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CORPORATE SUSTAINABILITY REPORTING: EXAMINING THE RELATIONSHIP BETWEEN VALUATION, REGULATION AND MARKET LOGIC

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ABSTRACT

This paper links three threads in the environmental economics, management and regulatory literatures: 1, environmental externalities and their impact on the demand and supply for environmental amenities; 2, ecosystem services and methods used to quantify their values; and 3, the impact of payments for ecosystem services on corporate balance sheets.

A foundational concept of environmental economics is that when firms decide how much to produce, or consumers how much to consume, they respond to "prices." Externalities – e.g., pollution – are negative byproducts of production or consumption that are not reflected in the market price. When

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goods such as clean air and clean water are underpriced, they tend to be overused. The competition among generations for non-renewable resources establishes a peculiar externality since the current generation is the only one present when the relevant decisions are taken.

We argue that the preservation of environmental functions, services and infrastructure is the solution to intergenerational environmental externality. The valuation of environmental externalities is constrained by the temporal and spatial range within which individuals act. Corporations, however, are legal fictions whose scope of action can be global, and not bounded by the temporal constraints of individuals. When corporations determine how ecosystem services can be accurately accounted for on their balance sheets, the temporal and spatial range of their activities must be taken into account.

I. INTRODUCTION

When firms decide how much to produce, or consumers how much to consume, they respond to "prices." Externalities – e.g., pollution – are negative byproducts of production or consumption that are not reflected in the market price; they are also termed "third-party effects." Goods, such as clean air and clean water, that are underpriced tend to be overused (International Monetary Fund).

If air and water are "free goods", then firms will overuse them, moreover, they will continue to pollute up to the point that the marginal product of pollution approaches zero. If we

"price" environmental goods properly (e.g., through pollution taxes or permits) then we can create incentives for optimal use. The first step in internalizing environmental externalities is to determine their value in monetary terms (Adams, et al. 2000).

The monetary cost of externalities should be absorbed by the party responsible for the environmental damages; this is often referred to as the "polluter pays principle" (London School of Economics and Political Science). Direct valuations are based on prices observed in real markets. Several methods analyze, modify, project, transfer and extrapolate market prices in order to give externalities a monetary value. Travel cost, hedonic prices, and so on, all work within this context. Indirect valuations of environmental externalities are based on stated preferences expressed in hypothetical markets. Contingent valuation and choice modeling studies ask the individual to value environmental impacts and environmental externalities (Adams, et al. 2000).

II. ENVIRONMENTAL IMPACTS ACROSS TIME AND SPACE

Valuation of individual ecosystems are limited in both time and space and some environmental impacts (climate change, storage of nuclear waste) are extremely long-lived. Valuation of individual systems tend to be limited by the human lifetime. In some cases, a premium inspired by concern for direct descendants. Individual valuations are similarly confined by the spatial range within which the individual acts and perceives. Altruistic considerations can

exist only at a limited level which cannot seriously alter aggregate estimates (Abdallah 2017).

The preservation of environmental functions, services and infrastructure is the solution to intergenerational environmental externality. This should be designed in environmental terms which cannot be expressed through economic valuations. By setting targets in biological–ecological terms, the environmental rights of future generations are preserved and externalities detrimental to sustainability are avoided (Beck and Martinot 2004).

Economists' preference for market-based instruments should be reassessed in the light of the demand for sustainability and the preservation of environmental rights of future generations. Intergenerational externalities can be remedied by (Nieuwlaar 2004):

- investing in manufactured capital (to replace non-renewable resources);
- bequeathing resource-saving technology to future generations;
- choosing an appropriate social discount rate for future utilities.

The competition among generations for non-renewable resources establishes a peculiar externality since the current generation is the only one present when the relevant decisions are taken. Although this externality cannot be eliminated, it probably can be moderated through the recognition of some property rights for the generation to come (Islam and Ryan 2016).

III. SUPPORTING SERVICES

According to the National Wildlife Federation, the Millennium Ecosystem Assessment (MA), a major UN-sponsored effort to analyze the impact of human actions on ecosystems and human well-being, identified the following categories of ecosystem services:

Provisioning Services include food, fresh water, wood, fiber and fuel.

