

**DRAFT BACKGROUND PAPER
TOWARDS A RESEARCH PROJECT PROPOSAL
(PLEASE DO NOT QUOTE)**

**GENDER-AWARE MODELING IN
MACROECONOMIC ANALYSIS :**

A RESEARCH PROJECT

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GENDER AWARE MODELING IN MACROECONOMIC ANALYSIS

A RESEARCH PROGRAM

I. Introduction

In the last decades, a substantial amount of research has been undertaken to explain and document differences in the socio-economic status between men and women, both in developing and developed countries. Under the auspices of the United Nations, many governments committed to making progress in eliminating discrimination against women, including aspects manifested within the realm of the economy.

In order to document the progress made (or lack of), new conceptual ideas and tools were developed and the need was identified for a data collection process that was gender-sensitive. Thus came the great push forward that led to data gathering methodologies that made transparent, and allowed tracking of, existing differences between girls and boys, women and men at the national level. Gender-aware analytical tools and gender-sensitive data proved to be imperative for sound economic analysis, for monitoring and for policy formulation within the areas of education, market and non-market labor participation and poverty alleviation. Progress made notwithstanding, one of the criticisms leveled against gender-aware economists today, is lack of sufficient empirical analysis at the macroeconomic level; the claim is that analysis linking gender-aware micro-level analysis to *macroeconomic* analysis is insufficient.

Though a lot of work remains to be done, it is our belief that, partly, the above impression is due to lack of dissemination of existing analytical and empirical tools and methodologies that are most appropriate in making transparent the gendered nature of the economy. For example, the 1995 and 2000 *World Development* special issues on "Gender, Macroeconomics and Globalisation" and "Gender, Adjustment and Macroeconomics" (Cagatay, Elson, and Grown) have proposed useful analytical ways of en-gendering macroeconomic models¹. Efforts to include gender as an analytical category in applied macro-modelling have been also promoted within the Micro Impacts of Macroeconomic Policies Program, supported by the International Development Research Centre (IDRC). We are indeed encouraged by the evidence from studies using gender-aware models as they suggest that better predictive results can be obtained with engendered data².

¹ Three main approaches were presented: the 'gender disaggregation' method, which makes use of the possibility that men and women may exhibit different behavior in terms of investment, consumption, etc; the 'gendered macroeconomic variable' method, which introduces gender inequality, for instance, in labour markets; and the 'two sector/system' method, which introduces the unpaid reproductive economy alongside the paid one. While these models make important contributions analytically, included in the 2000 issue are two gendered computable general equilibrium models, which are "applied" and can make use of empirical data. (Arndt and Tarp, 2000 and Fontana and Wood, 2000).

² See for example M. Fontana and A. Wood, "Modeling the effects of trade on women, at work and at home", *World Development*, vol. 28, No. 7, pp. 1173-1190, C.Arndt and F.Tarp, "Agricultural Technology, Risk, and Gender: A CGE Analysis of Mozambique," *World Development*, vol 28 No. 7, I. Fofana, J. Cokburn, and B. Decaluwe. 2003. "Developing Country Superwomen: Impacts of Trade

In what we propose below, we envision to continue on this path and to engage in exercises investigating economic growth, trade, development and functional distribution from a gender aware perspective, at both the analytical and the empirical level, and in a manner that (a) links the micro and macro levels (b) posits the Household sector as a unit of production (c) disaggregates Labour into its paid formal, paid informal and unpaid components.

II. Background on the Formulation of this Proposal

Recently, members of the International Working Group on Gender, Macroeconomics and International Economics (GEM-IWG), recognized that those working on feminist macroeconomics and international economics remained limited in number. To contribute toward addressing this urgent need for further capacity building and knowledge networking in the area of mainstreaming gender into macroeconomic and international economics analysis, IWG-GEM initiated a program in 2003 on “Knowledge Networking and Capacity Building on Gender, Macroeconomics and International Economics”³.

In bringing economists together from around the world, the program is witnessing the creation of new research agendas, regional and international networks and working groups that address issues deemed important by the participants themselves. As a result several initiatives involving IWG-GEM alumni and instructors are now underway in Latin America, Central Asia, Africa and Asia.

This present proposal is written in this spirit; it is initiated by fellows and instructors that have participated in the “Knowledge Networking and Capacity Building on Gender, Macroeconomics and International Economics” program, during the 2003-2005 cycles. Alumni who have declared a strong interest will be invited to participate in various stages of this project. Senior members of IWG-GEM will act as an advisory group, and will be invited to participate and contribute to all stages of this project. Finally, it is envisioned that the country level research component of this project will involve IWG-GEM alumni as well as economists of participating project countries drawn from academia, research centers and statistical agencies.

