

CARBON CREDITS ACCOUNTING REFLEXION IN THE BALANCE SHEET – AN ACCOUNTANT’S PERSPECTIVE

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ABSTRACT

As part of the Kyoto Protocol, a global policy was drafted at limiting green house gas emissions and steady steps are being taken to implement limits on carbon emission on the macroeconomic scale. Markets are being formulated so that companies can barter carbon allowances. Turning the environment, into a public product and into private property presents multiple economic challenges. This paper explores the allusions of the policy direction established in the Kyoto accord. Several alterations to corporate accounting policy are asserted. The perceived benefit is that socially responsible professionals will tabulate their corporation's cost and financial accounting procedures to encourage success as carbon emissions develops and more regulated.

KEYWORDS

Kyoto protocol, environmental science, social cause, balance sheet preparation.

1. INTRODUCTION

Financial reporting is a social form. The present form of accounting reports and the standards applied to prepare them represent our business values. Over time accounting reports along with their content have changed and will continue to be dynamic as we move into the future. Regard for the environment has attained the point of real proposals for implementation in the political arena. Environmental awareness amongst the management community is represented in frequent coverage of sustainability and environmental accountability in management oriented journals and annals. These social developments produce a need for financial information. If the trend towards hiked corporate responsibility for environmental impacts persists then accounting practice need to ultimately reflect this.

The purpose of this research work is to explore the impact of global warming on accounting procedure. As a first step in this exploration it becomes mandatory to understand the environment from an economic perspective. It is difficult to turn a public reserve into a private product. Market driven solutions regarded through the lens of economic theory are cumbersome to be adopted. The pace of politically motivated normalization regarding the environment is amplifying. It is also very elementary in light of what the scientific literature shares as a necessary. As environmental impacts are privatized a whole new class of assets and liabilities will emerge. The specific purpose of this paper is to examine how these items fit into the current financial reporting framework. Accounting policy that does this will ensure the relevance of accounting when it comes to evaluating corporate performance.

Change always constructs an opportunity for success. Corporations that strategize for the new world order of intense regulation of environmental impacts could become relatively extra competitive. Adopting a green strategy too early is fool-hardy from a stockholder's paradigm. It is equally hazardous to do nothing and ideate to invest in a green strategy after regulation is enacted and expertise is priced in a skimming pattern. Robust leadership teams could make prudent efforts to power the nature of future regulation for a normative advantage and make investments to ensure readiness for the business options such regulation could create. Until quarterly financial Management Information Systems (MIS) contain environmental assets and liabilities as a segment of the investment, the common man would continue to treat the environment as a public relations issue. This research proposes methods that accountants and accounting systems could be amended to contribute to corporate preparedness.

2. ECONOMIC FORMULATIONS FOR THE ENVIRONMENT

The air and water elements that the world relies upon have special economic characteristics. It becomes pertinent to review those economic variables for insight into why mankind collectively tolerates environmental degradation. There exists a rational explanation for the declining situation. Humans have taken their physical environment for granted because it has been an abundant public commodity. Public goods and services serve all sections of the society. Since no individual owns the resource a private cost cannot be established. Decisions about public commodities are therefore political since there is no existence of a private market structure to regulate them. From another perspective, there is no obvious method to block individuals from benefiting from these commodities. Another common example of a public commodity is national defense. All of these attributes mean that humans cannot easily create a private market for a public commodity. Political processes are the means via which members negotiate the quantum and quality of a public good that would be available and how it could be paid for.

Individuals who propose market solutions as the best method to respond to environmental degradation need to keep in mind that our physical environment is a public commodity. Those that have a deep faith in private markets need to be especially careful. The current environmental situation renders a rationale for ongoing economic education. The environment is a political challenge because the quantum of carbon emissions is not a private commodity. Controversy and conflict over how to proceed are an integral component of the political process. Those ideating a market solution to environmental degradation at its peak may be revealing a deficiency of economic understanding.

