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Environment and Ethics: A Two-way Relationship Towards Sustainable Development

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Abstract: The eminent quest to construct sustainable resolutions for the environmental degradation requires the involvement of many interested pillars; among which is a socially responsible production side. How the social responsibility practiced by institutions working in polluting fields can be a factor in decreasing the total of GHG emissions measured by CO₂ emissions; an argument examined by the current paper for developing economies signed to Kyoto protocol. The research used a data from year 2006 to 2015 for 12 economies in the MENA region. The main finding of the paper suggests that ethical behavior of firms affects environment and can have a good and sustainable impact on environment if well managed. A robust model is estimated to assess the two-way relationship of ethics-environment, based on the results of a Granger causality test for the MENA economies.

Keywords: Environment, Ethics, Sustainable development, Granger causality

1. INTRODUCTION

Ethics differentiates between values and virtues; whereas value is A standard of right to be followed; a virtue is a character trait that enables one to achieve the good or act rightly. Ethical issues connect intimately with economic issues. Take the economic practice of doing a cost-benefit analysis. a person have a choice where he could spend one thousand dollars to buy motorcycle that pollute the environment, or he can donate that one thousand dollars to the awareness campaign on recycling. Which option is better? The ride on the motorcycle increases pleasure. A recycling successful campaign may lead to more environment quality in the long term. In reality as well as economics decisions are made like this, weighing alternative options by measuring their likely costs and likely benefits against each other.

Economists implicitly adopt a value framework when beginning a cost-benefit analysis. Different value commitments can lead to the same item being considered a cost from one perspective and a benefit from another. For example, those whose standard of value is increasing human happiness would count a

new road to a mountain as a benefit, while those who advocate a preserved natural environment would count it as a cost.

This connects economics to a second major issue in ethics: Is goodness or badness determined by real-world practical consequences or by some other means, such as faith in authoritative institutions, appeals to rational consistency, or feeling senses of empathy? The point for economic analysis, most of which is a matter of understanding and analyzing the cost and benefit of alternative actions, is that the relevance of economic analysis to policymaking depends, in part, on what one believes is the final source of value standards.

Although Ethics are limitations a society imposes upon its members; a better expression would mean constraints; yet ethics usually only guide and suggest behavior. Hume (2000) argues that there is no logical way to derive an “ought” from an “is.” This implies, for example, that there is no logical connection between normative ethics and descriptive economics. Sen (1987), in turn, emphasizes that economists should pay greater attention to ethical considerations that shape and affect economic behavior. Recently, there is even something going on named “the revival of economics as a moral science” (Peil & Van Staveren, 2009). This trend suggests that Economic science should no longer perceive as independent of ethics, but economics should be considered like ethics, a normative science (Joost, 2010). That is why when talking about the social and ethical responsibility of the firms, it is not a talk about what it “ought” to be the ethical responsibility of a firm towards the community but what “is” it. Corporate Social Responsibility CSR is the decisions taken to satisfy the society for reasons at least partially beyond the firm’s direct economic or technical interest (Carroll, 1999).

The presumption of the current research, however, is that if most firms abide by ethics towards environment, society will be better off and environment quality is expected to improve (Mohr, Webb & Harris, 2001). Firms do not operate in isolation, but as part of a wider ecosystem that includes both society and environment. The larger a company is the more diverse is the range of stakeholders that are affected by its operations, and the more pressure they practice to satisfy their needs. The market will economically and financially reward organizations that engage in Corporate Social Responsibilities activities (Carroll & Shabana, 2010).

The empirical findings of the current research contribute to the environment quality literature by identifying the causality relationship between better ethical approach and the CO₂ emissions using Granger casualty test for the MENA economies. In particular, the paper proposes that a two-way relationship between the ethical behavior of firms and the environment quality exists. Ethics is a prerequisite for sustainability and a channel for sustainable development.

The next section discusses the link between environmental degradation and ethics in the region. Section 3 provides a literature review, followed by the methodology in Section 4, and the results of the granger casualty test for ethics and CO₂ emissions in Section 5. Finally, the research presents recommendations to make use of ethics in combating climate change.