III. Methodology

We believe, in this context, that empirical investigations which incorporate the *unpaid economy, including the unpaid care economy, in its production capacity* provide very useful analytical frameworks and render academic research gender-aware. Specifically, gender-aware academic research and policy-oriented discussions would benefit from four types of analytical-empirical tools: Time Use Studies (TUS), Economic Deprivation/Well-being Modelling, Social Accounting Matrix (SAM) analysis and Computable General Equilibrium models (CGE). In the proposed

Liberalization on Female Market and Domestic Work,” Mimeo, available on MIMAP website.

³ With the generous support of the Ford Foundation, the International Development Research Centre (IDRC) and the United Nations Department for Economic and Social Affairs, Division for the Advancement of Women, the program was hosted at the Department of Economics of the University of Utah, in two consecutive years, May of 2003 and June of 2004.

research program outlined below, SAM modelling, the alternative Economic Deprivation/Well-being and CGE will draw upon and develop existing work. The next section discusses each of the four promising (gender-aware) tools.

We anticipate the program to be based on a variety of partnerships and cooperative arrangements with research institutions in the South and the North as well as with various informal networks, United Nations agencies working on gender mainstreaming and donor organizations. After the completion of the program we hope the materials and the research developed to be made available to the public via print and the Internet in a format suitable for those who wish to undertake study, research and advocacy on these themes.

IV. Summary of Overall Objectives: Research and Capacity Building on Gender-Aware Macroeconomic Modeling

We envision this program to:

- Engage the Macro-Modeling community to highlight the importance of incorporating gender issues in macro-models and to demonstrate the possible application of gender aware models
- Contribute to the formulation of gender-equitable macroeconomic policies and international economics policies at the national, regional and international levels
- Further promote gender aware capacity building in National Statistical Offices, by highlighting the importance of TU data collection and gender disaggregated datasets. This is of particular importance since many of these exercises are costly and require help from central statistical offices
- Give analytical support to Civil Society Organizations in their advocacy efforts to promote gender equality

This project will bring together and explore the synergy of three distinct groups who possess complementary skills and impact potential:

- (a) Gender-aware economists with expertise in *technical* aspects of economic modeling
- b) Economists whose pioneering work at the *analytical* level rests at the core of gender-aware macroeconomics and mainstreaming efforts, and
- (c) Economists and practitioners already working on some aspect of gender who wish to move into research on gender and macroeconomics, including modeling

V. Activities, Outcomes and Outputs

It is proposed that the synergies between the three groups are marshaled through

- (a) research workshops
- (b) a conference
- (c) dissemination materials

We envision these activities to rotate among three Research Institutes, the Centre For Development Alternatives, India, and the Kenya Institute for Public Policy (KIPPRA), Kenya and the Levy Economics Institute, USA.

VI. General Discussion on Gender-Aware Economics and (A) Time Use Studies, (B) Economic Well Being and (C) Social Accounting Matrix and CGE analyses

In this section we discuss the importance of each of the four analytical tools this program intends to explore

Gender Aware Analysis

Gender Aware Analysis has enriched Macroeconomic inquiry in two interrelated but distinct ways. First, gender aware economists have engaged in research that has been instrumental in assessing the differential impact of economic development and policy changes on men and women. Such differentiated impacts are often based on the distinct labor activities women and men engage in within and outside the marketized part of the economy, as well as on political and socio-cultural specificities that affect gender roles. This type of gender awareness has been critical in shaping policies that attempt to address needs of vulnerable sub-populations such as women, the poor, the elderly etc. But also, it has helped in making explicit special advantages (or pitfalls) a policy may face in its implementation if it ignores gender as, for instance, the “*good mother*”⁴ thesis and micro-lending studies have shown.

Secondly, and equally importantly, by enabling the household care economy to be seen as a site of *production* (in addition to consumption), gender-aware economists have created a distinct vision of what the economy *itself* consists of. Accordingly, the household care economy contributes to any economic structure as it expands the available pool of necessities human beings rely upon for their social reproduction. Accepting such a vision of the economy implies that when one investigates the repercussions of economic development and/or of changes in fiscal, monetary, international trade and financial sector policies, the household *production* sector should not be viewed as an add-on afterthought but rather as a fundamental building block. Gender aware visions of the economy insist that studying the economy entails specifying the processes that take place not only within the marketized part of the economy and the government sector but also within the household sector. Modeling the impact of economic changes on the Macroeconomy must then *always* keep track of processes that occur in all sectors and the linkages/interactions among them, including the household sector⁵.

The four modeling tools we discuss below are gender aware in that they place the household care economy within the bounds of the Macroeconomy but also they enable us to better tackle impact analysis.

(A) GENDER-AWARE ANALYSIS AND TIME USE STUDIES

Time Use Studies Improve our Understanding of the Macro Economy

⁴ This is the idea that in alleviating child poverty, supplements are more efficiently spent on young children if given directly to the female that tends to them instead of the male head of household as exemplified by social policy measures in England.