In 1968, Garrett Hardin (1968) published a research manuscript that assisted an entire genre of economic students contemplate the challenge of public commodities entitled "The Tragedy of the Commons." Garrett argued that citizens are imagined as a common pasture shared by many shepherds. Each has a private incentive to improve the quantum of their flock whenever they can. Whenever a shepherd achieves this, they get the full benefit of the extra animal. All the shepherds expend is a small price arising from the stress the additional animal adds to the pasture. Obviously this process could proceed until the pasture befalls in its ability to support the herds. An immediate individual enticement leads to a tragedy that could only be avoided if there was a collective method to communicate to each shepherd the complete cost of the decision to add an animal to their herd.

Economists relate this cost from the strain on the pasture born by others, but triggered by an individual increase in use of the pasture, as an "externality." The sole shepherd may not be discerned of, or even equipped to compute, the costs of his verdict to the whole community. It is tough and expensive to get this pattern of information. The environment could be thought of as a global commons. Human activity induces a stress on the environment and arguably has no efficient way of understanding the total price of an additional jaunt to the store or the pursuit of an unnaturally opulent manicured garden. In reality, the personal price remains near zero until the environment begins to crumble.

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Mankind is aware of the growing number of nations and individuals becoming sensitive to the high price associated with global warming. This would be the parallel of some shepherds identifying that the quality of the pasture is waning. Some may seek to recompense the situation before the commons disintegrate and there is much less for participants. That will only instigate frustration as individual incentives do not scaffold their diligence. In this context carbon credits are a cogent way to convert a public commodity into a private property. Everyone does not need to understand global warming for the apparatus to work. The external prices of individual actions are incorporated into personalized decisions regardless of political membership or private beliefs. Unless there is some other unpredicted development that diminishes the need to generate more carbon than the planet can engage. The carbon market has a high probability of cultivating into an important economic reality.

There is an international dimension to this challenge since air and water move liberally around the planet. Purely domestic actions can be futile because some sectors could face overriding international mechanisms. Consider the case of the International Civil Aviation Organization (ICAO). At their recent Montreal conference, the ICAO deliberated environmental actions (Wall, 2007). The ICAO has significant power with respect to regulating international flights. In conjunction with this, the European Parliament will compel an emissions trading scheme on all carriers in the near future. In addition, they will apply pan-national directives on aircraft entering the US or Europe that require set emission quantum per passenger to be reached and unbearably heavy taxes to drive out unacceptable equipment. These regulations could cause airlines to dump functional but polluting aircraft into unfettered domestic markets akin to the Indian Scenario.

Understanding the economic dynamics could assist business professionals advocate for better public policy responses. Accountants have the advantage of economic education as well as practical exposure concerning the operation of market and other regulatory paradigms. Accounting professionals may find discussions about public goods cumbersome. They believe in private markets. Most economic pursuits fit into this category; however the environment, national defense, and public infrastructure do not. There is no way, except through legislation and taxation, to ensure this commodity is provided to a level that maximizes societies benefit. A different discussion is needed for public commodities.

Many business chiefs angst over the political considerations devoted to environmental regulation. Arguably the government is the apt body for this discourse. Accounting professionals could reduce the aforesaid business angst by making statements about the environment within the context of public commodities. The societal risk is way too steep to simply wait for the environmental corresponding of a stock market crash to address the demand for regulation. Forward thinking professionals need not allow free riding citizens, companies, or nations to drag the world into a crisis. The "drop-in-the-bucket" stigma needs to be replaced with a more enlightened position. Public action could cause the environmental price of carbon emissions to be internalized by everyone. The free rider benefit has to be taken away. Accountants can assist business leaders make a contribution to policy development by converting their energy into creating effective markets and practical revelation emanations.