2. ETHICS AND ENVIRONMENT

Given the responsibility for past emissions, given that poor people are hit earliest and hardest by climate change, and given that all must be strongly involved if emissions cuts on the necessary scale are to be

achieved, one should ask how can examine various ethical positions in ways which could help structure the policy and the framework of international commitment towards environment and the rights of future generations. The challenge is not simply to make interesting observations about ethics, but to involve all parties who actively coordinate based on a cost and benefit analysis of their individual options.

Freeman *et al.* (2004) suggested that CSR activities create more benefits than costs by keeping a good relationship with a firm's related stakeholders such as customer, employee, and community. CSR is a process of managing the costs and benefits of business activity to both internal (for example, workers, shareholders, investors) and external (institutions of public governance, community members, civil society groups, other enterprises) stakeholders. Setting the boundaries for how those costs and benefits are managed is the role of business policy, strategy and public governance.

WBCSD (1999) has defined CSR as "the commitment of business to contribute to sustainable development, working with employees, their families, the local community and society at large to improve their quality of life". CSR has been a tool for investigating the accountability of three dimensions; social, environmental performance, and traditional financial perspective (Adams & Zutshi, 2004).

3. LITERATURE REVIEW

CRS literature discussing the ethics and economics relevant to sustainable development varies in foci and implications. Whereas studies in sustainable development have focused on the right of future generations to enjoy environment quality; published literature in economics examines the estimates for future costs of climate change over next decades. An emerging trend of studies addresses a wider range of resolutions based on the economics of social and ethical behavior of firms and its relevance to sustainable development.

Stern (2006) discussed ethics and environment, and investigated the equity and distribution perspective of ethics towards environment. He referred to the right of future generations to enjoy environment quality. This matches the socio-economic and cultural norms that directly govern sustainable development declared by the WCED; where Sustainable development is defined as "*meeting the needs of the present generations without compromising the ability of future generations to meet their own needs*" (WCED, 1987). Thus, firms are obligated to act socially responsible and ethically towards the environment while producing their products.

In a similar way, Mohr and Webb (2005) also commented that socially responsible firm should behave ethically, supporting the work of non-profit organizations, treating employees fairly and minimizing damage to the environment. While these are the responsibilities of the businesses, the consumers do have some 'should be' responsibilities as they have the power to also affect the firms decision to whether adopt CSR philosophy or not. This is done by directing their expenditure in a way will affect the social responsibility of firms. In this manner, the spending of consumers are perceived the "economic votes", which can reward a firm, or punish a firm (Kreng & May-Yao, 2011).

Smith and Williams (2011) argue that if the consumers largely punish those firms that are irresponsible, then it would be easy that those irresponsible firms can be wiped out in a short period of time. In such a way, consumers shall spend their money wisely as to also help save the environment and improve the society. To identify and quantify the impact of ethical behavior of firms on the environment, the next section will examine empirically the two way relationship between the ethical behavior of firms and carbon dioxide emissions in the MENA region.

4. THE ECONOMETRIC METHODOLOGY

Environment quality is expected to increase, when there are ethics equity towards dealing with environment (Stern, 2013). Projecting the other way around, however, remains to be untested and is only vaguely understood. Using panel data for granger causality test can assist in increasing the degrees of freedom to adjust the sensitivity of the test to the size of the sample. It can further help in reconciling cross-country heterogeneity with temporal homogeneity slope.

4.1. Granger Causality Test Specifications

The methodology of Granger causality depends on testing a two way relationship between two variables in two separate regressions. The first test examines how much of the current values of Y are explained by previous values of Y and whether taking lagged values of X into account would improve the explanation or not. X is said to Granger-cause Y, if the forecast for Y is improved and when lagged values of X are included in the estimation, i.e. the coefficients of lagged values of X are statistically significant. However, Granger causality measures only the effect of X in predicting or forecasting Y, and it is not necessary to be the only cause of Y (Granger, 1969). Accordingly, the equations estimated take the following forms:

$$\Delta Y_{i,t} = (\text{lagged}(\Delta Y_{i,t-1}, \Delta X_{i,t-1})) + \epsilon_{1i,t} \quad (1)$$

$$\Delta X_{i,t} = (\text{lagged}(\Delta X_{i,t-1}, \Delta Y_{i,t-1})) + \epsilon_{2i,t} \quad (2)$$

4.1.1. Research Hypotheses

- There exists a two-way relationship between CO₂ emissions and ethics.