⁵ *World Development*, special issue on Gender, Adjustment and December 1995 and *World Development*, special issue on Growth, Trade, Finance and Gender Inequalities, July 2000.

Though time use studies were first used in the earlier years of the twentieth century as a means of understanding the life style of people, over the years they have emerged as an important tool for (1) measuring unpaid domestic and voluntary work of men and women, (2) measuring paid (i.e. economic) work of men and women in the informal sector including the household sector and (3) getting a comprehensive picture of the activities of men and women in economic and non-economic (falling within the General Production Boundary) spheres and in personal services. Time use data are thus seen as an important part of many national statistical systems.

Time Use Studies and Gender based Inequalities

In the second part of the twentieth century, and particularly during the last few decades of the century, a need was felt to measure “invisible” unpaid work of men and mainly women and to estimate the contribution of unpaid work to human welfare. The need was first expressed by some feminist groups in industrialized countries in the North, which, then, used time use surveys to measure this invisible unpaid work. That is, time use surveys emerged as a tool of projecting the uneven distribution of total (paid and unpaid) work between men and women in an economy.

The developing countries, however, saw that time use surveys can also throw useful light not only on the “unpaid work” (i.e. the work that falls within the General Production Boundary but outside the Production Boundary of the Systems of National Accounts), but also on the paid work or economic work. The latter, is frequently not well recorded in these countries due to certain conceptual and methodological limitations of conventional data collection systems. It was felt that time use surveys, which collect data on how people spend their time, could help in overcoming the conceptual and methodological problems if (a) the time use information is collected carefully and (b) it is analyzed systematically using a good classification of time use activities. This new use of time use surveys for estimating and understanding the characteristics of workforce engaged in economic work is now seen as relevant to industrialized countries also. This is because the labour markets in these countries, under increasing flexibilization, have a variety of production organizations with a wide range of work time arrangements (WTA) that cannot be captured through conventional surveys. Since women predominate as flexible labour, i.e. as part time workers, home based workers, casual and temporary workers, time use surveys are extremely relevant to understand gender differences in labour market status of workers.

And recently, time use surveys have also been recognized as a tool that provides comprehensive information on human life. Human activities can be broadly divided into three categories, namely, economic activities, i.e. the activities falling within the Production Boundary of the UN System of National Accounts (UN-SNA), unpaid activities falling outside the Production Boundary but within the General Production Boundary, i.e. mainly domestic services, voluntary services etc, and personal care and leisure activities like sleeping, watching TV etc. which cannot be delegated to others. Though all the three categories of activities contribute to human well-being and though national policies impact on all the categories of activities, many national statistical offices still collect data only on the first category of activities, and national policies are formulated and monitored using this partial picture. This approach of using a partial picture for formulating policies that affect the entire economy or society does not seem to be appropriate; and since unpaid activities are performed

predominantly by women, it undermines women's interests. Time use survey technique is therefore needed to get a comprehensive picture of the activities of men and women.

Understanding the Impact of Globalization on Men and Women

One major area of concern in the current phase of globalization is about the impact of economic reforms on vulnerable groups of people, like the poor, women, children etc. Several studies have been conducted by scholars to examine the impact of the different economic reforms on these groups. A limitation of many such studies, however, has been their partial coverage of the economy: These studies have focused on economic activities covered by the national income accounts, but excluded unpaid activities, which contribute significantly to human well being and which appear to be highly sensitive to macro economic policies. Somehow this impact on unpaid activities is neither studied nor used adequately in formulation and monitoring of macro economic policies. Time use studies are needed to examine the comprehensive impact of globalization on paid and unpaid activities of men and women.

Time use Studies Improve Estimates of Macro Variables

Information on how people spend their time on the different paid and unpaid activities can be used in getting improved estimates of some macro variables, which in turn can also be useful in macroeconomic modeling. The macro variables are (1) workforce estimates, (2) national income estimates, (3) Valuation of "Unpaid" Work and (4) national time accounts

Improving Workforce Estimates: Workforce, particularly in developing economies, is underestimated in "difficult to measure sectors" like subsistence sector, home-based work, home work and other informal sector activities as (1) the nature of work in these activities gets mixed with household work and it is not always easy to distinguish between the two, (2) informal sector units are small/tiny, temporary, scattered and uncertain, (3) workers, mainly women workers, frequently suffer from socio-cultural biases which prevent them from reporting their economic work correctly, (4) investigators also frequently suffer from socio-cultural biases which prevent them from reporting women's work accurately and (5) work in the subsistence sector is many times not reported adequately as conventional surveys fail to report this work accurately. Time use surveys can get over these difficulties if these are organized well. In India, for example, the time use survey based workforce estimates have proved to be more accurate.

