Sixth Seminar Series Retreat

January 17th – 18th, 2018

Venue: Conference Hall, CUTN

MADRAS SCHOOL OF ECONOMICS

The Sixth Seminar Series Madras School of Economics 17th and 18th January, 2018

Day One – 17th January, 2018

At 10.00 a.m ***Director Madras School of Economics. K. R. Shanmugam will welcome the faculty to the Sixth Seminar Series***

	Time	Name of Paper Presenter	Title	Theme
1	10.00 am	K. R. Shanmugam *Renjith. P.S*	EMPIRICAL ANALYSIS ON SUSTAINABILITY OF PUBLIC DEBT IN INDIAN STATES	Public Economics
2				
	11.30 am	**Tea Break**		
3				
4				
	1.15 pm	**Lunch**		
5	2.00 pm			
6	2.45pm			
	3.30pm	**Tea/Coffee break**		
7	3.45pm			Fiance
8	4.30 pm			
	5.15pm	**Tea Break**		
9	5.30pm			
	6.15 pm	**Tea**	**Wrap up for Day One**	

Day Two – 18th January, 2018

14	2.00pm	
15	2.45pm	
	3.30pm	**Tea break**
16	3.45 pm	
17	4.30pm	
	5.15pm	**Tea and Snacks**

Wrap up of the Sixth Seminar Series of Madras School of Economics 2018

1.		
2.		
3.		
4.		
5.		
6.		
7.		

EMPIRICAL ANALYSIS ON SUSTAINABILITY OF PUBLIC DEBT IN INDIAN STATES

K. R. Shanmugam[*] *and Renjith. P.S.*[†]

Abstract

This article innovatively combines the Bohn framework for panel data and p-spline technique to evaluate debt sustainability of major Indian states during 2003-04 to 2014-15. Results of the study shows that in eight states, the debt is sustainable. In eight other states, debt is unsustainable but welfare enhancing. In the remaining four states, debt is neither sustainable nor welfare enhancing. As Indian states have been increasingly borrowing from many international agencies, we hope that the findings of this study may be useful to policymakers, international agencies and other researchers to take appropriate strategies to improve the debt conditions of Indian states.

Keywords: *Sustainable Debt, Indian States, Bohn Model, Penalized Spline.*

JEL Codes: *E62, H63, H72, H74*

---

[*] Corresponding Author, Professor and Director, Madras School of Economics

† ICSSR Research Fellow, Madras School of Economics

IS IT LEGAL AND ETHICAL TO OFFER FREEBIES TO THE ELECTORATES?

(A study on freebies given to the electorates of Tamil Nadu during 2011-12 to 2015-16)

Dr.Srinivasa Rao Gangadharan and Ms.Lakshmi Padmakumari†*

Abstract

This study is an empirical investigation into the ethicality and legality aspect of distributing freebies to the electorates with particular reference to the state of Tamil Nadu. Using data from the budget speeches of the Finance Minister tabled in the Legislative Assembly of Tamil Nadu for the period 2011-2016, we analyze the expenditure incurred for 15 Freebies schemes. We find that distribution of freebies has led to the improvement in the welfare of people. Despite the expenditure, the state maintains its fiscal prudence & ranks higher than major states in most of the basic socio-economic performance indicators. As the intent of freebies is social welfare & per se not to influence the voters, its ethicality cannot be doubted. From the legal point of view, the distribution of freebies cannot be questioned as it falls within the scope of Directive Principles of State Policy. Distribution of freebies in any form is not prohibited by any law in force in India. However, the government can adopt measures to reduce the non-wage operating costs and improve the quality of freebies distributed so as to ensure maximum welfare to the people.