4.1.2. Data Construction and Sources

As suggested by the literature, carbon dioxide is the most accurate measure that can reflect the environment degradation (Sileem, 2015). Carbon Dioxide Emissions per Capita: measures the environmental degradation in ton per capita. Data was obtained from the World Bank Open Data Base, for years 2006 to 2015.

Ethics: measures Ethical behavior of firms. The data on Ethics ranges from the value of 1 to 7. The value of “1” is assigned to least ethical performance while the value “7” is assigned to the best ethical performance. The data was obtained from the World Economic Forum, the World Competitiveness Index historical dataset, for years 2006 to 2015.

4.1.3. Granger Causality Test Specifications

The Granger causality test related to CO₂ emissions and Ethics relationship for MENA economies includes the estimation of the following two equations.

$$\Delta \text{Ethics}_{i,t} = (\text{lagged}(\Delta \text{Ethics}_{i,t-1}, \Delta \text{CO}_2_{i,t-1})) + \epsilon_{1i,t} \quad (3)$$

$$\Delta \text{CO}_2_{i,t} = (\text{lagged}(\Delta \text{CO}_2_{i,t-1}, \Delta \text{Ethics}_{i,t-1})) + \epsilon_{2i,t} \quad (4)$$

where Ethics is the log of Ethical behavior of firms in MENA economies, CO₂ is carbon dioxide emissions per capita to reflect environment degradation in MENA economies in the log form, and ϵ_{it} is the error term for this OLS estimation at time t for country i. The first regression tests whether CO₂ emissions

Granger-cause Ethics. The second regression tests whether Ethics Granger-causes CO₂ emissions for the MENA economies. This result supports the proposition that effective climate change policy starts with more responsible attitude towards environment quality.

4.2. Econometric Framework of estimating CO₂ Emissions and Ethics model

To run a robust regression for the environment ethics relationship, the study estimated both the Fixed effects and Random effects specification, however, a Hausman test is used to examine the inconsistency of the Random effects estimate by comparing the Fixed effects and Random effects slope parameters. A significant difference indicates that the Random effects model is estimated inconsistently, due to correlation between the explanatory variables and the error components. In this case, the Fixed effects model can be estimated consistently.

The CO₂ emissions per capita in economy *i* at time *t* is given by the Fixed effects specification equation:

$$CO_{2it} = \gamma Ethics_{it} + \mu_i + \nu_{it} \tag{5}$$

i = 1.....12 and *t* = 1.....10 Where

Ethics is an explanatory variable that stands for Ethical behavior of firms in country *i* at time *t*.

μ_i is the unobservable country specific effects where $\mu_i = z'_i \mu$; the term $z_i \mu$ allow having heterogeneity or individual effects in the estimation; ν_{it} is the error term.

γ is expected to be > 0. This indicates a positive relationship between Ethics and CO₂ emissions.

5. THE FINDINGS

5.1. The Empirical Results of CO₂ Emissions and Ethics granger test

The main estimation results of Granger causality test to identify the relationship between CO₂ emissions and ethics reported in Table (1).

**Table 1
Granger Causality Test Results for MENA Countries***

| <i>Null Hypothesis</i> | <i>F-Statistic</i> | <i>Probability</i> | <i>Decision</i> |
|--|--------------------|--------------------|-----------------|
| CO ₂ does not Granger-cause Ethics | 2.50521 | 0.0873 | Reject Null |
| Ethics does not Granger- cause CO ₂ | 5.72481 | 0.0046 | Reject Null |

* The results are for all coefficients jointly to test for Granger Causality in the case of a two period lags.