Improving National Income Estimates: There are three major sectors / sub sectors, which are underestimated or not estimated in national income estimates: (1) informal economy, (2) production for self consumption, i.e. subsistence economy and (3) underground or illegal economy. The main reason for this non/under estimation is the lack of adequate statistics. *Contribution of informal sector activities* is frequently compiled by multiplying the number of workers in each of the activities with its average production, (which is calculated by conducting special surveys). The total contribution of each of the activities is then added up to arrive at the total contribution of the informal sector to the national GDP. Time use surveys are useful in improving these data as they can provide better estimates of workers for the different informal sector activities. *Contribution of Subsistence Sector to national income* also can be improved by using time use data. The production boundary for the purpose of

estimating National Accounts (UN-SNA) was expanded in 1993 to cover several non-marketed production for own consumption. It is difficult to estimate the production for self consumption, through conventional surveys, as frequently these activities get mixed with unpaid domestic services and conventional surveys find it difficult to collect data on how many persons spend time on subsistence activities and how much do they produce for self consumption etc. Time use surveys is a suitable survey for collection of these data as they collect comprehensive information on how people spend their time on difficult activities and how much do they produce (collected through the suitable context variables).

Valuation of Unpaid Work / Satellite Accounts: Unpaid domestic services are outside the purview of national income according to the 1993 UN-SNA. However, these services contribute to human well being in several ways. Since women are predominant in these services, it is important to estimate their contribution to the total welfare of the economy. That is, valuation of unpaid domestic services is essential for making visible women's contribution to total welfare. However, there are several conceptual and methodological problems in this valuation: (1) many domestic services do not have market prices available for valuation, as these activities are never marketed, (2) domestic services are performed in non-competitive non-market environment and therefore it is not valid to use market prices to value these activities (3) the concept of time in the unpaid domestic sector is elastic, as the same work can be done in different time periods. In spite of these problems, attempts have been made to value these activities, using the following approaches:

- Input Method: According to this method the time input in domestic services is valued by multiplying it with an appropriate wage rate. These kinds of wages are used: specialized wage rate, generalized wage rate and opportunity cost. This approach has several limitations, as it ignores the role of capital in the production.
- Output Method: According to this method, domestic services are presented in output terms (for example, so many meals prepared, so many clothes washed etc.) so as to compute its value by multiplying its number with the market prices. This approach also has several limitations, as not all domestic services can be converted into output. Also, the value of output needs to be expressed in terms of value added.
- Households Input/Output Tables or National Accounts of Household Economy: This is essentially an extension of SNA to include unpaid household productive activities of men and women in a system of "household" accounts, which will be separate from, but consistent with, the main accounts. That is, these will be presented in Satellite Accounts.

National Time Accounts: National Time Accounts are essentially income and expenditure accounts of time, similar to the estimates of national income and expenditure that account for market transactions in monetary terms. The accounts present how households allocate time between paid work, unpaid work and leisure according to the standard categories of industrial activities (for paid work), and standard categories of household production and leisure. A system of national time accounts would provide a basis for international comparisons and for greatly

improved modeling of over economic and social systems. Regular national time accounts present a more complete perspective and understanding of the role of household in the total economy, productive activities and leisure activities, and the interaction between the household and the market. So far countries like Netherlands, Canada, Australia etc. have compiled National Time Accounts.

Time Use Studies for Economic Well-being Analysis and Social Accounting Matrix Analysis

Better understanding of the macro economy acquired through time use data will also provide important inputs in macro modeling. Since these uses are discussed at length in the previous section and the one that follows, it will be sufficient to state here that the time use inputs will improve the present understanding and the present data base of economic well-being and social accounting significantly, particularly from a gender point of view. This improved database will help in engendering modeling in macroeconomics.

Time Use Surveys: Concepts and Methodologies

The concepts and methods of conducting time use surveys are still not well established at the global level. Industrialized countries, which have been using time use surveys for a few decades now, have not yet used the data adequately for engendering macroeconomics and macro policies. The developing countries, most of which have conducted their first time use survey only recently, are too new to tap the potential of the data for understanding and analyzing macroeconomics. In short, both developed and developing economies have to go a long way in using time use data meaningfully and effectively for designing and monitoring macro policies and for engendering macroeconomics and international economies.

One observes therefore a variety of concepts and methods used in conducting time use surveys. The variations are observed particularly in (1) objectives, (2) nature of the surveys (i.e. independent survey or attached to other major survey), (3) background schedule, (4) methods of time use data collections, (5) context variables, (6) classification of activities and (7) data analysis and use. Some work has been initiated by the UN Statistical Division, ILO, IATUR (International Association of Time Use Research) etc. to standardize these concepts and methods. It will be useful to survey the literature carefully and further the process of harmonization of concepts and methods at the global level.