3. MARKET SOLUTIONS

A deeper understanding of economics improves the possibility of a less dogmatic discussion of market mechanisms. Too many business chiefs make dangerously simplistic assertions that market mechanisms could address environmental concerns. Comments about the kind of market forces which could be effective would provide meaningful leadership. There are four distinctly separate market models under deliberation. All four could create an improved environment. Almost none of us function in a perfectly competitive market and so it is foolish to profess that they do when commenting on market structures. Accountants can add to this argument by ensuring that the business fraternity is informed about how a specific model could reflect in business systems and financial reports. Until these considerations are deliberated, businesses would not be able to estimate where their opportunities lie. Each alternative utilizes a separate economic methodology.

Each of the market mechanisms affect the route a country or corporation takes to an environmentally responsible equilibrium. The first model incorporates of a flat fee on polluting inputs. Corporations do this now with fees on low efficiency Sports Utility Vehicles and taxes added to the cost of automotive gasoline. By making the input pricier the society can shift demand to the available alternatives. In addition, the input costs are then applied to subsidize alternative, underdeveloped technologies to further ameliorate the effect. The Robin-hood effect can be witnessed in choices around automobiles; there has been increased attention to bio-fuels and longer term investments in power cells have increased. In this model, carbon generating activities continue for by corporations most willing to shell-out the price or where no alternatives are readily available.

The second model involves a system of quotas. Countries could use this approach in multiple industries to provide limited protection for competition. In the energy dominion corporations already have a structure of quota in place in lieu of the near ban on new refinery capacity. This induces prices to mount and customers to seek substitutes as prices climb. Quotas could form the basis of a carbon credit market. Based on current uses, consumers and corporations are awarded a quota. Those that want more capacity would then have to bid credits against from others. Those with the easiest opportunities for carbon emission reduction would benefit in this case. They can sell their savings to corporations with less opportunity. Corporations with the easiest opportunities to reduce carbon emissions would profit by responding to the opportunity to sell the carbon savings they create.

A third market model delves at output efficiencies rather than monitoring inputs. This model establishes a baseline of carbon use per unit of production. Permits for a quantity of CO₂ emissions are granted for a period of time that reflects a specific carbon allowance in relation to actual output. These permits are typically granted for periods of 4-6 years. Once the permit period has elapsed, fresh standards would be imposed for the new permit. This model could facilitate growth and permits an enlightened regulator to motivate improvements in the context of new technology or market conditions. This system would be similar to an extension of our business licensing system which, for example, regulates the number of taxis on the road. Progressive reduction of the carbon allowance for electric production would accelerate the demise of high polluting plants and therefore create incentives for new factory construction.

A fourth model, that is very reputed with celebrities, is the market for carbon offsets. It is socially popular to record that you made a trip "carbon neutral" by planting the quantum of trees needed to absorb that carbon generated by a trip. At an industry level a corporation would be required to invest in activities that reduce their carbon "footprint." This model will require carefully drafted policy to ensure legitimate and verifiable measurement of carbon applications and carbon offsets. As an example some agricultural projects can reduce the amount of carbon in the atmosphere. Investment in those projects could renew or form new carbon credits for firms. Obviously a market structure to trade the created carbon offset allowance would be an incentive to launch such projects. There is a real risk that such an allowance will eliminate the need for real change as market players find ways to bring existing (as opposed to new) activities into the market as offsets.

An additional paradigm is carbon shifting. If India raises its costs by reducing carbon emissions the nation could hurt the economy by shifting jobs to countries that do not. So discussion about the carbon market has emanated an international macro-economic discussion about green accounting. Green accounting concerns governmental economic accounts and not the financial books of companies and government entities. Green accounting refers to national accounts which would include environmental price to public accounts. In this system, countries like India would suddenly show huge trade deficits associated with their high carbon outputs. Ferreira and Vincent (2005) have summarized latest developments in green accounting. Governments have been actively engaging on green accounting in the Doha round of trade talks. It is foreseeable that the United Nations would create an international carbon market that would see India paying huge sums to other nations in order to sustain its disproportionate use of global emissions capacity. As policy developments continue in that direction, several economic sectors need to be prepared for India to increase protectionism and become isolated from portions of global trade. There will be domestic winners and losers as this circumstance develops.