At 10% level of significance, the null hypothesis of the first estimation which is CO₂ does not Granger-cause Ethics is rejected; this suggests that CO₂ Granger-cause ethics in the MENA region. The null hypothesis of the second estimation, which is Ethics does not Granger-cause CO₂ is rejected at 1% level of significance. Thus, this indicates that ethics Granger-cause CO₂ emissions in MENA region. These results reflect a two-way relationship between ethics and CO₂ emissions in MENA region. The results provide evidence on ethics impact on the environment degradation, which is critical to sustaining an effective climate policy.

5.2. The Empirical Results of CO₂ Emissions and Ethics estimation

To test for a two way relationship between CO₂ Emissions and Ethics, a separate estimation for each direction was conducted.

5.2.1. Findings of estimating CO₂ Emissions as the dependent variable

First, the study runs a Hausman test, to examine the consistency of estimating the Random effects model, for the CO₂ equation, the value of chi-square statistic for testing the differences between all coefficients is higher than the critical value. Its corresponding p-value of 0.000 suggests that the null hypothesis of no correlation between the explanatory variables and the random effects should be rejected. This means estimation of Random effects specification is inconsistent. Alternatively, Fixed effects estimation is consistent as suggested by the literature (Stern, 2004).

Thus, the study employs onward Fixed effects coefficients. The fixed coefficient model was estimated after correcting for panel-level autocorrelation. The estimated results in Table (2) are reported after correcting for autocorrelation using the white period SUR weights.

Table 2
Empirical Results For MENA Economies After Correcting For autocorrelation (Period SUR (PCSE))

| <i>Variables</i> | <i>Fixed Panel Specification Subset</i> |
|--------------------|---|
| Constant | -0.757300 ^a (-5.180259) |
| Ethics | 2.567897 ^a (12.85023) |
| Adjusted R-squared | 0.647328 |
| No of observations | 120 |

^a significant at 0.01 level.

The figures in parentheses are t-statistics.

5.2.2. Findings of estimating ethics as the dependent variable

To test for the two way relationship, estimation was examined. The results are reported in the following table.

Table 3
Empirical Results for MENA Economies after Correcting For autocorrelation (Period SUR (PCSE))

| <i>Variables</i> | <i>Fixed Panel Specification Subset</i> |
|--------------------|---|
| Constant | 0.568369 ^a (229.2904) |
| Co ₂ | 0.091067 ^a (38.98653) |
| Adjusted R-squared | 0.930250 |
| No of observations | 120 |

^a significant at 0.01 level. The figures in parentheses are t-statistics.

The previous tables provide additional evidence on the two way relationship that exists between ethical behavior of the firms and the reduction of carbon dioxide emissions. The more there is ethical behavior then the more there is attitude towards lowering the emissions by adopting more clean techniques.

6. CONCLUSION AND REMARKS

Keeping a sustainable flow of capital, so future generations can enjoy the same clean environment of that enjoyed by current generations is an ethical and economical issue. The current research proposes that to decrease the carbon emissions, firms should act ethically towards the environment. Firms should bear the major responsibility for providing their resources for adjusting with the needs of their stakeholders, as this “is” not “ought to be” their CSR not accumulating profits. Though profits are necessary for firms in order to survive, the making of profit is not an end in itself. The first objective of an entrepreneur is rather to make his enterprise grand and successful. The social and ethical aspects play role in this case

This implies that the stakeholders and the firm have the same interest. Thus the reasons for strong ethical action towards the environment quality by the large corporations are similar to those for charity parties or social aid: (i) the moral consequences which flow from a recognition of a common humanity of deep poverty; (ii) the desire to build a more collaborative and better world; (iii) common interest in the climate and in avoiding dislocation; (iv) corporate social responsibility where the firms satisfy the needs of its current and future stakeholders (community and society) towards sustainable development;(v) the eminent respond of firms to the interest of their consumers who can reward or punish the firm in case of not complying or satisfying their needs. For sustainable development, not only firms but consumers also need to be responsible.

APPENDIX

The MENA list includes 12 economies: Algeria, Bahrain, Egypt, Kuwait, Morocco, Oman, Qatar, Tunisia, United Arab of Emirates, and Saudi Arab kingdom, Libya, Malta.

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