INTEGRATING TIME IN PUBLIC POLICY:
ANY EVIDENCE FROM GENDER DIAGNOSIS AND BUDGETING

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ABSTRACT

Incorporating time in public policy making is an elusive area of research. Despite the fact that gender budgeting is emerging as a significant socio-economic tool to analyze the fiscal policies to identify its effect on gender equity, the integration of time use statistics into this process remain partial or even nil across countries. If gender budgeting is predominantly based on the index-based gender diagnosis, a relook into the construction of the gender (inequality) index is relevant. This is significant to avoid a partial capture of gender diagnosis in the budget policy making. The "Hard-to-Price" services are hardly analysed for public policy making. The issue is all the more revealing, as the available gender (inequality) index so far has not integrated time use statistics in its calculations. From a public finance perspective, gender budgeting process often rest on the assumption that mainstream expenditure such as public infrastructure is non rival in nature and applying gender lens to these is not feasible. This argument is refuted by the time budget statistics. The time budget data revealed that this argument is often flawed, as there is intrinsic gender dimension to the non-rival expenditure.

Key Words: Unpaid care work, fiscal policy, gender budgeting, time use, macro policy.

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Integrating time in macro policy making is an elusive area of research. Data paucity is often cited as the major constraint in undertaking such research, especially relevant for the policy making related to non-monetised sectors. These sectors are often regarded as "hard-to-price" sectors and evaded from policy analysis. Time use statistics to a great extent solve the problems of non-monetised sectors by providing better work force participation estimates in both paid and unpaid sectors, as well as in lifting the statistical invisibility of unpaid care work. However, despite the fact that gender budgeting is emerging as a significant socio-economic tool to analyze the budgetary policies to identify its effect on gender equity, the integration of time use statistics into this process remain partial or even nil across countries. It is interesting to recall Becker (1965), in a paper titled "A Theory of Allocation of Time", published in the Economic Journal, where he noted that "throughout history the amount of time spent at work has never consistently been much greater than that spent at other activities. Economic development has led to a large secular decline in the work week so that today time spent at work is less than a third of the total time available. Consequently, the allocation and efficiency of 'nonworking' time may now be more important to economic welfare than that of working time. Yet the attention paid by economists to the latter dwarfs any paid to the former."

The prime reason for the lack of integrating time budgets into gender budgeting are threefold. One, the time use survey itself is not conducted at a macro level in many countries. Though conducted in a few countries, those remains as one point survey and lacks time series data. Two, the process of gender budgeting itself is highly partial across countries focusing broadly on the market economy and does not incorporate the analysis of unpaid care economy. Though the conceptual discussions on gender budgeting highlighted the significance of giving thrust to the statistical invisibility of unpaid care economy in framing the policies related to gender budgeting, it is seldom translated at empirical levels. Three, gender budgeting is conducted across countries on a highly restricted assumption that 'all public expenditure cannot be gender partitioned', especially the mainstream infrastructure spending (both social and physical). This assumption is highly controversial.

Even the mainstream public expenditure – especially social and physical infrastructure has gender differential impacts. The results of limited Benefit Incidence Analysis (BIA) conducted across income quintiles clearly shows the distributional impacts of public expenditure across class and gender. However, BIA exercises are not carried out for certain public expenditure due to lack of data on 'units utilised'. The time use budget is a significant domain of 'unit utilized data' which is hardly used by any researchers in BIA.

Gender budgeting has three significant components; (i) gender diagnosis ; (ii) analyzing the contribution of women not only in market economy, but also in unpaid care economy and (iii) analyzing the budgets for the gender differential impacts of public expenditure. Time use statistics play significant role in each of these components, which is highly neglected in the studies on gender budgeting. This paper takes up these issues and analyse the scope and limitations of integrating the time use in gender budgeting.

The paper is organized as follows. Section 1 explains gender budgeting and its rationale. Section II deals with the analytical framework of gender budgeting, incorporating the time budgets. Section III discusses the scope of time use statistics in gender diagnosis. Section IV highlights the significance of time use in lifting the statistical invisibility of unpaid care sector and integrating in gender budgeting. Section V focuses on the use of time budgets in analyzing the gender differential impacts of public expenditure. Section VI concludes.