To sum up, the time use component of the present program on Gender Aware Modeling in Macro Economics and International Economics is an important component as it throws light on the dynamics of a macro economy on the one hand and provides inputs to the analysis of Economic Well-being and Social Accounting Matrix on the other hand. Since the methodology of time use studies as well as the use of the data need to develop further, the present program will focus on both of these aspects.

(B) GENDER-AWARE ANALYSIS AND ECONOMIC WELL-BEING

Gender Aware Analysis

Gender Aware Analysis has enriched Macroeconomic inquiry in two interrelated but separate ways. First, gender aware economists have engaged in research that has been

instrumental in assessing the differential impact of economic development and policy changes on men and women. Such differentiated impacts are often based on the distinct labor activities women and men engage in within and outside the marketized part of the economy, as well as on political and socio-cultural specificities that affect gender roles. This type of gender awareness has been critical in shaping policies that attempt to address needs of vulnerable sub-populations such as women, the poor, the elderly etc. But also, it has helped in making explicit special advantages (or pitfalls) a policy may face in its implementation if it ignores gender as, for instance, the “*good mother*”⁶ thesis and micro-lending studies have shown.

Secondly, and equally importantly, by enabling the household care economy to be seen as a site of *production* (in addition to consumption), gender-aware economists have created a distinct vision of what the economy *itself* consists of. Accordingly, the household care economy contributes to any economic structure as it expands the available pool of necessities human beings rely upon for their social reproduction. Accepting such a vision of the economy implies that when one investigates the repercussions of economic development and/or of changes in fiscal, monetary, international trade and financial sector policies, the household *production* sector should not be viewed as an add-on afterthought but rather as a fundamental building block. Gender aware visions of the economy insist that studying the economy entails specifying the processes that take place not only within the marketized part of the economy and the government sector but also within the household sector. Modeling the impact of economic changes on the Macroeconomy must then *always* keep track of processes that occur in all sectors and the linkages/interactions among them, including the household sector⁷.

The three modeling tools we discuss below are gender aware in that they place the household care economy within the bounds of the Macroeconomy but also they enable us to better tackle impact analysis.

Economic Well Being: Evaluating the Impact of Economic Changes and Globalization on Men and Women

Numerous studies have pondered the impacts of economic development in the context of globalization, and distinct -at times quite contradictory- pronouncements have been advanced. The criteria employed vary but there is widespread agreement that “improvement” in the economy must eventually be reflected in progress made in the economic well being of members of that society. At the aggregate level, Gross Domestic Product per person, notwithstanding the criticisms leveled against it, still serves as the measuring rod most commonly used to-date even in more complex indicators, such as the Human Development Index. Correspondingly, at the household level, Gross Money Income appears time and again as the representation of access and command of goods and services individual families have.

⁶ This is the idea that in alleviating child poverty, supplements are more efficiently spent on young children if given directly to the female that tends to them instead of the male head of household as exemplified by social policy measures in England.

⁷ *World Development*, special issue on Gender, Adjustment and December 1995 and *World Development*, special issue on Growth, Trade, Finance and Gender Inequalities, July 2000.

We propose that assessing the impact of economic development on households in general, and on women and men in particular, requires a different measure, that of Economic Well Being. Engaging in research in this area will create transparency in the workings of the economy by shedding light on the channels through which people are affected as various economic policy changes have been instituted. Measures of money income per person obscure precisely what needs to be made explicit and hide key aspects of economic activity that influence people's survival. But transparency is, in our view, precisely what is needed for effective economic analysis and targeted policy recommendations.

Household Economic Well-being

The term "household economic well-being" refers to the command or access the members of a household have, during a given period of time, over the goods and services available, i.e., produced in an economy (Wolff and Zacharias 2003)⁸. Formulation of social and economic policies aimed at enhancing economic development as well as impact assessment of such policies, ultimately, should be informed by measures of household economic well-being. Depending on the specific challenges a country faces, of special interest may be the impact on a targeted part of the population that is particularly vulnerable such as the poor, women and children, racial or ethnic minorities, the elderly etc. The most widely used official measure of the level and distribution of economic well-being, is Gross Money Income. This yardstick, from a gender perspective is an incomplete measure on three grounds:(a) it is not the case that members of the household consume exclusively goods found in the marketized part of the economy (b) households do not exercise command over all commodities they consume by means of money and (c) individual members of the household do not have equal access nor do they exercise equitable command over goods available to the household nor do they experience time stress in identical ways.