Keywords: *Freebies, Electorates, Deficit Budget, Government policy, Welfare, Election*

JEL Codes: *I38*

* Faculty, Institute for Financial Management and Research (IFMR), No 24, Kothari Road, Chennai, Tamilnadu, India. Mail id: ganga@ifmr.ac.in . Phone number: 9840686927

† Ph.D Scholar, Institute for Financial Management and Research (IFMR), No 24, Kothari Road, Chennai, Tamilnadu, India. Mail id: lakshmi.padmakumari@ifmr.ac.in

DYNAMICS OF PUBLIC DEBT SUSTAINABILITY IN MAJOR INDIAN STATES

Renjith P. S[*]*. and K.R. Shanmugam*[†]

Abstract

This study aims to examine the public debt situation of 22 major Indian states using the Bohn's model based framework for panel data during 2006-07 to 2015-16. It employs six alternative procedures to analyze the debt sustainability at aggregate and disaggregate level: (i) Bohn's panel framework for testing sustainability of Indian states as a whole; (ii) panel framework (with state wise dummy interaction term) for testing sustainability of individual state; (iii) penalized spline approach for testing non-linearity; (iv) panel framework with state-specific undermining factors of sustainability (v) usage of primary balance adjusted as the dependent variable to check whether debt is subsidized or not; and (vi) usage of state's own revenue as the dependent variable to test whether the state governments are solvent enough to avoid the no-Ponzi condition.

The results at the aggregate level strongly support the conditions of debt sustainability whereas about half of the Indian states failed to meet the same at disaggregate level. While the spline technique rejects the non-linear form of fiscal reaction function, grant is the only undermining factor found significant, among the state-specific additional explanatory variables. If fiscal transfers are not included in the primary balance, there is also a positive response at aggregate level. However, at disaggregate level, states like Andhra Pradesh, Goa, Gujarat, Himachal Pradesh, Jammu and Kashmir, Karnataka, Maharashtra, Tamil Nadu, Tripura, Uttarakhand and West Bengal do not pursue sustainable fiscal policies. Finally, most of the Indian states fail to meet the no-Ponzi condition with an exception of Haryana and Punjab. This is a unique attempt in Indian sub-national context and we hope that the findings of this study may be useful to policymakers, international agencies and other researchers to take appropriate strategies to improve the debt conditions of Indian states.

Keywords: *Public Debt, Primary Balance, Sustainability, Indian States, Bohn Model*

JEL Codes: *E62, H63, H72, H74*

---

* ICSSR Research Fellow, Madras School of Economics

† Professor and Director, Madras School of Economics

LEVERAGE EFFECT AND VOLATILITY ASYMMETRY: INTERNATIONAL EVIDENCE

Parthajit Kayal[*] *(MSE) and S. Maheswaran*[†]

Abstract

The leverage effect, the relationship between asset volatility and returns is generally examined at contemporaneous or inter-temporal level. Instead, this paper examines the leverage effect over a period by classifying days into positive-return and negative-return days. We also examine the volatility asymmetry in leverage effect by decomposing the volatility into 'up' and 'down' volatilities. This paper makes use of extreme value estimators to examine 14 indices from different Emerging economies and 10 indices from developed economies. We document that the evidence of a negative relationship between volatility and returns is more prevalent in developed markets. This study also observes a dominance of 'down' volatility over 'up' volatility during negative-return days.

Keywords: *Leverage Effect, Volatility Asymmetry, Extreme Value Estimator, Herding*

JEL Codes : *G11, G12, G14, G15*

[*] Lecturer, Madras School of Economics

[†] Institute for Financial Management and Research

INFORMATION ASYMMETRY AND EQUITY ISSUE DECISION OF ZERO DEBT FIRMS IN INDIA

Bipin Sonya[*] *and Saumitra Bhaduri*[*]

Abstract

Concentrated family ownership, weak legal framework, inadequate corporate governance norms, and poor investor protection measures make information problems severe in an emerging market like India. This study investigates the role of information asymmetry in the equity issuing behavior of the zero debt firms compared to the levered firms. The zero debt firms have caught the attention of many investors, as they are conservative and prudent in decision-making. However, zero debt firms face more information problems because they are not exposed to secondary debt markets. We argue that levered firms already exposed to security markets, face less information problems, and issue more equity compared to zero debt firms. A propensity score matching method and a logistic regression is used to test the arguments. The result suggests that information asymmetry problems are important in the security issue decisions, and the zero debt firms more information problems. The levered firm's issue more of equity compared to the zero debt firms though zero debt firms are financially sound. Our result supports the argument that information based models have more relevance in the emerging markets.