Ecosystems Functions that are the foundation for other functions:

- **Primary production:** the synthesis of organic compounds from atmospheric or aqueous carbon dioxide. It principally occurs through the process of photosynthesis, which uses light as its source of energy, but it also occurs through chemosynthesis, which uses the oxidation or reduction of inorganic chemical compounds as its source of energy.
- **Nutrient Cycling:** the movement and exchange of organic and inorganic matter back into the production of matter. Energy flow is a unidirectional and noncyclic pathway, whereas the movement of mineral nutrients is cyclic. Mineral cycles include the carbon cycle, sulfur cycle, nitrogen cycle, water cycle, phosphorus cycle, oxygen cycle, among others that continually recycle along with other mineral nutrients into productive ecological nutrition.
- **Soil Formation:** organic matter, minerals, gases, liquids, and organisms together supporting life. a combination of effects including weathering,

structural development of the soil, differentiation of that structure into horizons or layers, and lastly of its movement or translocation. All of these functions, in their turn, modify the soil and its properties (Food and Agriculture Organizations of the United Nations 2024).

Regulating Services:

- **Air Quality Regulation**
    - Ability of the atmosphere to cleanse itself of pollutants has declined since pre-industrial times but not by more than 10%
- **Regional and Local Climate Regulation**
    - Changes in land cover have affected regional and local climates both positively and negatively, but there is a preponderance of negative impacts; for example, tropical deforestation and desertification have tended to reduce local rainfall
- **Water Purification and Waste Treatment**
    - Globally, water quality is declining, although in most industrial countries' pathogen and organic pollution of surface waters has decreased over the last 20 years
    - Nitrate concentration has grown rapidly in the last 30 years

- **Pest Regulation**
    - In many agricultural areas, pest control provided by natural enemies has been replaced by the use of pesticides – such pesticide use has itself degraded the capacity of agroecosystems to provide pest control
- **Pollination**
    - There is established but incomplete evidence of a global decline in the abundance of pollinators
- **Natural Hazard Regulation**
    - The capacity of ecosystems to buffer from extreme events has been reduced through loss of wetlands, forests and mangroves. People increasingly are occupying regions exposed to extreme events.
- **Cultural Services** (Food and Agricultural Organization of the United Nations)
    - Aesthetic – animals, plants and ecosystems, which inspire our arts, culture, design and science.
    - Spiritual – natural heritage, spiritual sense of belonging, traditional knowledge and associated customs.
    - Recreational – natural-based recreation opportunities, which play a significant role in maintaining mental and physical health.

(Food and Agricultural Organization of the United Nations).

IV. SUSTAINABILITY – WHAT ARE WE MEASURING?

Sustainability must be Integrated into Strategic Planning & Management (Chladek 2019) and built into:

- Economic/financial planning
- Environmental planning
- Social performance (labor rights)
  - Compensation and benefits
  - Diversity
- Human rights
- Products & services
- Product responsibility
- Society (overall impact)

The *UN Global Compact-Accenture CEO Study on Sustainability 2013* shows that CEOs recognize the sustainability challenge, but grapple with measuring and valuing their activities

Sustainability is perceived to be very important to the future success of their business:

- 93% believe that sustainability will be important to the future success of their business.

- 80% view sustainability as a route to competitive advantage to their industry.

However, CEOs find sustainability difficult to implement and quantify:

- 38% believe they can accurately quantify the value of their sustainability efforts.
- 37% see the lack of a link to business value as a barrier to accelerating progress.

The Sustainable Accounting Standards Board (SASB) has developed a complete set of 77 industry standards. In November 2018, SASB published these standards, providing a complete set of globally applicable industry-specific standards which identify the minimal set of financially material sustainability topics and their associated metrics for the typical company in an industry. SASB staff and Standards Board followed a Conceptual Framework and Rules of Procedure to develop these standards, which are designed to be cost-effective for companies to implement and decision-useful to both companies and investors. These standards are explained graphically through the Materiality Map, are available for individual sector download and may be viewed through the complete Standards Navigator database.

V. MARKET LOGIC AND CORPORATE SUSTAINABILITY

Corporate sustainability is defined as the contribution of business firms to sustainable development (Bansal 2005; Dyllick and Hockerts 2002). Conventional business firms predominantly follow a market logic that

focuses on generating profit. In contrast, sustainable business models follow a comprehensive sustainability logic that integrates economic, ecological and social considerations with regard to present and future generations. How business firms deal with sustainable development challenges depends on the information that is available for decision-making and how actual decisions are taken. Accounting constructs the reality that management refers to (Hines 1988) as well as how stakeholders perceive and organization (O'Dwyer 2005).