Gross Money Income is associated with marketized activities and cash transfers from the government. As mentioned earlier, from a gender aware perspective production and consumption activities take place within interconnected sites of the economy, namely, the market sector, the household sector, the government sector. As a consequence, many goods and services are produced, and command is exercised, within the bounds of the household care economy (childcare, cooking, cleaning etc.). But also, many non cash benefits -as well as other forms of government provisioning- in the areas of education, public health etc need fall outside the market sector as such. Additionally, especially in developed countries, a well-known and important issue is that of employer contributions for health insurance for a large proportion of employees. Finally, wealth is generally recognized as an independent and key determinant of economic well-being; yet, the relevant component of gross money income, property income (dividends, interest and rent), is an incomplete measure of the economic empowerment and advantages derived from asset ownership.

⁸ This present use of the term economic well being does not attempt to include subjective evaluations of "happiness", "satisfaction" or "utility" levels. These questions are very interesting in their own right, but it is our view that much work remains pertaining to the availability and access the majority of the world population has on necessities before we move on to an investigation of happiness differentials such access yields on sub-segments of the population.

An Alternative Measure of Economic Well Being

The argument that gross money income is inadequate as a measure of economic well-being for the reasons outlined above is hardly novel. In fact, there exists a substantial body of research which has attempted to include, in addition to money income, one or the other elements mentioned to arrive at a more complete measure of income. But there exists only one measure to our knowledge, the Levy Institute Measure of Economic Well-Being (LIMEW) whose analytical framework is inclusive of all the above concerns, in accordance to our gender-aware framework. While previous research has typically attempted to include the effect of one element or the other in isolation, the LIMEW integrates all of them simultaneously into a comprehensive measure.

Specifically, the LIMEW is constructed⁹ as the sum of the following components: base money income, value of household production, income from wealth and net government contributions. Income from wealth is estimated using imputed rental cost for homes and a variant of the lifetime annuity method for non-home wealth. The replacement cost approach, with some modification, is used to value the time spent on housework by adult household members. Net government expenditure is calculated using the government-cost approach. All these components, it can be argued, may be very different for men and women to begin with; but also it is worth examining how they change as a result of economic policy shifts through gender sensitive analysis (government budgets, wealth accounts, household production and time stress, employment and money income dynamics)

Methodology: The general approach we intend to adopt in the present study is best described as a social accounting method (Hicks 1946). Our aim is to account for the transactions that occur between the government sector, the household sector and the market sector each of which results in goods and services made available to household members, during a given accounting period, in an ex post fashion. In performing this accounting, the guiding principle as mentioned above will be a concept of household economic well-being as described above, where the household sector will be in-putted by the outcome of our Time-Use component of the program while the disaggregation methodology employed in this section of the program will benefit the ensuing SAM analysis part of the program.

As is inevitable in this kind of an effort, a number of judgment calls will need to be made about the components of the measure and estimation procedures used. This will be done collectively. Data availability for participating countries will be investigated and rigorous sensitivity analyses to test a number of the key assumptions will be conducted. Besides assessment papers, we believe it is of paramount importance to create the analytical methodology that when used can shed light of the question of “improvement” versus “deterioration” in women’s and men’s lives.

⁹ The LIMEW, which has been developed until now for the case of the United States, is built using information from the public-use data files developed by the U.S. Census Bureau from the Current Population Survey’s Annual Demographic Supplement (ADS). Information on wealth and time spent on housework are generated via statistical matching of the ADS files with, respectively, the Federal Reserve surveys on household wealth and national surveys on time-use. Information from National Income and Product Accounts, government agencies, and the ADS itself are used to arrive at estimates of different components of net government expenditure. Publications can be found at www.levy.org

Policy Applications: These can be summarized in the following main points:

- A complete measure of economic well-being should include, in addition to command over commodities, access to goods and services available to the households via household production and public provisioning. Our methodology leads to such a measure. Disparities along the lines of social class, gender, cast, race, family type, occupational categories and geography can be studied in a much more comprehensive manner than standard official measures allow.
- Official measures, such as gross money income are meant to reflect the household's command over commodities. Using the components of our measure, we would be able to evaluate whether they reflect appropriately the level of, and growth in such command. We would also be able to evaluate whether official measures understate the level of inequality in the distribution of command over commodities according to the social categories mentioned above
- Wealth inequality contributes a great deal to economic inequality. Rising concentration of financial wealth, in the current phase of globalization, has greatly increased economic inequality. The information base constructed for our measure, based on LIMEW methodology, would help in the formulation and evaluation of policies to promote net worth among those mired in debt or without assets, and reasonably tax high amounts of financial wealth. We believe that such policies are needed to mitigate the socially undesirable effects of wealth inequality. In establishing the relevance of wealth inequality as a key determinant of economic well being in those countries that have collected data on household wealth, this study will help promote advocacy within National Statistical Collection Agencies to establish collection of wealth data in the near future.
- Government spending on behalf of households (transfers and public consumption) and taxation play an important progressive role by reducing inequality. However, we are living in a time when the accomplishments of popular legislation and struggles that brought about the progressive spending-tax structure appear to be under serious threat. Pro-rich tax cuts, scaling down of major discretionary transfer programs, and the recent shifting of budgetary priorities worldwide in favor of military and "homeland security" programs, and cutbacks in social expenditures by the state and local governments might substantially reduce the redistributive power of government spending and taxation. Our measure allows a rigorous evaluation of the trends unfolding in this crucial area. In contrast to standard approaches that take into account only some taxes (e.g. income taxes) and some types of government expenditures (e.g. cash transfers) into account, the measure we will use is based on a comprehensive accounting of all government expenditures incurred on behalf of households and all taxes paid by the households.