I.   Briefing of Gender budgeting and its rationale

Gender budgeting is an innovation to translate gender commitments into budgetary commitments. It is not making an exclusive budget for women. Nor it is an earmarking of functional finance for programmes targeting women. It is analyzing the entire budget through a gender lens to identify the gender differential impacts of budgetary process. Culture affects the socio-economic outcomes of fiscal policies. Prima facie budget may appear to be gender neutral. However the asymmetry in the socially determined systemic roles played by man and woman can lead to differential impacts of budgets on gender. Gender budgeting is one of the ways to

unpack the 'social' content of the macro policies and getting the public policies right in terms of gender sensitive human development[i].

Broadly budgeting involves four components: (i) resource allocation of resources to various heads, (ii) the actual public outlays on various heads, (iii) an accounting of how public resources are spent for a particular purpose (including fiscal marksmanship), and (iv) an analysis of the effectiveness of the public spending in delivering the intended results. Gender budgets examine these four components through a gender lens.

Can all public spending be gender partitioned? While it is a debate whether public goods and services - which are non-rival and non-excludable in nature- like defense be amenable to gender partitioning, many other public expenditure have gender differential impacts. It is all the more relevant to note that the issues of non-rival and non-excludable is an issue not just for gender, but also for other disadvantaged sections of the population like Aboriginals, that cannot be segregated on a 'geographic area' basis. Yet another point to be noted is that the public expenditure on infrastructure such as roads, irrigation, energy, water and sanitation, science and technology etc has intrinsic gender dimensions. It is important to examine the infrastructure budgets such as energy, technology and transport that are assumed to be "gender-neutral". An analysis of infrastructure budgets not only reveals the differing needs of and constraints on women's and men's lives and productive roles, but would also help to reveal the inefficiency of existing allocations which may not be adequately reaching the women and men. An IFPRI study showed that public expenditure on road infrastructure has the largest impact on poverty reduction (Fan, Hazell and Thorat, 1999). This generates debate on 'specifically targeted programmes for poor' versus 'infrastructure programmes'; particularly in terms of gender budgeting.

Yet another example is that the public spending for augmenting the supply of safe drinking water can benefit women more than men in the *care economy* by cutting down on the time spent in fetching water from the river or ponds. The existing practice of budgeting across countries may not pay any special attention to the impact of budgets on women in the *care economy*. The Systems of National Accounts (SNA) 1993 recognises unpaid work in the care economy as 'productive' and as 'work', however kept outside the purview of calculations of GDP and kept as satellite accounts. The point to be noted is that despite the recognition of care

economy by SNA 1993, the policy makers and economists have not yet satisfactorily integrated care economy into macro policy planning.

In many ways, the government budgets are 'subsidised' by unpaid care economy work. For instance, when government cuts back public expenditure on health, it is women (care givers) in households who bear the brunt of it. Yet another example is that to cope with the increasing demand for services generated by HIV/AIDS, many countries are opting for Home-based Care systems, where voluntary or low paid care givers provide care to the patients rather than them being cared for in hospitals. This can reduce the public expenditure on health to considerable amount. However, the point to be noted is that when a public expenditure policy on health is designed in any country, the policy makers take into consideration only the 'users' of health services, not the health providers (the care givers at household level). The implications of this example on gender budgeting are tremendous.

II. Analytical Framework of Gender Budgeting Incorporating Time Budgets

Analytical framework to gender budgeting can be dichotomized into: (a) *ex-post* gender budgeting; in which the existing budget is analyzed through a gender lens and (b) *ex-ante* gender budgeting; in which, the needs of the women are identified first and then budgeting it. The ex-ante budgeting is basically what we aimed for in terms of gender budgeting; while ex-post is towards a gender analysis of the existing budgets. Time use statistics has a significant part in both ex-ante and ex-post analysis of gender budgeting. In ex-post analysis of gender budgeting, the analysis of mainstream expenditure (assumption that all public spending has gender differential impacts) can use time budgets to show gender differential effects of public spending. In ex-ante gender budgeting, the identifying of gender needs and preferences before budgeting extracts data on preference revelation and demand mechanisms based on the time use statistics.