The dominance of market logic turns ecological and social performance into a means for the attainment of the objective of financial performance (Schneider 2015). Corporate sustainability is regarded by some as just another opportunity to advance economic objectives (Laine 2010). In order for business firms to embrace sustainability logic, there must be incentives based on market logic.

Sustainability reporting has markedly increased in the last several years. According to the KPMG Survey of Sustainability Reporting (2022), about 96% of global firms engage in sustainability reporting and that it is a worldwide standard practice to use Global Reporting Initiatives reporting standards (KPMG 2022). However, not all nations engage in the same level of sustainability reporting, for various reasons (Li, et al. 2018).

1. Comparing Turkey with Greece and Russia

The concept of sustainability reporting and corporate social responsibility emerged in Turkey in the late 1990s and early 2000s with the increasing integration of Turkish companies with the international economy (Akdogan et al. 2020) Turkish companies started to initiate environmental

protection, promotion of social welfare and justice to gain competitive advantages in the global arena. Yet, compared to two of its neighbors, Turkey lags in the number of companies preparing sustainability reports – Russia 35%, Greece 27%, Turkey 11%.

Why do Russian and Greek companies engage in more sustainability reporting than Turkish companies do? The Russian economy is dominated by the energy sector so Corporate Social Responsibility (CSR) focus on energy saving and environmental protection. Greek companies invest in environmental projects largely because of European Union regulations. Turkish companies invest in educational facilities and supporting women and disabled people in society. In other words, the Turkey's market logic is not dependent upon sustainability reporting; therefore, Turkey focuses on the educational and social services issues that affect its economy.

2. The Nordic Model

Nordic companies appear to be the pioneers in sustainability reporting. Hydro, a Norwegian company, was the first company in the world to produce an environmental report of its performance in 1989 (Laine et al. 2021). Denmark first introduced sustainability reporting policies in 1993 (Lueg and Pusheva 2021). Iceland began requiring polluting firms to report environmental issues in 2002 (Carrots and Sticks 2013).

This begs the question: Why are Nordic companies among the first in the world to engage in sustainability reporting? Generally, the Nordic model is well-known for its emphasis on social welfare and improving the lives of the citizenry (Gjølberg 2013; Strand et al. 2015); therefore,

sustainability reporting is seen as being consistent with the ideals of improving society. The Nordic market logic strongly encourages Nordic companies to improve and report their environmental performances, which results in greater corporate legitimacy (Anas et al. 2015; Bravi et al. 2020; Comoglio and Botta 2012; Nishitani et al. 2021).

3. The South Asian Experience

When it comes to sustainability reporting, South Asia has a comparatively weaker presence on a global scale. The relatively weaker South Asian presence in sustainability reporting is due to (Masud et al. 2018; Majeed et al. 2015; Farooque et al. 2007; Mukherjee-Reed 2002; Malik and Kanwal 2016; Lone et al. 2016; Shamil et al. 2014; Ganapathy and Kabra 2017):

- Companies being mostly controlled by family members
- A lack of effective regulation and enforcement
- High corruption and an absence of transparency
- A dependency on international loans and grants
- Little pressure from local and/or global environmental activists

In general, the South Asian market logic doesn't emphasize environmental performance and sustainability reporting.

VI. CONCLUSION

The monetary cost of externalities should be absorbed by the party responsible for the environmental damages. Several methods analyze, modify, project, transfer and

extrapolate market prices in order to give externalities a monetary value. Travel cost, hedonic prices, and so on, all work within this context. Indirect valuations of environmental externalities are based on stated preferences expressed in hypothetical markets. Contingent valuation and choice modeling studies ask the individual to value environmental impacts and environmental externalities.

The preservation of environmental functions, services and infrastructure is the solution to intergenerational environmental externality. This should be designed in environmental terms which cannot be expressed through economic valuations. By setting targets in biological–ecological terms, the environmental rights of future generations are preserved and externalities detrimental to sustainability are avoided.

Conventional business firms predominantly follow a market logic that focuses on generating profit. In contrast, sustainable business models follow a comprehensive sustainability logic that integrates economic, ecological and social considerations with regard to present and future generations. How business firms deal with sustainable development challenges depends on the information that is available for decision-making and how actual decisions are taken. Accounting constructs the reality that management refers to as well as how stakeholders perceive the organization.