In conclusion it is important to mention what market mechanism is under consideration. It is best for everyone if dramatic change can be averted. The collapse of the bill to establish new nuclear powered power plants provides a recent example of the cost associated with deferred action. Slow incremental adjustments to power generation quotas would have been less costly in retrospect. The easiest and therefore most predictable method to creating a market mechanism to limit carbon emissions is to look at what is already in place. Staying abreast of the regional approaches to carbon trading is hence a way to gain insight as to what is likely to occur as the situation becomes more profound.

4. WHAT IS INDIA PREPARING FOR?

Political agenda of countries around the world represent the broad base of concern regarding global environmental degradation. The Kyoto Protocol of 1996 is a huge step towards worldwide regulation of the environment. Many countries have ratified the protocol and have undertaken limited steps to achieve their share of commitments. India did not ratify the agreement because the current administration determined it could not achieve the targets. That was either a self fulfilling prophecy or realistic. The resulting patchwork of political, industrial, and individual hard-work to become more environmentally neutral is moreover very significant. This leaves strategic managers in an awkward position. Corporations know that environmental degradation is not going to end on its own. It is cumbersome for managers to understand what strategies can be effective when the public policy responses are unknown. Without clear direction the incentives will appear to favor those teams that do not adopt green strategies that are priced high.

The headline change in response to environmental degradation is emissions reduction. The leading ideology with regard to reducing emissions is to place a limit on carbon gas production. By making CO₂ inputs more expensive, creativity will be encouraged and the market will shift to other alternatives. This concept was imbedded within the Kyoto protocol. The development of a serious carbon trading business in the USA and Europe can give Indian businesses insight into how they should prepare. Ramachandra and Norton (2006) reported on the intense investment activity of investment banks in the European Carbon Market. For example, JP Morgan (JPMC) invested US \$ 4.29 billion dollars to quietly beef up its market position. While attention is lost in the press in lieu of the sub-prime mortgage crisis the initiative has not stopped. The JPMC indicates that there are market makers who can help corporations prepare to either buy or create sellable carbon credits now.

Regulatory proposals to manage CO₂ emissions are more than social or political indulgences. There is a section of the educated society who under-estimate the issue by adopting that mindset. When there are substantial segments of the population prepared to work for a neutral carbon foot print, the day next is almost here. Folks are prepared to expend considerable sums on products, offered at web-pages like climatefriendly.com, myclimate.org and terrapass.com. The Indian government is already imposing high energy costs on businesses by declining almost any expansion of refinery capacity. As a result, businesses that have embraced energy efficient practices already understand the competitive opportunity environmental regulation brought-forth. Our government will adopt more legal, environmental requirements and corporations that are ready can excel rather than make a vain effort to cope.

A whole world of positive opportunity could be identified if India accepts that capping CO₂ emissions by governments is necessary and inevitable. This position leads to effective drafting rather than rootless denial. Understanding the primary intent and workings of the Kyoto Protocol is essential. This is the context framework which nations are designing cap-and-trade markets. There is also much to be assimilated by studying the experiences of industries in countries that are further along the path to Kyoto compliance. This is a time for lateral thinking. Accountants work with managerial decision-making processes which impact investments everyday so they can offer ideas about how to comprehensively get firms and industries to internalize the costs of carbon emissions. As an offshoot accountants that become informed are in a unique position to comment on the implementation issues synergized with each of the models under consideration.