II.1: Ex-post

Ex-post analysis begins with the identification of three categories of public expenditure: (i) specifically targeted expenditure to women and girls (100 per cent targeted for women), (ii)

pro-women allocations; which are the composite expenditure schemes with a women component (that is, a scale of 100> exp. ≥ 30; at least 30 per cent targeted for women) and (iii) residual public expenditures that have gender-differential impacts (that is, a scale of 0 ≥ exp. > 30). It is relatively easy to identify the specifically targeted programmes for women across ministries from the Expenditure Budget documents. But the challenge is that the information on the women component intrinsic in the composite programmes is not readily available in the budget documents. The attempts to incorporate time use in ex-post gender budgeting belong to second and third categories. Across globe, particularly India, only limited number of the Demand for Grants in second and third categories is analyzed through a gender lens due to lack of unit utilized data on public provisioning. The point would be highlighted here is that time budgets provide a rare gamut of data on unit utilized. The illustrations for this point would be taken up later in this paper.

Ex-post analysis can integrate the methodology of gender disaggregated benefit incidence analysis. Benefit incidence analysis is estimating distributional impact of public expenditure across different demographic and socioeconomic groups. It involves allocating *unit cost* according to individual utilization rates of public services. It can identify how well public services are targeted to certain groups in the population, across gender, income quintiles and geographical units. However, BIA studies have been largely confined to education and health sectors due to the comparative richness of unit utilized data from the secondary sources (Demery, 2000), Demery et al (1995), Mahal et al (2001), Chakraborty et al (2013)). To analyze the distributional impact of public expenditure on water supply and energy is difficult to undertake at macro level due to paucity of data on units utilized. The point to be noted here is that time-use statistics may provide these data on unit utilized of other social sector expenditure. Chakraborty (2008a, 2008b, 2010) attempted an illustrative gender disaggregated benefit incidence analysis of water sector in India using the time use data.

II.2: Ex-ante

Ex-ante process translates the goal towards gender equity in an iterative manner as follows: (i) identifying the spatial gender issues (ii) translating the gender concerns into relevant

objectives to be included in the budget policy/ programmes (iii) redefining the gender strategies at the policy and programme levels with targets (iv) defining the gender related performance indicators and (v) costing it to form the gender budgets and subsequently identifying the budget heads.

Identifying spatial dimensions of ex-ante gender budgeting is a critical step. The gender issues differ from region to region within a country; for instance within India, the needs of women in Rajasthan desert village may differ from the needs of Kerala women in a coastal village. The gender concerns of a 'state of nature'' regions in Andaman and Nicobar Islands differ from the gender issues in the urbanised regions of Haryana with zero forest zones. Ex-ante analysis of gender budgeting can extract data from time budgets for spatial mapping of gender needs. The patterns emerging from time budgets can give clues on preference revelations and demand mechanisms which in turn can be used for the spatial mapping of gender needs.

II.3: Tax

Conceptual discussions on gender budgeting though highlighted the significance of constructing 'care tax' and analyse its co-movement along with other direct and indirect taxes (Elson 2000), it has hardly been constructed across countries. The time use budgets have a significant role in constructing the 'care tax'. As defined by Elson (2000), care tax is a notional concept of tax valued on the time spent in care work by men and women. As time budgets are not available across countries, 'care tax' has hardly been constructed nor analysed.

Empirical studies on gender responsive tax policy, in particular gender disaggregated tax incidence, is rare. The tax incidence studies are basically in terms of its burden across income categories (Pechman, 1985; Engel, Galetovic and Claudio-E, 1999) and not across gender. In the conxtext of India, a study on tax incidence across gender has been conducted for West Bengal (Chakraborty P, Chakraborty L and Karmakar, K 2008).