REFERENCES

Abdallah, T. (2017) SUSTAINABLE MASS TRANSIT CHALLENGES AND OPPORTUNITIES IN URBAN PUBLIC TRANSPORTATION, New York: Elsevier, 2017.

Adams, J.S., L.S. Kutner and B.A. Stein, ed. PRECIOUS HERITAGE, New York: Oxford University Press, 2000.

Akdogan, N., Selimoglu, S.K., and Turkcan, M. (2020) *Sustainability Accounting and Corporate Social Responsibility in Turkey and in its Region* JOURNAL OF ACCOUNTING AND MANAGEMENT INFORMATION SYSTEMS 19(1).

Anas, A., Abdul Rashid, H.M., Annuar, H.A. (2015) *The Effect of Award on CSR Disclosures in Annual Reports of Malaysian PLCs* SOC. RESPONSIB. J. 11 (4), 831–852. https://doi.org/10.1108/SRJ-02-2013-0014

Bansal, P. (2004) *Evolving Sustainably: A Longitudinal Study of Corporate Sustainable Development* STRATEGIC MANAGEMENT JOURNAL 26(3): 197-218.

Beck, F and Martinot, E. *Renewable Energy Policies and Barriers,* ENCYCLOPEDIA OF ENERGY, Boston, Elsevier, 2004.

Bravi, L., Santos, G., Pagano, A., Murmura, F. (2020) *Environmental Management System According to ISO 14001:2015 as a Driver to Sustainable Development* CORP. SOC. RESPONSIB. ENVIRON. MANAG. 27 (6), 2599–2614. https://doi.org/10.1002/csr.1985

Carrots and Sticks, 2013. *Sustainability Reporting Policies Worldwide – Today's Best Practice, Tomorrow's Trends.*

Available at https://www.carrotsandsticks.net/media/4ldnklxn/carrots-sticks-2013.pdf

Chivian, E. and A. Bernstein, ed. SUSTAINING LIFE, New York, Oxford University Press, 2008.

Comoglio, C., Botta, S. (2012) *The Use of Indicators and the Role of Environmental Management Systems for Environmental Performances Improvement: A Survey on ISO14001 Certified Companies in the Automotive Sector* J. CLEAN. PROD. 20 (1), 92–102. https://doi.org/10.1016/j.jclepro.2011.08.022

Dylick, T. and K. Hockerts (2002), *Beyond the Case for Corporate Sustainability,* BUSINESS STRATEGY AND THE ENVIRONMENT March/April: 130-141.

Chladek, Natalie (2019) *Why You Need Sustainability in Your Business Strategy,* Harvard Business School Online, The Importance of Sustainability in Business | HBS Online

Farooque OA, Zijl TV, Dunstan K, Karim AKMW (2007) *Corporate Governance in Bangladesh: Link between Ownership Concentration and Financial Performance* CORP GOVERN 15(6):1453–1468.

Food and Agricultural Organization of the United Nations (2023), *Ecosystem Services & Biodiversity* Cultural services | Ecosystem Services & Biodiversity (ESB) | Food and Agriculture Organization of the United Nations (fao.org)

Ganapathy E, Kabra K.C. (2017) *The Impact of Corporate Governance Attributes on Environmental Disclosure: Evidence from India* INDIAN J CORP GOVERN 10(1): 24–43. https://doi.org/10.1177/0974686217701464

Gjolberg, M. (2013) *Nordic Companies: Global Pioneers in CSR In: Midttun, A. (Ed.), CSR and Beyond: A Nordic Perspective* CAPPELEN DAMM AS.

Hines, R.D. (1988) *Financial Accounting: In Communicating Reality, We Construct Reality* ACCOUNTING, ORGANIZATIONS & SOCIETY 13(3): 251-261.

Islam, T. and Ryan, J. *Hazard Mitigation and Emergency Management,* ENCYCLOPEDIA OF ENERGY, Boston, Elsevier, 2004.

