5 Assigning economic value to unpaid care work

The previous section looked at measuring unpaid care work mainly from a statistical point of view. It looked at how we can find out how much work women and men, boys and girls and individuals in other social groupings do. This section looks at measuring unpaid care work through they eyes of an economist. It asks how we measure – or value – this type of work, so that it can be 'seen' by economists and considered in economic policy making. It also discusses why it is important that economists 'see' unpaid care work, and how it could be built into their models.

5.1 Assigning a wage

Economists measure things in money terms – in dollars, rands, meticais or pula. We therefore need some way to convert the time measurements obtained by methods described in the previous section into money measures. We do this by assigning an hourly 'wage' to the time spent. The levels to be used for these wages are taken from other surveys, such as the labour force survey which most countries conduct at regular intervals.

There are many different approaches to finding the correct wage to use in the calculations. These approaches can be grouped into four broad categories:

- the mean (average) wage approach;
- the opportunity cost approach;
- the generalist approach; and
- the specialist approach.

The mean wage approach

This approach calculates the mean wage in the economy as a whole and assigns this wage to each hour. Usually, the mean is calculated separately for male and female and the male value is assigned if a male performed the unpaid care work, while the female value is assigned if a female did so. This sex-disaggregated approach, in fact, lowers the overall estimated value of unpaid work. This happens because (a) women generally perform more unpaid work than men; and (b) the average female wage is usually lower than the average male wage.

The opportunity cost approach

This approach uses the economic concept of 'opportunity cost'. Opportunity costs are the benefit that someone loses by making one choice over another. In this case, the person loses the benefit of earnings that they would have earned in paid work if they had not done the unpaid care work. We therefore take their normal wage or income from paid work as the value of the opportunity cost.

There are theoretical problems with the opportunity cost approach. Because the approach uses the wage that the person would earn if they were working in their paid job, it uses different wages for the same activity when the work is performed by different people. This suggests that the time spent cooking a meal by a university graduate has more value than time spent cooking a meal by someone without formal schooling, even if that person is a better cook.

A second problem with the opportunity cost approach is what wage to use for people who are unemployed and so do not have a usual wage, as well as for those who work in subsistence agriculture where there is no wage. This is a serious problem in many countries in our region because of our relatively high unemployment rates and the relatively large number of people employed in subsistence agriculture.

The generalist approach

This approach uses the mean wage of workers performing similar work to the unpaid work. For housework, it could use the wage of paid domestic workers. For child care work it could use the wage of workers in creches.

The specialist approach

The specialist approach focuses on the activity rather than the person who does the activity. For each activity it uses the wage earned by paid workers

whose functions and circumstances match the unpaid care work concerned. For example, time spent on cooking activities could be valued at the wage of a paid chef or cook, while time spent on cleaning activities could be valued at the wage of a paid cleaner.

In most countries that have done the calculations, the opportunity cost approach gives the highest values, and the generalist approach gives the lowest values. The differences between the values from the different approaches will be particularly big where there are large inequalities in wages and salaries in the economy. This is the situation in many countries in Southern Africa.

5.2 Why bother to value unpaid care work

Lorna Bailie (1997:3) quotes a Canadian respondent to a time use survey who asked: 'What business is it of the government as to how I spend my time?' The first time use studies in Canada were justified on the basis of their ability to measure unpaid work for the system of national accounts. In the mid-1990s, policy makers realised that the surveys could also inform policy that would contribute to the country's three main goals of economic growth, human resource development and social cohesion (Bailie, 1997). A few questions on time use are now included in the Canadian census.

In this sub-section we explain why it is important for economists and policy makers to make unpaid care work their business.

In economists' terms, we can think of unpaid care work as a form of 'public good' that involves 'externalities'. An externality can be described as a 'third-party effect', where the people affected were not the original target of the 'production'. Positive externalities bring a benefit to other people because of the activity of an individual or enterprise which the people who benefit do not pay for. Negative externalities impose a cost on other people which the individual or enterprise who does the activity which results in the cost does not pay for.

Unpaid care work brings positive externalities for employers because the care and pre-school education of children and the feeding and care of the workforce improve the quality of the labour force. The 'cost' of this work in terms of time and effort is largely borne by women. The benefit is derived by the society more generally. The value of the labour force is partly covered by payment of wages. And it is partly covered by government when it pays for education and health services. But no payment is made to the people who perform the care work part of the 'production' of workers.

The BRIDGE glossary notes that valuation of unpaid care work 'would make such externalities visible in the national accounts.' (Alexander & Baden, 2002: 10) This is important because, although these goods appear to be free, they have an economic cost. The economic cost is that while women (or children, or men) are doing this work, they are prevented from doing other things. They are restricted in the other activities they undertake. They are also often restricted in where they can go, in that unpaid care work is often bound to a particular location. The things that did not get done because the unpaid work was done are the 'opportunity cost'.