The Chicago Climate Exchange (CCX, 2007) has facilitated limited green house gases emissions trading since late 2003. Costs are quoted per CO₂ eq. unit with a contract consisting of 100 CO₂ eq. Participating corporations voluntarily join one of three segments. Members enter a legal commitment to limit emissions according to a set schedule. Exchange allowances are permitted to members as per this schedule. They may obtain additional units via electrical power conservation or carbon sequestration activities. Exchange offsets are rendered by participating members to those that over their quotas (Office of Air, 2009). These units are created via qualifying mitigation activities such as the purchase of electrical power from renewable energy sources, annihilation of methane from landfills or livestock operations, or adoption of environmentally friendly agricultural practices.

5. CORPORATE ACCOUNTING AND THE ENVIRONMENT

Accounting plays a primary role in determining what matters. Until it is measured and reported on in financial statements an economic enhancements will rarely receive much attention. Consider how different Mumbai would be today if the full cost of health commitments made in the 1960s for retired workers had been fully booked as health insurance premiums rose over the last 20 years. Consider how different Delhi would look if the documented need for civic engineering maintenance had been recorded 15 years ago. Whether public or private, the common Indian citizen can document numerous cases where there were known liabilities but there is no accounting regulation to reflect them on the balance sheet. It takes a disaster for the rules to amend. In multiple cases, the large cost of responding up front was limited, when compared to the price of the resulting disaster.

Accountants take a great deal of pride in the principles that are the building blocks of a profession that is at best understood as a social science. The profession has a well developed sense of social responsibility. A responsible profession does not need a debacle to generate change. Why then, is the accounting process complicit in the opinion to not record important environmental costs? The answer is rooted in basic accounting principles and points to an opportunity for a fresh interpretation of them. Accounting appraises processes by a hierarchy of principles that set out highly valued, qualitative attributes of accounting information. These characteristics require fresh attention in light of the environmental challenges society is facing. It is useful to widen the definition of important information so that the accounting process internalizes more environmental price details.

Reliability is one of the primary attributes of useful information. Accountants view reliability in terms of specific components. One such component is that data must be verifiable. This places a great strain on the market mechanism especially for carbon credits. If the Indian government proceeds with the output-licensing model, there will be a large quantum of difficulties with verification of carbon credit reductions. The implementation of the proposed market especially in view of this component merits deep consideration.

This research argues that there are two necessary steps for carbon emissions and reductions to be certified. Certification is needed so that the yielding credits are recognized and may be legitimately traded. India has to know what a legitimate credit is and there has to be a method for accreditation by an independent body or council. Certification is mandatory since a carbon credit is not a deliverable good. The value of this intangible asset is pertinent because of trust that buyers place in the market system. The success and survival of the system is thus predicated on the credit-worthiness of carbon reductions. At the current time, the profession has gone a lengthy way towards denying the existence of intangible assets and would have a great deal of hassle recognizing corporations that are creating them.

Objectivity is another component that is applied to assimilate the reliability of information. The most evident outcome of this concept is the historic cost principle. One application of this principle has been the separation of asset write-ups. Under no circumstances can professional judgment be exercised and an unrealized advantage on long term assets be realized. Unrealized gains on long term payables do not get recorded until they are realized. Managerial yield that creates carbon savings or reduces future environmental costs are not registered until they are realized. Corporations that are proactive about generating carbon assets would find that their associated assets and liabilities, as shown in their financial records, would understate their real situation. The effect is to dull our attention to environmental action and perhaps reward inaction in the short term. Items that are in the management formats have less impact when they do not specifically tie into specific entries on the income statement.

The second primary quality of important information is the attribute "relevance". Relevance is interpreted in terms of specific information segments. Information is relevant when it has predictive value, is timely, and provides feedback to the stakeholders. Unfortunately relevance is interpreted in the narrow sense of management leadership of the funds entrusted to it by stakeholders and creditors. In that context, the societal concern for the Indian environmental commons is just that, context. Relevance is hence the poor cousin to reliability when it comes to determining what useful information is. If the accounting profession is to be supportive of public concern about the environment, this interpretation needs to be amended. If accountants could see the stakeholder as an investor and as a member of the society facing a mounting environmental cost, then this situation can be amended. Regulation is most likely to inculcate future environmental costs relevant but the profession can initiate this new paradigm on its own.