In the context of developed countries like Australia, an early campaign was around the 'dependant spouse rebate' paid primarily to male breadwinners which Federal Treasury eventually acknowledged in one of the early Federal Women's Budgets was a gender issue (Sawer, M, 2002). In the context of developed countries, more recent work relates to the gender

aspects the interaction between the tax and welfare system in creating higher effective marginal tax rates for women. This has been a major criticism of the family assistance packages of recent federal budgets (Patricia Apps and Ray Rees, 2008). Apps and Rees (2008) argued that the recent reforms in US, UK and Australia in lowering tax rates on high incomes and expanded tax credits and family transfer payments that are withdrawn on the joint income of a couple have led to high effective marginal rates across a wide middle band of earnings and to a shift towards joint taxation. They also argued that joint taxation results in high tax rates on secondary earners, with in consequence undesirable effects on both work incentive and fairness of the income distribution. The lifecycle analysis of time use and saving decisions applied in the study indicated strong negative effects on female labour supply and household saving.

III.   Time Budgets in Gender Diagnosis

Gender diagnosis is the basic premise for any gender budgeting policy. Till 2010, the single most significant index used for identifying the gender diagnosis of any nation is the Gender Development Index (GDI). This global index neutralizes or non-utilises many of the nation-specific gender inequality issues. For instance, the gender disaggregated income component of GDI is constructed on the basis of market economy statistics. But as is well known, the women work in non-market sector and nature of the economic activity performed by women is highly of unpaid or unremunerated in nature. Unless GDI is corrected for this component incorporating the time budgets, GDI remain partial in its construction.

The Gender Development Index (GDI) was a version of Human Development Index, but adjusts for the degree of disparity in achievement across genders using "equally distributed equivalent achievements". The equally distributed equivalent achievement for a variable is taken as that level of achievement that if attained equally by women and men would be judged to be exactly as valuable socially as the actually observed disparate achievements (Anand and Sen, 1995).   Taking an additively separable, symmetric and constant elasticity marginal valuation function with elasticity 2, the equally distributed equivalent achievement X_{ede} for any variable X turns out to be

$$X_{ede} = [n_f (1/X_f) + n_m (1/X_m)]^{-1}$$

where X_f and X_m are the values of the variable for females and males, and n_f and n_m are the population shares of females and males. X_{ede} is a 'gender-equity-sensitive indicator'(GESI).

Thus, for this chosen value of 2 for constant elasticity marginal valuation function, GDI is computed as

$$\{L_{ede} + (2/3 \times A_{ede} + 1/3 \times E_{ede}) + Y_{ede}\}/3,$$

where L is life expectancy, A is adult literacy rate , E is enrolment ratio and Y is income.

If the partial construct of GDI is used as the optimal criteria for framing gender budgeting policies in analyzing the asymmetry in socio-economic scale across gender, the gender budgeting policy itself would reflect partial status of women with elements of elite capture.

The income component of GDI is partial as it leaves apart the unpaid economic activity. It is a highly known that unpaid work remains significantly invisible in national accounts. In terms of Time Budgets, income of any country captures only a part of economic activity. This categorization of activities used in the TUS in India reveals how partial the GDP of a country is. Time budgets categories activities into threefold: SNA activities (that get included in GDP calculations), extended SNA activities (that do not get included in GDP but should be included in the satellite accounts) and residual non-SNA activities.

UNDP estimates suggest that US $ 16 trillion of global output is invisible and US $ 11 trillion was the non-monetised, invisible contribution of women (UNDP, 1995). The attempt of United Nations Statistical Division (UNSD) in extending the production boundary of the Systems of National Accounts (SNA), 1993 has led to the integration of unpaid care work into the national accounting system as satellite accounts.

III a. Gender Inequality Index

Since 2010, the human development index and gender development index have undergone changes in terms of variables used in calculating them as well as methodology. However the time use statistics has not been used to revise the income component of the index. Since 2010, HDI is geometric mean of three dimensions: health, education and income. The normalization procedure for these three dimensions is as follows.