Because there is no price tag for unpaid care work, and because society does not pay for it, policy makers often assume that there is a limitless supply – that they can have as much as they want. But there is a limit to unpaid labour. If the suppliers (mainly women) of unpaid labour are pushed too far, and if the burdens placed on them are too heavy, the quality and amount of care they can provide will deteriorate. As Palmer writes, when the 'use' of unpaid labour begins to affect its quantity or quality, it is no longer 'limitless gifts from the gods' (Palmer, 1997).

Some economists have recognised the externalities related to the environment. In some countries policy makers have imposed a cost on environmental negative externalities, for example by making factories which pollute pay to clean up the pollution.

Very few economists and policy makers have recognised the externalities associated with unpaid care work. In Palmer's word, 'reproduction of the population has been seen as a separate private choice, a family issue with no ramification for the main economy' (1997).

5.3 Putting unpaid care work into economic models

Once economists can 'see' unpaid care work, and have a value for it, they can use it in their models. To date, there is very little experience in inserting unpaid care work into economic models. However, Marzia Fontana and her colleagues have done some interesting work showing how this could be done with social accounting matrices (SAMs), which are one type of macro-economic model.

A social accounting matrix is a linked set of statistical tables which models the circular flow of income in the economy. The matrix includes activities and commodities (goods and services), factors of production (such as labour),

and certain institutions (such as government and households). These models allow economists to look at a number of direct and indirect effects simultaneously as a change in one part of the flow has an effect on other parts of the flow. Standard SAMS do not include gender-disaggregated data. But they could be disaggregated, just as many SAMs already disaggregate households by different income levels.

Fontana (2002) shows how a SAM can be used to investigate the gender impacts of international trade in Zambia. She takes the standard SAM for Zambia and adds four 'social reproduction' (i.e. unpaid care work) and four leisure sectors. She adds four of each type of sector because the standard Zambian SAM provides for four different types of household, and households cannot 'trade' unpaid care work and leisure between themselves because these activities are not marketised. Fontana also disaggregates earning from labour into eight groups – four female and four male, at different levels of education.

She demonstrates the use of the model by looking at the impact of a number of different policies and events: (a) the abolition of tariffs on manufactured imports; (b) non-traditional agricultural export promotion; and (c) a rise in the world price of copper. Her investigation thus includes policy that can be controlled by government as well as external factors that are not so easily controlled.

The table below shows the results of her experiment with increasing the export price of copper by 50%. The table is simplified so that there are urban/rural and income breakdowns (in italics) only for unpaid care work ('social reproduction' in the table). The full table gives a similar breakdown for leisure, and disaggregates the market into 12 sectors.

Each figure in the table shows the percentage change in employment for women with different levels of education caused by the higher export price. The table shows, for example, that employment of women in paid work (the market sectors) is likely to decrease if the export price of copper increases. The decrease is largest for women with secondary education. Unpaid care work will decrease slightly for urban women with secondary education. The biggest increases in unpaid care work will occur among rural women – especially those with no education. This example illustrates the importance of thinking about different types of women, rather than considering all women as a single category.

Percentage change in employment of higher export price of copper

	No education	Primary	Secondary	Post-secondary
Market sectors	-2.8	-1.1	-3.1	-1.5
Social reproduction	1.4	1.1	0.2	0.2
Urban high income	*0.5*	*0.2*	*-0.3*	*0.0*
Urban low income	*0.5*	*0.5*	*-0.1*	*0.2*
Rural high income	*1.2*	*1.0*	*0.6*	*0.9*
Rural low income	*1.5*	*1.3*	*0.8*	*1.2*
Leisure	2.7	2.0	1.1	0.6

Source: Fontana, 2002: 11

Fontana's experiment suggests that tariff abolition would cause smaller employment and wage gains for women than for men in Zambia. Incentives in non-traditional exports are more beneficial for women if they happen in horticulture and groundnuts than when they happen in tobacco and coffee. In terms of unpaid care work, when assets are reallocated from maize to female-intensive crops, women are more 'productive', but have less leisure time. On the other hand, a rise in the world price of copper results in better educated women getting more leisure time and better wages.

Fontana's conclusion is that 'when there is great rigidity in gender roles, as well as in market structures, the positive effects of better price incentives are likely to be small. It is thus important to design complementary policies to reduce the many competing demands on women's time and to enhance their ability to respond to economic reforms.' (2002: 26).

5.4 An example from Tanzania

Unfortunately, we cannot build a single macroeconomic model for use in all countries. If we want to advocate for gender to be inserted into macroeconomic models, we first need to find out more about the models currently being used by the government and other economic decisionmakers in our country. We also need to find out what data are available if we want to add elements to the existing model.

The following input was used in a workshop which the Tanzania Gender Networking Programme conducted for officials of the Ministry of Finance, Planning Commission and other economic agencies in the country. The focus of the session was how gender could be incorporated into their existing

economic models, MACMOD for macroeconomics and TAXMOD for tax. The session was entitled 'Opportunities and Challenges of Introducing Gender into MACMOD and TAXMOD':

We can consider two main approaches which we can use to integrate gender into MACMOD:

- *We can disaggregate existing elements of MACMOD*
- *We can add new elements to the model – in particular, we can add unpaid labour/ the care economy to the market economy elements.*

Making these additions will allow us to test the effects of different policies or external events and their impact on women and men.