International Monetary Fund (2022), *Externalities: Prices Do Not Capture All Costs.* https://www.imf.org/en/Publications/fandd/issues/Series/Back-to-Basics/Externalities

KPMG, 2022. Survey of Sustainability Reporting 2022. Available at https: https://kpmg.com/no/nb/home/nyheter-og-innsikt/2022/10/survey-of-sustainability-reporting-2022.html

Laine M. (2010) *Towards Sustaining the Status Quo: Business Talk of Sustainability in Finnish Corporate Disclosures 1987–2005* EUROPEAN ACCOUNTING REVIEW (19): 247-274.

Laine M., Tregidga, H. and Unerman J., (2021) *Sustainability Accounting and Accountability.* Routledge.

Li, J., Yi, X., Shi, W., Zhang, D., (2018) *Do CSR Awards Motivate Award Winners' Competitors to Undertake CSR Activities?* ACAD. MANAG. PROC. 2018 (1), 14718. https://doi.org/10.5465/ambpp.2018.180

London School of Economics and Political Science (2022), *What is the Polluter Pays Principle?* https://www.lse.ac.uk/granthaminstitute/explainers/what-is-the-polluter-pays-principle/

Lone E, Ali A, Khan I (2016) *Corporate Governance and Corporate Social Responsibility Disclosure: Evidence from Pakistan* CORP GOVERN 16(5): 785–797. https://doi.org/10.1108/CG-05-2016-0100

Lueg, R., Pesheva, R., 2021. *Corporate Sustainability in the Nordic Countries – the Curvilinear Effects on Shareholder Returns.* J. CLEAN. PROD. 315, 127962. https://doi.org/10.1016/j.jclepro.2021.127962

Majeed S., Aziz T., Saleem S. (2015) *The Effect of Corporate Governance Elements on Corporate Social Responsibility (CSR) Disclosure: An Empirical Evidence from Listed Companies at KSE Pakistan* INT J FINANC STUD 3: 530–556. https://doi.org/10.3390/ijfs3040530

Malik MS, Kanwal L (2016) *Impact of Corporate Social Responsibility Disclosure on Financial Performance: Case Study of Listed Pharmaceutical Firms of Pakistan* J BUS ETHICS:1–10. https://doi.org/10.1007/s10551-016-3134-6

Masud M, Bae S, Kim J (2017) *Analysis of Environmental Accounting and Reporting Practices of Listed Banking*

Companies in Bangladesh SUSTAINABILITY 9(10):1717. https://doi.org/10.3390/su9101717

Millennium Ecosystem Assessment https://www.millenniumassessment.org/en/index.html

Mukherjee-Reed AM (2002) *Corporate Governance Reforms in India* J BUS ETHICS 37(3): 249–268

National Wildlife Federation, *Ecosystem Services* Ecosystem Services | National Wildlife Federation (nwf.org)
Nieuwlaar, E. *Life Cycle Assessment and Energy Systems* ENCYCLOPEDIA OF ENERGY, Boston, Elsevier, 2004

Nishitani, K., Nguyen, T.B.H., Trinh, T.Q., Wu, Q., Kokubu, K. (2021) *Are Corporate Environmental Activities to Meet Sustainable Development Goals (SDGs) Simply Greenwashing? An Empirical Study of Environmental Management Control Systems in Vietnamese Companies from the Stakeholder Management Perspective* J. ENVIRON. MANAG. 296, 113364 https://doi.org/10.1016/j.jenvman.2021.113364

O'Dwyer, B., & Owen, D. (2005). *Assurance Statement Practice in Environmental, Social and Sustainability Reporting: A Critical Evaluation* THE BRITISH ACCOUNTING REVIEW, 37: 205-229.

Schneider, P.H. (2005) *International Trade, Economic Growth and Intellectual Property Rights: A Panel Data Study of Developed and Developing Countries* JOURNAL OF DEVELOPMENT ECONOMICS, (78): 529-547.

Shamil M., Shaikh J., Ho P-L., Krishnan A. (2014) *The Influence of Board Characteristics on Sustainability Reporting: Empirical Evidence from Sri Lankan Firms* ASIAN REV ACCOUNT 22(2): 78–97.

Strand, R., Freeman, R.E., Hockerts, K. (2015) *Corporate Social Responsibility and Sustainability in Scandinavia: An Overview* J. BUS. ETHICS 127 (1), 1–15. https://doi.org/10.1007/s10551-014-2224-6

Sustainability Accounting Standards Board (SASB), *SASB Standards Overview* https://www.sasb.org/standards-overview/

United Nations Global Compact-Accenture CEO Study on Sustainability 2013.