Keywords: *Capital structure, Information asymmetry, Zero-debt, Emerging economy.*

JEL Codes : *G32*

[*] PhD Scholar, MSE, Corresponding Author

[*]Professor, Madras School of Economics

DYNAMICS OF STOCK PRICES AND EXCHANGE RATES: EVIDENCE FROM INDIA

Sunil Paul[*] *and B. Anand*[†]

Abstract

The dynamic interactions between stock and currency markets have substantial implications on financial market participants as well as economic policy making. This study probes into the dynamic relationship between stock prices and exchange rate in India using weekly data from July 2000 to December 2017. We examine the relationship in the long-run and also try to capture the volatility spill-over between the two markets. The results for long-run relationship suggest significant long-run relationship with the direction of causality running from stock prices to exchange rate. Further, to understand the volatility interactions between these markets, Extended Constant Conditional Correlation (ECCC) GARCH model was utilized. The empirical results indicate significant volatility spill-over between exchange rate and stock prices and it turns out to be stronger during the financial crisis period of 2007-11.

Keywords: *Exchange rates, stock prices, Cointegration, Volatility spillover*

JEL Codes: *C32; F31; G15*

---

[*] Assistant Professor, Madras School of Economics

[†] Narsee Monjee Institute of Management Studies, NMIMS

SKIN IN THE GAME - INVESTOR BEHAVIOR IN ASSET PRICING, THE INDIAN CONTEXT

Sourav Gupta[*] *and Saumitra Bhaduri*[†]

Abstract

The paper presents a dynamic factor model to study the impact of investor behavior on asset returns using an augmented conventional three factors model with behavioral factors. A factor model is proposed to extract distinct latent factors representing fluctuations in asset returns due to changes in fundamentals as well as investor's sentiments. The study investigates investor behavior under two broad categories, market-wide sentiment, and herding. Consistent with the literature, our results suggest that the behavioral factors play a significant role in explaining variation the asset prices. However, the degree of influence depends on the nature of the stocks or portfolios. The findings conform to the hypothesis that behavioral factors play a more important role in explaining high and medium valued stocks than smaller valued stocks. Further, the behavioral factors also exhibit high auto-correlation, depicting the pervasive nature of such factors, and proving that information cascades and other behavioral mechanisms propagate over a period of time leading to bubbles and market crashes. Finally, since herding is often associated with market volatility, we test the hypothesis using two measures of volatility and results shows positive significant associations between them as suggested in the literature.

Keywords: *Sentiment, Herding, Dynamic Factor Model, Mispricing of Asset Returns*

JEL Codes: *G41*

[*] Madras School of Economics

[†]Professor, Madras School of Economics

EVIDENCE FROM BOARD EFFECTIVENESS IN AN EMERGING MARKET CONTEXT

Sumon Kumar Bhaumik[*]*, Manisha Chakrabarty* [†]*, Ali Kutan*[‡] *and Ekta Selarka*[§]

Abstract

As the debate about the relevance of board composition, in general, and board independence, in particular, continues in the Anglo-Saxon context, emerging market economies have been quick to base their corporate governance structures on their Anglo-Saxon counterparts. In particular, they have been quick to adopt the popular wisdom about the importance of board independence for corporate governance (Peng, 2004; Clarke, 2006; Afsharipour, 2010). Even where events such as the corporate governance crisis at the large Indian IT firm Satyam has led to introspection about the role and importance of the board and board independence in particular (KPMG and Assocham, 2011), the lessons learnt are largely about the need to have better independent directors and better alignment of the interests of these directors with that of the shareholders. Little attention is paid to the fundamental issue, namely, that "the board is not an effective device for decision control unless it limits the decision discretion of individual top managers" (Fama and Jensen, 1983). Yet, in emerging market contexts, firms are characterised by entrenched manager-owners who own controlling shares of these companies directly or through proxy. Further, the nature of agency problems in these firms is different in that, unlike in Anglo-Saxon firms, the interests of the managers and controlling shareholders converge by the very nature of these firms. Indeed, the corporate governance problem in these firms is one of potential expropriation of minority shareholders by majority (or controlling) shareholders, the so-called Type II (or principal-principal) agency problem (Shleifer and Vishny, 1997; Bebchuk et al., 2000; Bhaumik and Selarka, 2012). Hence, on the one hand, unless the incumbent manager-owners of such a firm (with controlling shareholders) commit outright fraud and thereby breaks the law, the board as well as the wider market have limited power to discipline them. On the other hand, where such firms are concerned