Disaggregating existing elements of MACMOD

MACMOD, like many other macro-economic models, divides the economy into different sectors which pay for goods and services from each other. The sectors include households, a range of sectors in the private economy, government, and the rest of the world (to capture trade). The other sectors pay 'factor payments' to the household in the form of wages and salaries for their labour. We are proposing that we disaggregate these factor payments into payments to women and payments to men.

Disaggregation can help us see several different things:

- *The relative labour burden of women and men – how much labour each offers to the different sectors;*
- *The relative cash rewards of women and men – how much, overall, women and men earn from each of the different sectors. This is important, because money is an important source of power in our society. So this is one measure of women's empowerment; and*
- *Welfare of families, and especially children – research in many countries has shown that money that goes into a woman's pocket is more likely to be used for the benefit of the family and children than money that goes into a man's pocket.*

MACMOD already disaggregates the private sector into nine sectors – for example, agriculture, mining, tourism, etc. Agriculture is further sub-divided into three sub-sectors – subsistence agriculture, commercial agriculture, and export agriculture. The female proportion of the labour force differs in each of these sectors. By disaggregating the factor payments to household, we can see how the relative labour burden, and relative employment and rewards of women and men will change as some parts of the economy grow faster than others.

The data to disaggregate factor payments to households already exists, as all the necessary information – employment, industry, hours of work, and wage rates – are contained in the recent labour force survey (LFS).

Adding the care economy to MACMOD

We said that at present MACMOD's sectors include households, the private economy, government, and the rest of the world. Most of the transactions that happen between these sectors are paid. Some parts – for example, the subsistence economy, are not paid. To get quantitative measures for these transactions, economists 'impute' the value of what is produced.

We are suggesting that we add a new sector – the care/reproductive economy – and impute the value of what is produced in it.

We propose that the care economy is modelled in a very similar way to other sectors, with many of the same economic assumptions. (We base this suggestion on work by Adrian Wood and Marzia Fontana, reported in World Development of 2000. However, we are suggesting that we include only reproductive work, not leisure as Wood and Fontana do.)

- *The production function for the care economy converts the input labour into an output of services.*
- *The demand for these services depends on household preferences, just like for any other good or service.*
- *The demand is a function of the 'price' of the services.*
- *The price is calculated as the opportunity cost, which we can take as the average male and female wage in the paid economy.*
- *Labour use is measured in hours rather than numbers of persons, because many people – especially women – do both paid and unpaid work.*

As with all parts of the model, there are some constraints. For example, the maximum hours that a person can spend in paid and unpaid work combined is set biologically. It cannot be more than a certain amount because the person will not be able to sustain him or herself in the long term without enough time for sleep and other personal care. The elasticities (how much demand changes with a change in price) for unpaid labour will also be different for the care economy and other sectors.

By adding the care economy to MACMOD, we will be able to see what happens with policy changes and external events. For example, Fontana and Wood model the effects on unpaid labour and on the paid labour of women and men of a rise in the world price of food inputs, a rise in investment, and the introduction of manufacturing incentives.

One big problem in adding the care economy to MACMOD is that we don't yet have the data to do this. The Tanzanian Demographic and Health Survey of 1992 had some time use questions, but we need a more recent, and full national time use survey, to have reliable data for adding this element.

In the meanwhile, even if it is not yet in the model, policy makers need to think when interpreting the output of the existing model what the impact will be on the care economy.

Thinking about gender in TAXMOD

Most taxes and other forms of revenue have a different impact on different citizens – for example, on women and men, rural and urban, rich and poor.

- *Personal income tax affects men more than women because (a) men are more likely than women to be in paid employment; (b) men are more likely than women to be in the formal economy; and (c) on average, men earn more than women.*
- *With value-added tax (VAT), rich people pay more than poor people in absolute terms because they have more money to spend. However, in relative terms, calculations in many countries show that poor households spend a bigger proportion of their income on VAT than rich households. Also, each shilling paid in VAT affects a poor household more than a rich household because the importance (marginal utility) of every shilling is more the fewer shillings you have.*
- *VAT affects producers and sellers as well as consumers. At present, VAT is not imposed on many parts of the economy, particularly smaller operators and the informal sector. The plans of the Tanzanian Revenue Authority (TRA) to widen the VAT net and extend it to the informal sector will affect women more than men, because women are more likely than men to work in the informal sector.*
- *Customs and excise affects the relative growth of different sectors depending on what tariffs are imposed and how quickly they are lowered to meet World Trade Organisation demands. Because different sectors employ different proportions of women and men, the tariffs affects employment patterns of women and men differently. For example, if tariffs on clothing are lowered fast, this will probably decrease women's employment faster than that of men.*

Data on some of these things are easy to find. For example, the TRA can easily collect the number of women and men who pay personal income tax. For the impact of VAT on consumers, we can use the expenditure data from the household budget survey. For the impact of customs and excise, we can look at employment patterns from the labour force survey.