- Normalization Procedure:
    - Life Expectancy Index = [(LE-20) / (82.3-20)]
    - Education Index = [(root of MYSE* EYSI)/0.978] as per 2001 HDR
    - MYS: Mean years of schooling (Years that a 25-year-old person or older has spent in schools)
    - EYS: Expected years of schooling (Years that a 5-year-old child will spend with his education in his whole life) (Barro and Lee , 2010)
    - INCOME = [(ln (Y) – ln (Ymax)/ (ln (Ymax) – ln (Ymin)) [in pc]

When it comes to capture the gender dimensions, health, empowerment and labour are taken as the prioritized dimensions, where empowerment is captured through education and participation in governance. The variables used for each dimensions are as follows.

- Health
    - Maternal Mortality Rate (the number of maternal deaths per 1,000 women of reproductive age in the population (generally defined as 15–44 years of age) .
    - Adolescent Fertility Rate (the number of births per 1,000 women ages 15-19).
- Empowerment
    - Education
        - Mean years of schooling (Barro and Lee, NBER 2010)
    - Governance/Political Participation
- Labour Market Participation**.**

The labour market participation is captured through the regular statistics, and not through time use, in this reformulation of gender index. Immense scope for improving the index by

incorporating the work force participation using time use statistics. The plausibility of incorporating time use in the income component of HDI, to value the 'hard-to-price' components of GDP is missed out even in the reformulation of HDI in 2010. However, gender budgeting also utilizes the diagnosis from non-composite measures of gender development, where unpaid care sector needs a cautious treatment using time budgets.

IV.   Time Use in Quantifying Unpaid Care Component of Gender Budgeting

Gender budgeting ideally should consider the aggregate contribution of women and men to the economy taking into consideration both the market economy and the care economy. However, across countries, gender budgeting procedure stops with looking into the womens' contribution to the market economy. The data, for instance in India shows that only a miniscule women work in organised sector, which is as low as 4 per cent. If we consider the womens' contribution to the economy by only looking into the market economy, the analysis has high possibilities of getting skewed and also encounter with the dangers of elite capture. Having said that even the market economy related gender budgeting policies are also partial as it has not come up with any social security related policies for women relates to their loss of work time in care economy. The point further to be flagged is that a significant part of womens' work is invisible, and carried out in care economy. Time Use Survey has been an effective tool in unfolding the statistical invisibility of unpaid work across countries.

Using the probability sample of all types of days (weekdays and weekends) and of different seasons of the year, the time diary method in retrospect keep an account of recent twenty four hour chronology of the use of time and the researchers code the responses to a standard list of economic and non-economic activities. Time use diaries are preferred over the other methods for they tend to be more comprehensive, they enable respondents to report activities in their own terms, and they have some form of built-in check that increases the reliability of the data (Juster, 1985). However, one of the deficiencies of time diary method is to treat the presence of multitasking or omission of overlapping of activities. This results from the imposition of a rigid constraint of time use, namely, no person has either more or less time

available than 24 hours per day (time constraint) and the set of activities capable of being measured, described, and analysed must add up to a fixed number of hours or days (Floro, 1995).

Two challenges can be encountered while estimating the value of unpaid care work. One, is to get the economic activity in utils of time. Two, is to impute market price or market wages to time. Imputing price to time is an output method of valuing unpaid care, while imputing wages to time spent on unpaid care is the input method. Input method is complicated in terms of the wage we select for the analysis, whether it is a global substitute or specialized substitute or an opportunity cost. Global substitute method is relatively easy, as it could use a lowest wage in the wage hierarchy of market economy, though it results in underestimates. The preferable method is specialised wage as it uses the wages of a specialised worker that would perform each specific economic activity. Opting out of opportunity cost is important as it is based on a wage, which the person carrying out the domestic work would receive if she/he worked in the market and it can result in widest range of estimates, depending on the skills and the opportunity wage of the individuals performing it (Beneria, 1992). From the perspective of integrating care for gender budgeting, input-related accounting is superior to output-related accounting as it could capture the intensified effort.