While detailed information of relatively high quality exists on the hours worked for pay, it is harder to find information on hours spent on household production activities and informal labor activities along with the rich information on the economic, social

and demographic characteristics of those who do the work. The information base constructed for the LIMEW would allow us to answer questions such as: Has progress in economic well-being come at the expense of time for leisure and other life enriching activities? How has such possible loss in time affected those of different economic and social backgrounds? The LIMEW methodology, which we intend to adopt can inform discussions on the type of tax and income policies, and regulations the government can adopt to actively encourage workplace arrangements that reduce the extent to which workers have to make the painful trade-off between having sufficient time for oneself, one's family and community on the one hand, and income on the other.

(C) Gender-Aware Economics and Social Accounting Matrix Analysis

Introduction

A Social Accounting Matrix, SAM, is a snapshot of the economy at a point in time. A SAM captures transactions in the economy—both income and expenditure—like double-entry accounting but the SAM contains much more than just the macro aggregates. A SAM, though similar to a standard input-output model which systematically captures production relationships, has the added advantage of capturing income distribution and consumption relationships within the economy in an internally consistent manner.

In the standard representation, a SAM is composed of six types of accounts: activities, commodities, factors of production (labour and capital), institutions (households firms and government), capital account and the rest of the world, (Sadoulet and de Janvry 1995). The usefulness of a SAM depends on the level of disaggregation which aims at isolating target groups (labour and households) in the interrelationships for policy action. Thus stated a SAM is a numerical representation of the national accounting with detailed distributional aspects, showing how sectoral value added would accrue to various factors of production and their institutional owners, and how these incomes are spent.

A SAM can serve three purposes; a snapshot of an economy at a point in time showing production and income distribution and economic relationships between different sectors and actors of the economy; a SAM can also be used as an internally consistent linear income determination model; and it can also serve as data set for economic modeling—a SAM is the benchmark data set for computable general equilibrium models. As a linear income determination model a SAM can be used to answer questions of income distribution between different groups as a result of the structure of production, through backward and forward linkages or multiplier analysis.

This part of the program will have two broad objectives. The immediate one, and the main focus therefore, is to engender the standard SAM by disaggregating labour by gender and skill level and, using the findings from the TUS, to incorporate the reproductive sector into an extended SAM with satellite accounts as well as the insights gained from the social accounting matrix approach used in the construction of the LIMEW. At a later stage, to use the SAMs thus constructed to develop appropriate gendered models for respective economies. As a starting point, the simple analytically tractable linear models (SAM multipliers) will be used to develop a deeper understanding of the gendered impact of external injections (for instance government

expenditure). This analysis is a useful starting point for designing appropriate policy interventions. However, the program hopes to expand in the future and to engage in the development of more complex gender aware models. In the following section we expound on the three aspects of the SAM component of the proposed program; engendering the SAM, using the SAM as a Linear Model and using the engendered SAM as a benchmark data set to engender CGE models.

Engendering SAMS

The classification of households is important in the construction of a SAM. Household classification by social economic characteristics brings out the distinctive economic and social roles, behaviors, options and inclinations of different sections of society e.g., women or more specifically poor women. The classifications of households could vary from one country to the other, as this would depend on the structure of the economy under consideration. Duchin (1998) states that in a developing country most households operate within an informal economy and in many instances their number increases with modernization. Therefore, it becomes important to study how such households are interlinked with the overall economy and the process of growth. Their behavior, in relation to consumption, tax, savings and credit demand is likely to be different from households that earn income mainly from the formal sector.

The gender information should be addressed by including gender-distinguished statistics at whichever level it is possible. First let us consider a standard conventional SAM structure. The standard SAM is composed of five major accounts: production, factors, institutions, capital and rest of the world (ROW). The production account is composed of two parts: the activities and the commodities. The distinction between production activity and commodity accounts enables correct treatment of joint production and by-products. The activity shows that various commodities are made by means of a number of quite distinct technologies, which coexist in the economy. On the other hand, the commodity account explains the production of a major commodity by an industry along with the industry's by-products. The institutions are classified into households, private corporate sector, public non-departmental enterprises, and government. Indirect tax account is separated from the government account in order to simplify the presentation of the detailed structure of taxes.