[*] (University of Sheffield),
[†] Indian Institute of Management, Calcutta
[‡] (Southern Illinois University Edwardsville
[§] Corresponding author: ekta@mse.ac.in, Madras School of Economics

about the cost of their equity capital, it may be sensible for them to signal good corporate governance by way of significant board independence (and oversight that is presumed to accompany such independence) (Dahiya et al.2008).

We contribute to this literature in three different ways. First, we address the high level question as to whether adoption of corporate governance mechanisms that may (or may not) be optimal for the Anglo-Saxon context is useful in emerging market contexts that have quite different ownership structures. While this issue has been discussed by scholars of business law (Varottil, 2010), to our knowledge, there is no rigorous evidence based analysis of this important regulatory issue. Second, rather than focusing on a high-level outcome such as firm value, we focus on the underlying issue of expropriation of minority shareholders. To begin with, we focus on dividend payout, which is correlated to corporate governance quality (Mitton, 2004), in as much as it reduces managerial discretion over free cash flow (Bohren et al., 2012; John et al., 2015). Next, we focus on earnings management that is an indicator of the quality of information provided by a firm's management and is, therefore, a proxy for a firm's informational opacity. Third, we distinguish between two different types of firms, both of which have controlling shareholders, on average, but which have different degrees of opacity and different capabilities for expropriating minority shareholders. Specifically, we distinguish between firms that are affiliated to business groups and those that are not. Business group affiliated firms (and business groups themselves) are perceived to be more opaque than other firms (Khanna and Palepu, 2000; Claessens and Fan, 2003), and their internal capital markets facilitate activities such as tunnelling that have implications for minority shareholder expropriation (Bertrand et al., 2002; Kali and Sarkar, 2011). It has been argued that internal capital markets also have implications for dividend policies of business group affiliated firms (Gopalan et al., 2014). Making a distinction between business group affiliated firms and those that are not is, therefore, an important step in understanding the impact of corporate governance mechanisms in firms with controlling shareholders.

Keywords: *corporate governance, ownership concentration, board of directors*
JEL Codes: *G34; G32*

Acknowledgments

The authors gratefully acknowledge a UKIERI Trilateral Partnership grant that has facilitated collaboration among them since 2013. They also thank audiences at a seminar at the University of Sheffield and UKIERI financed workshops at the Indian Institute of Management Calcutta and the University of Sheffield for constructive feedback. The authors remain responsible for all remaining error.

FINANCIAL INCLUSION AND INFORMATION AND COMMUNICATION TECHNOLOGY DIFFUSION: AN INTERSTATE ANALYSIS FOR INDIA

Simontini Das [*] *and Amrita Chatterjee*[†]

Abstract

Financial Inclusion has its primary objective in providing access to useful and affordable financial products and services that meet the needs of so far unbanked population for transactions, payments, savings, credit and insurance in a responsible and sustainable way. The penetration of banking services in India has made reasonable progress though there are still regional disparities with especially the rural and female population lagging behind. However, not only access but also usage of financial services matters. Moreover, as there is a strong initiative towards digitalized cashless economy in India, it is important to examine whether the country is ready for a more technology-driven financial system. As far as the diffusion of telecommunication technology is concerned, India has made a remarkable progress in urban areas giving rise to significant digital divide between rural and urban India. With spread of mobile and mobile internet though, this divide has come down to some extent. Thus if this inclination towards mobile technology can be properly channelized to improve the access as well as usage of financial services through spread of mobile banking then more and more people can be brought under the purview of institutional credit system leading to reduction in poverty and inequality. The current paper intends to study the role of information and communication technology (ICT) diffusion in improving the status of financial inclusion across the different states of India. Two separate indices for Financial Inclusion and Information Technology Diffusion are formed and the states are ranked using Kendall's index of rank concordance. Then the paper tries to test whether ICT diffusion is one of the indicators of Financial Inclusion in India using a Dynamic Panel Data framework. The results show that there is positive and significant role of ICT diffusion in Financial Inclusion though there is no convergence among the states in terms of Financial Inclusion.

