

Imputing Wages to NTTA (NTTA Production in Monetary Units)

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Outline

1. Wage Data
2. Methods for Imputing Wages
3. Why NTTA uses Specialist Replacement Method
4. Which wages to use for which activities?
5. Other aspects
6. Sensitivity testing

Understanding your wage data

1. What type of wage data is available?
2. What is the coding scheme for different jobs or occupations?
3. Is the data pre-tax or post-tax?
4. Do the wages include fringe benefits or employer-paid taxes?

Methods for Imputing Wages

- Different methods for different types of research questions
 - Replacement method: what would you have to pay to buy the service in the market?
 - Can replace with generalist or specialist wages
 - Opportunity cost method: what could you earn with your time in the market if you worked for pay instead of doing the household activity?
- NTTA uses specialist replacement
 - Although in some countries, generalist may be more appropriate

Why use specialist replacement?

- NTA is mostly concerned with accounting type questions, not behavioral models or individual incentives
- Opportunity cost analyses sometimes come up with values of household production that are so large that no one pays attention
 - Reveals the limitations of the behavioral model and measurement issues with opportunity cost method

Which wages to use?

- Country teams must decide what is appropriate in their context
- Can use single occupation or average of different occupations
 - Use employment-weighted averages to reflect the distribution of occupation types in the market
- US, 2009 example:

Time Use Activity	Standard Occupational Classifications Used for Wages (and Codes)	Avg Hourly Wage
1. Cleaning	Maids and housekeeping cleaners (37-2012) and their supervisors (37-1011)	11.33
2. Laundry	Laundry and dry-cleaning workers (51-6011), hand sewers (51-6051), tailor, dressmakers, and custom sewers (51-6052)	10.43
3. Cooking	Food preparation and serving related occupations (major category 35-0000)	10.04
4. Household maintenance and repair	Maintenance and repair workers, general (49-9042), Helpers—installation, maintenance, and repair workers (49-9098)	17.08
5. Lawn and garden care	Landscaping and groundskeeping workers (37-3011) and their supervisors (37-1012), grounds maintenance workers (37-3019)	13.15
6. Household management	Management occupations (major category 11-0000), business and financial occupations (major category 13-000) and office and administrative support occupations (major category 43-0000)	24.59
7. Pet care	Nonfarm animal caretakers (39-2012)	10.50
8. Purchasing goods and services	Personal care and service occupations (major category 39-0000)	11.87
9. Childcare	Child care workers (39-9011), preschool teachers, except special education (25-2011), and child, family and school social workers (21-1021)	13.42
10. Eldercare and care outside the home, and volunteering	Community and social service occupations (major category 21-0000) and personal and home care aides (39-9021)	17.85
11. Travel	Taxi drivers and chauffers (53-3041)	11.51

Other aspects of wages

- Want pre-tax wages, so gross wages paid to employee, plus employer-paid taxes
- PENDING ISSUE: Add an age-productivity adjustment, but have not settled on one method yet
- Adjustments we used to make that we have dropped:
 - Quality adjustment factors for some activities
 - Inclusion of imputed fringe benefits

Sensitivity Tests

- Method of wage imputation is the most influential in determining different levels of production
 - Don't bother with opportunity cost versus replacement
 - has the biggest effect, but OC is not a reasonable alternative
 - (Although you could argue that it is appropriate for childcare?)
 - Do bother with different replacement wage schemes
 - Generalist versus specialist
 - Mean vs. median?