V.   Gender Differential Impacts of Public Spending: Time Use Methodology

Gender budgeting usually looks into only specifically targeted programmes for women, which is only around one per cent of total budget. The challenging part of any gender budgeting exercise is to look into mainstream expenditure through a gender lens. The partitioning gender factor for the mainstream public expenditure is highly unavailable and the data relates to enrolment is used as partition factor for education budgets, while morbidity statistics is used as partition factor for analyzing the distributional impact of health budgets. It is difficult to analyse mainstream budgets for its gender differential impacts (other than education and health) due to unavailability of 'unit utilised' data. Time use budgets are highly helpful in providing unit utilized data especially for water and energy budgets. Time budgets can also provide clues for framing 'care economy' policies as well. Methodologically, the differential incidence across gender of a public spending can be captured through unit costs and time utils. This utils in time is

especially relevant when data on unit utilized is generally unavailable, especially for mainstream public spending like water and fuel. Effectiveness of public spending across gender or the public expenditure using time incidence is estimated by the following formula:

$$I_j \equiv \sum_i T_{ij}\,(E_i/T_i)$$
$$\equiv \sum_i (T_{ij}/T_i)\,E_i$$
$$\equiv \sum_i t_{ij}\,E_i$$

where I_j = time specific incidence on category j;

T_{ij} = time utilization of provision i by category j;

U_i = combined time utilization of provision i;

E_i = public spending (net) on provision i; and

t_{ij} = time utilisation of category j of performing provision i.

The estimates of time incidence need to be interpreted with caution, for instance, high incidence estimates for women and girls from public provisioning of certain infrastructure services like water and fuel points to high utilization of these provisioning by them, primarily because women and girls are responsible to ensure clean water and fuel for households. This time incidence estimates have policy implications, as deficiency of certain infrastructure investment can increase the intensity of time spent for ensuring these services for the household. T_{ij} needs to estimated separately for a public provisioning of the service and non-public provisioning of the service. Non-public provisioning could also incorporate the utilization of common property resources. This is an illustrative methodology of time incidence, which needs refinements in terms of unit cost and categories of time. The time incidence also suffers from the same methodological deficiencies of benefit incidence analysis.

VI.   Conclusion

Gender diagnosis is the prelude to gender budgeting. However, time has not been incorporated in the analysis either at the gender diagnostic levels or incidence levels. If budgeting through a gender lens is predominantly based on the index-based gender diagnosis, a relook into the construction of the gender (inequality) index is imminent. This is significant to

avoid a partial capture of gender diagnosis in the fiscal policies. From a public finance perspective, the conduct of gender budgeting often rest on the assumption that mainstream expenditure such as public infrastructure is non-rival and non-excludable in nature and applying gender lens to these expenditure is not feasible. This argument is refuted by the time budget statistics. The time budget data revealed that this argument is often flawed, as there is intrinsic gender dimension to the non-rival expenditure. The time incidence analysis can provide estimates supporting greater time allocation in the economic activities like fetching of water and fuel involve more girls and women, and therefore public infrastructure investment with gender sensitive water polices and energy policies can really benefit women and girls. The methodology suggested is illustrative and suffer from same methodological deficiencies as of benefit incidence.

Reference

Anand, Sudhir and Amartya Sen (1995): "Gender Inequality in Human Development: Theories and Measurement", Human Development Report Office Occasional Paper 19. New York: United Nations Development Programme.

Anand, Sudhir and Amartya K. Sen (2000): "The Income Component of the Human Development Index", Journal of Human Development, Vol. 1, No. 1, pp. 83-106.

Barro and Lee (2010): A New Data Set of Educational Attainment in the World, 1950–2010, NBER Working Paper 15902, NBER.

Chakraborty, Pinaki , Chakraborty, Lekha and Kishanu Karmakar (2008), Gender and Incidence of Indirect Tax in India, mimeo, New Delhi: National Institute of Public Finance and Policy.