Keywords: *Financial Inclusion, Information and Communication Technology Diffusion, Dynamic Panel Data Model*

JEL Codes: *L86, L96, C23, G21*

[*] Jadavpur University, Kolkata

[†] Assistatn Professor, Madras School of Economics

DETERMINANTS OF MICROFINANCE OUTREACH THROUGH SHG-BANK LINKAGE PROGRAM IN INDIA

S. Saravanan and K R Shanmugam†*

Abstract

This study empirically analyzes the determinants of outreach of the world's largest microfinance program, namely the self-help groups –bank linkage program in India. Using the state level panel data during 2008-2015, six indicators of outreach and static panel data methodology, this study finds that: microfinance outreach has not been to the "key demographic" of microfinance, namely poor, underserved agrarian based population, women etc. Instead, microfinance expansion in terms of average loan is correlated with higher per capita income at the state level, indicating that richer income states get more micro credits than poorer states. Literacy, NPA and bank ownership also matter in determining microfinance outreach. As banks seem to play safe mode and emphasis on sustainability aspects, the large scale outreach to poor needs to be given priority. These findings may be useful to all stakeholders of microfinance to take appropriate strategies to increase the outreach.

Keywords: *microfinance outreach, self-help group-bank link program, panel model.*

JEL Codes: *c33, G21*

(i) banks offer more microcredits to SHGs in high income states, particularly Southern states as they have more repaying capacity; (ii) poverty, backwardness and literacy are not significantly related to outreach; (iii) low outreach is associated with rising NPAs, high proportion of loans by regional banks, more credits to women SHGs and priority sectors; and (iv) banks play a safe mode and give attention implicitly to the sustainability issue. Two main policy implications for improved outreach emerge from these empirical findings are: (i) priority to be given to poor, backward and agriculture based states, particularly to north and northeast states, women SHGs, and priority sector and ii) NPAs need to be controlled. These findings are useful to all stakeholders of microfinance and to take appropriate strategies to improve the outreach and performance of the program.

Keywords: *microfinance institution, self-help group-bank link program, panel model, outreach, sustainability*.

---

* UGC Post Doctoral Fellow, Madras School of Economics

† Professor, Madras School of Economics

SUSTAINABILITY AND EFFICIENCY OF MICROFINANCE INSTITUTIONS IN SOUTH ASIA

Brijesh C. Purohit and S. Saravanan†*

Abstract

In this paper we focus on microfinance institutions in South Asia. These microfinance institutions (MFIs) provide credit to the poor who have no access to commercial banks. This is done to reduce poverty and to help the poor with setting up their own income generating businesses. There appears to be in general a conflict between the outreach activities of such MFIs and their sustainability. It may also influence the efficient functioning of such organizations. Therefore, the focus in literature has shifted from subsidizing MFIs to their financial sustainability and efficiency. It is now presumed that such institutions should be able to cover the cost of lending money out of the income generated from the outstanding loan portfolio and to reduce these costs as much as possible. Besides it there is an element of increasing competition among MFIs which is coupled with factors like commercialization, technological change and financial liberalization and regulation policies of the government.

In view of such developments we analyze the behavior of microfinance institutions in South Asia comprising MFIs in India, Nepal, Bangladesh and Sri Lanka. We look into major aspects of access to poor by MFIs, sustainability in activities and finances as well as the efficiency of such organizations from different parameters.

Using data for 5 years for 142 MFIs across these nations, our results indicate that the goals of sustainability and efficiency are mutually supportive. In the long run this makes these organizations to shift and choose their focus to those outreach activities in which they exhibit efficiency from different angles such that sustainability along with reduced dependence on lenders as well survival in competitive environment is feasible.