A SAM can be extended to allow for a greater level of detail at the production sector level and household sector. The disaggregation of sectoral production by factor type, for example male and female labour, provides useful insights into the gendered structure of the labour market. The valuation of unpaid care and household work to quantify the contribution and linkages with the rest of the economy allow one to develop a more gender-aware structure to economic relationships in the economy and allow one to extend SAMs through satellite accounts. At this detailed level SAM construction is skill and data intensive and to date only a few countries have such SAMs.

It is envisioned that the capacity building component will bridge the skills gap and further that the TUS research conducted will provide the gendered statistics for the appropriate disaggregation and construction gendered SAMs.

A Gendered SAM as a Liner Income Model (Multiplier Analysis)

A gendered SAM provides deeper insights into the gendered roles of men and women in the generation and distribution of income and the interactions between households and the market economy to allow for better understanding and design of appropriate policies (Fontana 2004). Such an analysis is possible through a SAM multiplier analysis.

SAM multiplier analysis is concerned with the relationship between production, factor demands and income distribution. SAM multiplier analysis falls into the class of linear models similar to input-output models. However, the analysis extends beyond input-output relationships to distribution of factor incomes determined by household endowment. The multiplier analysis reveals the accounts in the economy with greater capacity to generate expansion on the overall economic system. For a gendered analysis therefore, the objective would be to determine the accounts which have the highest impact on targeted socioeconomic groups disaggregated by gender, or the gender intensiveness of each sector.

From this class of linear models it is possible to measure the economic impact of a change in the economic surroundings of a given factor as a result of a change in policy or an external shock. A SAM is one way of utilizing national accounts data taking into account linkages in the economic system, to undertake economic analysis. However, for the multiplier process to take place without increase in prices, the economy has to have excess labour and underutilized productive capacity, which are common in most developing countries.

The classification is presented below in a simplified schematic table adopted from Thorbecke and Jung (1994). The table below presents the SAM accounts presented in the prototype SAM.

Table 1 SAM Model Accounts

		Expenditur					
		Endogenous			Exogenous	Total	
		Factors (1)	Institution (HH & (2)	Productive Activitie (3)	Gov, ROW capital	\hat{Y}_i (5)	
In co m	Factors	0	0	T_{13}	X_1	Y_1	
	Institutions & firms)	T_{21}	T_{22}	0	X_2	Y_2	
	Productio Activities	0	T_{32}	T_{33}	X_3	Y_3	
	Exogenous						
	Gov, ROW capital	I_1	I_2	I_3	t	Y_x	
Totals		Y_1	Y_2	Y_3	Y_x		

These relationships can be captured in a simple static model; the exogenous accounts x_i s determine the income y_i s of the endogenous accounts.

From the possible extensions discussed in the previous section, the prototype SAM can be extended to include the reproductive sector and analyze the linkages between this critical sector and the rest of the economy through multiplier analysis. This is envisaged as the second continuing phase of the program.

A Possible future Extension of the Program

Several approaches exist for constructing gender aware models which involve the disaggregation of macroeconomic variables by gender or variables that capture gender relations (Fontana 2004). Gendered computable general equilibrium models fall in this broad category. CGE models can be used to inform policy from a gender perspective at a highly disaggregated sector level unlike other macroeconomic models, which is possible from the degree of disaggregation in the SAM.

Arndt and Tarp (2000) and Fontana and Wood (2000) have used gendered CGE models to demonstrate the gendered impact of various macroeconomic and trade policies in Zambia, Bangladesh and Mozambique. These models are gendered in the sense that the SAMs on which the models are calibrated have labour disaggregated by gender and skill level. Further the SAM used by Fontana and Wood (2000) incorporates unpaid household work and accounts for leisure separately for men and women.

In addition, the greater institutional detail (especially by household characteristics and gender) captured in such models provide for more insightful policy simulations. For instance, the simulations of the Zambian economy demonstrated that gendered impact of a tariff reduction crucially depends on the female intensity in export sectors which might not be evident from a standard CGE model. Furthermore, the simulations also showed the importance of including household work and leisure as sectors of the economy.

The use of gendered CGE models has been limited due to lack of gendered SAMs on one hand and capacity constraints on the other. It is envisaged that the proposed program will be an attempt to close this gap, through the capacity building component and the generation of requisite data sets and indicators through the TUS research proposed.

It is envisioned that the gendered SAMs constructed as part of the three-phase program will provide a comprehensive framework for the construction of gendered models to inform policy at a deeper and more insightful level. Further, the broad regional participation in this program will allow for comparison across countries and across regions for appropriate policy interventions even after the program ends.