Chakraborty, Lekha S, 2008, Deficient Public Infrastructure and Private Costs: Evidence for Water Sector, *Economic and Political Weekly*, July 2008 and also appeared as *The Levy Economics Institute Working Pape*r, 2008

Chakraborty, Lekha (2009), Fiscal Decentralization and Gender Budgeting in Mexico: An Empirical Analysis, *Regional Development Studies*, United Nations Center for Regional Development (UNCRD), Vol. 12, 2009

Chakraborty, Lekha S and Amaresh Bagchi (2007), Fiscal Decentralisation and Gender Responsive Budgeting In South Africa: An Appraisal, Working Paper 44, New Delhi: National Institute of Public Finance and Policy.

Chakraborty, Lekha S (2003), Gender Based Analysis (GBA) in Canada: Lessons for India. Paper prepared under DFAIT Government of Canada SICI Fellowship, Ottawa.

Chakraborty, Lekha S (2003a), Macroscan of Union Budget through a Gender Lens. New Delhi: UNIFEM.

Chakraborty, Lekha S (2004), Gender Budgeting in Asia: An Empirical Investigation of Selected Seven Countries. London: The Commonwealth Secretariat.

Chakraborty, Lekha S (2005), 'Public Policy Stance and Human Development: An Empirical Analysis', in Bhattacharyya, B B and A Mitra (eds.) (2005), *Macroeconomics and Welfare*. New Delhi: Academic Publishers.

Chakraborty, Lekha S (2006), Fiscal Decentralisation and Local Level Gender Responsive Budgeting In Philippines: An Empirical Analysis, Working Paper No. 41. New Delhi: National Institute of Public Finance and Policy.

Chakraborty, Lekha S (2006a), 'Ex-post Gender Sensitive Analysis of Union Budget 2006–07, Government of India', NIPFP, UNIFEM.

Chakraborty, Lekha S (2007a), "Public Infrastructure Investment and Non-market Work in India: Selective Evidence from Time Use Data." Working Paper No.47. New Delhi: National Institute of Public Finance and Policy (NIPFP).

Chakraborty, Lekha S (2007b), "Gender Responsive Budgeting and Fiscal Decentralization in India: A Preliminary Appraisal." Working Paper 46. New Delhi: National Institute of Public Finance and Policy (NIPFP)

Chakraborty, Lekha S (2005a), Gender Budgeting in Selected Ministries: Conceptual and Methodological Issues, Working Paper, May. Ministry of HRD, Government of India.

Chakraborty, Lekha S (2002), Gender Budgeting in Sri Lanka: Categorising Financial Inputs. UNIFEM and the Government of Sri Lanka.

Chakraborty, Lekha S (2010), 'Public Investment and Unpaid Work: Selective Evidence from Time-Use Data. In R Antonopoulos and I Hirway (eds.), *Unpaid Work and the Economy: Gender, Time-Use and Poverty*. New York: Palgrave Macmillan.

Chakraborty, Lekha (2011), Determining Gender Equity in Fiscal Federalism: Analytical Issues and Empirical Evidence from India*, Economics and Financial Markets*, Volume 6 (3), Sept'11, New York. (also the Working Paper No. 590, 2010, The Levy Economics Institute of Bard College, New York)

Chakraborty, L (2010), Gender Sensitive Fiscal Policies: Experience of ex-post and ex-ante Gender Budgets in Asia Pacific, background paper prepared for UN Human Development Report 2010, Bangkok: UNDP.

Chakraborty,L, Yadawendra Singh and Jannet Farida Jacob, (2013). Public Expenditure Benefit Incidence in Health Sector, Working Paper 748, The Levy Economics Institute, New York.

Elson, Diane (1999): *Tools for GRB, Commonwealth Secretariat, 1999, London*

Elson, D (1995), 'Gender Awareness in Modeling Structural Adjustment', *World Development*, Vol.23, No.11, pp.1851–1868.

Elson, D (1999a), Gender Budget Initiative: Background Papers. London: Commonwealth Secretariat.