Keywords: *Micro finance institutions, South Asia, sustainability, efficiency, competition.*

JEL Codes: *G21, G32, G33, C33, I31*

---

* Professor & in charge Union Bank chair, Madras School of Economics

† UGC Post Doctoral Fellow, Madras School of Economics

WOMEN AND ECONOMIC CITIZENSHIP FOR THE PURSUIT OF INCLUSIVE GROWTH IN INDIA

Brinda Viswanathan[*]

Abstract

To be able to access the labour market and further, to be able to earn salaries or be self-employed without facing social discrimination is being defined as economic citizenship for the purpose of this study. The Wadhwani/Nathan Breakthrough Index shows that Indian states with higher female workforce participation rates have: no restrictions on women's working hours, high conviction rates for workforce crimes, offer incentives for women entrepreneurs (CSIS, 2016).

The first part of the study takes a relook at the supply side aspects of women's workforce participation and uses the IHDS-2 data set of 2014-15, focussing on the role of institutions. Regions with (a) people's perception of higher confidence in institutions like police and judiciary, (b) a better rank in the index of gender relations within the household and (c) a higher rank of social network index have higher probability of participation rate of women. Education and age have non-linear impacts with the former showing a U-shaped relationship and the latter an inverted U-shaped relationship. Better economic status, husband's or father's higher educational status and women's care-giving responsibilities in terms of early-childhood care and elderly care, lower the likelihood of participation.

It has been estimated that if women's participation rate increases to the current level of men then it would add 16 percent to India's GDP in the next 10 years starting from 2015 (MGI, 2015). The second part of this study assesses the opportunities and challenges that the concept of economic citizenship offers that would enable the pursuit of inclusive growth, in the current context of declining female labour force participation in India.

Keywords: *Citizenship, Women, Workforce, Inclusive growth, India*
JEL Codes: *J2, J7, I3, P0*

[*] Professor, Madras School of Economics

Acknowledgement

A substantial part of this research was carried out while the author was on sabbatical in 2015 at Madras Institute of Development Studies, Chennai and would like to thank their chairperson, director and faculty members, for useful discussions.

HOUSEHOLD INCOME DYNAMICS AND INVESTMENT IN CHILDREN: EVIDENCE FROM INDIA

Sowmya Dhanaraj[*], *Christy Mariya Paul*[†], *and* Smit Gade[‡]

Abstract

Shocks to households in developing countries impact investments in the education of children. In this paper, we explore the effects of various income and expenditure shocks on educational investment and cognitive outcomes in children. We use three rounds of household-level panel data from Young lives survey conducted in two southern states of India, Andhra Pradesh and Telangana. We use Dynamic Panel data model using system General Method of Moments (GMM) estimator for investigating the impact of various income and expenditure shocks on children's education and cognitive abilities. We find that idiosyncratic shocks like paternal health shocks and livestock loss translate into lower inputs of children's education which in turn reduce their cognitive ability captured through vocabulary and mathematics tests. We also find that these shocks mainly affect children's development through decreased time spent in school.

Keywords: *child time use, vocabulary and mathematics test scores, dynamic panel estimation*
JEL Codes: *I20, I24, I30*

Acknowledgments

The paper was presented in 13th Annual Conference on Economic Growth and Development held in ISI Delhi. The comments received from the participants helped improve the contents of the paper. Special thanks to Dr. Vidya Mahambare and Dr. Anup Bhandari for their comments on an earlier draft of the paper.