6. PROFIT FROM ACCOUNTING POLICY INITIATIVES

This research has deliberated on how unreasonable and irresponsible it is for business chiefs to accept a simple statement advocating a market elucidation to address environmental degradation. Society needs responsible discourse that takes into account robust economic solutions. Accountants who have a deeper

understanding of the economic and political scenario can contribute to their employers and society more efficiently. India stands to gain if the environmental agenda includes the concerned voice of accountants. As a profession, there is a great deal to be considered and studied that is missed with simplistic records that market solutions are best. The language of business can inculcate the societies need to elevate environmental issues, now that India has reached the practical capacity of this public good. It is time for this to be treated as a profound professional accountability.

The Kyoto accord left the allied countries a great deal of flexibility with respect to the mechanisms they would apply to comply with treaty obligations. Even though there is liveness, the discussion has focused on trading carbon credits grounded on quota's and productivity scales (Jepma & Van der Gasst, 1998). These public policy responses could be very difficult to incorporate into accounting legislation. The accounting profession needs to react with more than a recommendation to added base sustainability as a key measure in the balanced scorecard. India can hence advocate for three additional categories of responses by professional accountants: inclusion of carbon gas emission markets in the capital budgeting activity, reporting environmental impacts on financial reports, and advocating for effective regulatory approach for each sector of the economy. Accountants who respond in these routes could contribute to the competitive advantage of their corporations and society. The first step could be to consider future costs in capital budgeting models. A carbon credit market established on output allowances is pricey to implement. Many businesses can estimate that the cost of this will be higher than an input tax such as the one India has on Petrol as of now. Since India cannot assure a change in policy direction, it is prudent to make investments with the output structure in mind. Retrofitting existing systems and processes to record emissions is costly and non-productive at best. Revered accountants will need to look for and emphasize these preparatory investments when they are evaluating capital budget proposals and in the participation in setting budgetary priorities.

The second opportunity is to report environmental assets and liabilities on the balance sheet right-away. There is a long learning curve requirement to incorporate carbon credits into the reporting procedure. Firms can develop experience with carbon assets by the preparation of policies for determining market values and disclosing unrealized profits or losses on a pro-forma basis. They can also implement procedures to collect and disclose carbon emissions much like those India has for disclosing future lease and debt payments. This disclosure could increase awareness of future prices and create stockholder confidence in corporations that can give a clear accounting. Reporting on carbon offset activities, as India now reports on research and development pipelines, form a third opportunity.

7. CONCLUSION

This research has examined how the perception referencing carbon credits can be misleading. Deeper understanding of the issue and the deep-rooted problems associated with societal decision-making regarding public commodities are needed. Accountants can heighten corporate discussions through broadening their corporation's capital budgeting variables, developing relevant, future oriented looking financial systems, and advocating for economically effective regulation. There is no need for accountants to passively respond to the growing problem of environmental degradation. This research has researched the method accountants can add value to their firms by fulfilling their professional role within the Indian Diaspora.

There is a moral hazard for accounting professionals. An accountant can identify their effort as little and inconsequential when paralleled to the political and scientific influences within the environmental paradigm. That thought could be used as the prime criteria for not taking action. Taking comfort in that rationale does not comprehensively reflect the pervasive impact of accounting policy has as does the language of corporate profit making. Accountants do play a vital role in shaping responsible public procedures as members of the business community. Their employers and clients would benefit from being able to mitigate a crisis caused by lack of preparation if the accounting fraternity takes action. India has to examine the passive role of the accounting fraternity in setting conditions that permitted the sub-prime crisis to occur. The financial impacts of environmental degradation are far more substantial. Attention to accounting procedures regarding carbon credits can be the accountant's positive contribution to the societal discourse about environmental dilapidation.

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