Elson, D and N Cagatay (2000), 'The Social Content of Macropolicies', *World Development*, Vol.28, No.7, pp.1347–1364.

Esim, S (2002), 'Gender Analysis of Budgets as a Tool for Achieving Gender Equality in the Arab World', *Economic Research Forum Newsletter*, 9(2), Summer.

Demery, Lionel (2000) *'Benefit incidence: a practitioner's guide.'* Poverty and Social Development. Group, The World Bank (mimeo), Washington, DC: World Bank.

Engel,-Eduardo-M-R-A; Galetovic,-Alexander; Raddatz,-Claudio-E (1999), ''Taxes and Income Distribution in Chile: Some Unpleasant Redistributive Arithmetic'' Journal of Development Economics, June 1999; 59(1): 155-92.

Fan, Shengen, P Hazell, S Thorat 1999, Growth, and Poverty in Rural India, *IFPRI Research Report,* Washington, DC:

Floro, Maria Sagrario (1995): 'Economic Restructuring, Gender and the Allocation of Time', *World Development*, Vol.23, No.11, pp.1913-1929.

Juster, F T and Stanford, F (1991): ''The allocation of time: Empirical findings, behavioral models and problems of measurement'', Journal of Economic Literature, 29 (), 471-522.

Lahiri, A, Chakraborty, L and Bhattacharrya (2000), 'India-Gender Budgeting', Report submitted to UNIFEM, South Asia, and Ministry of Human Resource Development, Government of India.

Lahiri, A, Chakraborty, L and Bhattacharrya (2001), 'Gender Budgeting in India: Post Budget Assessment Report 2001', Report submitted to UNIFEM, South Asia and Ministry of Human Resource Development, Government of India.

Lahiri, A, Chakraborty, L and Bhattacharrya (2002a), 'Gender Budgeting in India', Report submitted to UNIFEM, South Asia and Ministry of Human Resource Development, Government of India.

Lahiri, A, Chakraborty, L and Bhattacharrya (2002b), 'Gender Diagnosis and Budgeting in India, Report submitted to UNIFEM, South Asia and Ministry of Human Resource Development, Government of India.

Lahiri, A, Chakraborty, L and Bhattacharrya (2003), 'Gender Budgeting in India', UNIFEM, South Asia.

Demery, Lionel,S Chao, R Bemier and K Mehra (1995), The Incidence of Social Spending in Ghana, *Poverty and Social Policy Discussion Paper*, 82, Washington DC: World Bank.

Patricia Apps and Ray Rees, 2008 Taxation, Labour Supply and Saving *Discussion paper by for the ANU Centre for Economic Policy Research*, Canberra.

Pechman, Joseph A. (1985) *Who Paid the Taxes – 1966-85?,* Brookings Institution, Washington DC.

Rao M.G and Lekha S. Chakraborty (2006), 'Fiscal Decentralisation and Local Level Gender Responsive Budgeting in Morocco: Some Observations', Working Papers id:771, eSocialSciences.

Sawer, M. (2002). Australia: The Mandarin Approach to Gender Budgets. *Gender Budget Make More Cents: Country Studies and Good Practice.* D. Budlender and G. Hewitt, Commonwealth Secretariat, London.

Stotsky, J (2006), Gender Budgeting, IMF Working Paper, Washington DC.

United Nations Statistical Division (1993): *Systems of National Accounts 1993*, United Nations, New York.

United Nations Development Programme (1995): "*Human Development Report*", Oxford University Press, New York

UN Women (2012), Gender Budgeting: Evaluation Report, New Delhi.

UNDP (2011), Asia-Pacific Human Development Report 2011, UNDP.

[i] For the conceptual and empirical analysis of gender budgeting including India, refer Elson (1995), Elson and Cagatay (2000), Stotsky, J (2006), Lahiri, A et al (2000, 2001, 2000a,b, 2002), Rao and Chakraborty (2006), Chakraborty and Bagchi (2007), Chakraborty (2002,2003, 2005, 2006, 2007, 2009, 2011).