good and bad outputs: an Environmental Performance Index (EPI). The authors show that the EPI has highly desirable index number properties, and that with only one good and one bad output it simplifies to an index of the good to bad output ratio over time.

The authors apply this model to longitudinal data on U.S. coal-fired power plants, for which a natural experiment on the production impacts of environmental CSR actions arose when the Phase I Acid Rain program of the U.S. Clean Air Act, designed to reduce sulfur dioxide

emissions in power plants, was implemented in 1995. The authors find that plants taking part in this program experienced a substantial improvement in their environmental performance, as measured by the EPI, during the sample period. This suggests that encouragement for CSR can have beneficial social impacts as it motivates firms to adapt their production practices and thus their good to bad output balance.

Gerald Granderson addresses the effects on productivity measures when there is a bad output that contributes to environmental damage. He conducts a decomposition of total factor productivity growth for firms that are subject to regulation due to their production of such a bad output. As a basis for this decomposition, CSR is framed within a production function context, in which the production of good and bad outputs yields *social* benefits and costs that are recognized by socially responsible firms.

The author decomposes total factor productivity growth into scale economies, technical change, and efficiency change, based on longitudinal data from 34 U.S. investor-owned electric utilities and using the Bauer (1990) method combined with techniques developed by Denny, Fuss, and Waverman (1981) and Granderson (1997). He identifies the productive contribution of the bad output using methods developed by Ball, Fare, Grosskopf, and Zaim (2005) and Chapple, Morrison Paul, and Harris (2005). He finds that improvements in scale, efficiency, and technical change contributed to productivity growth in this sector, but that failure to account for production of the bad output results in overestimation of the overall rate of productivity growth and its scale economy and technical change components. This suggests that CSR activities limit the productive effects of technical change and scale economies.

In sum, these articles provide an important foundation for economic CSR analysis by showing how one might evaluate the costs and benefits of CSR activities in the context of

productivity and cost efficiency. They document that CSR activities may affect the productive impacts of efficiency, technical change and scale economies, as well as increase input costs and composition (potentially increasing outsourcing and reducing investment and employment). The findings also indicate that these impacts are dependent on firm characteristics such as the motivations for socially responsible actions, tax laws, location, and plant age and innovation activities. These results provide provocative insights, therefore, regarding how CSR must be balanced by benefits or regulations (implied social benefits) to motivate firms to carry out such activities.

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