[*] Corresponding Author, Assistant Professor, Madras School of Economics
[†] Madras School of Economics
[‡]Good Business Lab

ECONOMIC VALUATION OF ECOSYSTEM SERVICES FOR SUSTAINABLE ENVIRONMENTAL MANAGEMENT: A CASE STUDY OF WETLAND ECOSYSTEM VALUATION

Zareena Begum Irfan[$ 1,*] *and Venkatachalam Lingappan*[*]

Abstract

Depletion and degradation of natural capital, caused by negative externalities, adversely affect sustainable development. Public policies aimed at internalizing negative externalities rely largely on the social benefit-cost analysis (SBCA). Valuable ecosystem services generated by natural capital and affected by the negative externalities are mostly non-marketed in nature. Estimating the economic value of such services in order to incorporate them in the SBCA is a pre-requisite for formulating public policies towards sustainable development. This paper discusses results from a case study that attempted to estimate the monetary value of some of the ecosystem services of Ousteri wetland lying in Tamil Nadu-Puducherry region. The governments took conservation efforts by declaring the wetland as a bird sanctuary which denied the traditional users to have continued access to many ecosystem services. We estimated the total economic value of three major ecosystem services - recreational service, irrigation and biodiversity–since these were the only services that the users could utilize after governments' conservation efforts. We used travel cost method, production function approach and contingent valuation method to estimate such values. The total economic value of the direct ecosystem benefits is estimated to be INR. 2447144.00 per annum. The net-present value (NPV) of the ecosystem benefits for the 5 years' time period (at 6 per cent discount rate) comes to INR. 5903376.43. The results suggest that an alternative institutional arrangement through 'payment for ecosystem services' scheme would potentially bring in win-win outcome for most of the major stakeholders of the wetland, apart from managing the wetland on a sustainable basis.

Keywords: *public policy, social benefit-cost analysis, ecosystem services, non-market valuation, sustainable development*

JEL Codes: *O13, Q15, Q56, N55, R11*

$ Corresponding Author, Associate Professor, Madras School of Economics

[*] Professor, Madras Institute of Development Studies, 79, II Main Road, Gandhi Nagar, Adyar.

Acknowledgement

The paper is based on the results from a research study on estimating the economic values of ecosystem services of Ousteri wetland, sponsored by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, Indo-German Biodiversity Programme Office, New Delhi and Ministry of Environment, Forest and Climate Change, Government of India. The authors thank these organisations for the generous financial support. The authors are also grateful to their parent institutes, which provided them the infrastructural benefit of conducting the research work.

LOSS AND DAMAGE FROM CLIMATE-RELATED EVENTS: CASE STUDY OF TAMIL NADU, INDIA

K.S. Kavi Kumar[*] and *Chandra Sekhar Bahinipati*[*]

Abstract

Given the growing evidence of climate science and slow pace of progress in greenhouse gas mitigation, it is widely believed that climate change impacts will exceed adaptation limits – at least in some contexts. The residual impacts are referred in the literature as loss and damage. Currently, such residual impacts are observed in the context of climate-related events like cyclones, floods, droughts, salinization etc. It is expected that the developing and the least developed nations, in particular, bear relatively larger impacts from such events. Actual loss and damage however crucially depends on several traits such as attributability, irreversibility, unavoidability and intolerability.

Focussing on the southern Indian state of Tamil Nadu, this paper attempts to assess, (i) the trends in loss and damages caused by cyclones and floods; (ii) the projection of potential future infrastructural damages due to cyclones; and (iii) the potential damages due to slow onset event salinization. The declining trend in the normalized losses due to cyclones and floods over the past five decades suggests that socio-economic factors had significant role in determining the loss and damage due to climate-related events. The future projections of infrastructural damages associated with cyclonic storms indicate that the damage crucially depends on landfall location, reiterating the importance of socio-economic factors. Based on primary data collected from the communities affected by salinization in the coastal districts of Nagapattinam and Thiruvarur, the paper projects that around 2 per cent of total rice production would have been lost in the state during 2013-14. In contrast, only about 10-15 per cent of the damages are covered through insurance – that too if the damages are incurred due to cyclones, floods etc. Adoption of effective measures to fill the policy gap is crucial for addressing both the present-day climate-related events and for the future climate change.

Keywords: *Extreme Climate Events; Adaptation; Loss and Damage; Tamil Nadu*

JEL Codes: *Q54; H84; E62; R10*

---

[*] Professor, Madras School of Economics

[*] Co-author: Chandra Sekhar Bahinipati, Indian Institute of Technology, Tirupati