

**INTENSIVE COURSE IN
GENDER-SENSITIVE
MACROECONOMIC
MODELING FOR POLICY
ANALYSIS**

June 28-July 16, 2021

COURSE MANUAL

Organized by:

Care Work and the Economy, American University
Levy Economics Institute of Bard College

Supported by:

The William and Flora Hewlett Foundation
Program on Gender Analysis in Economics

ABOUT THE COURSE

The Intensive Virtual Course in Gender-Sensitive Macroeconomic Modeling for Policy Analysis was a 15-day course organized by the *Care Work and the Economy* Project at American University and the *Levy Economics Institute* of Bard College on June 28 – July 17, 2021, made possible by the generous support of the William and Flora Hewlett Foundation.



This Course Manual is an accompaniment of the lecture-sessions given at the virtual intensive course on “Gender-Sensitive Macroeconomic Modeling for Policy” held in June 28-July 16, 2021. Recordings of the 2021 Sessions are available through the [CWE-GAM 2021 Levy Course playlist](#) on YouTube.



**CARE WORK
AND THE ECONOMY**

Advancing policy solutions
with gender-aware
macroeconomic models



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To learn more about the course instructors, facilitators and its 2021 cohort of fellows, visit <https://research.american.edu/careworkeconomy/community/intensive-course-on-gender-sensitive-macroeconomic-modeling/>

INTRODUCTION

This manual accompanies the lecture-sessions given at the virtual intensive course on “Gender-Sensitive Macroeconomic Modeling for Policy” held in June 28-July 16, 2021. It is organized according to the day and session of the course when the video lecture was given, for example. Each section in the manual provides a list of topics covered in the lecture-session and a set of recommended readings. These readings are meant to acquaint (or refresh) the viewer with the conceptual and technical aspects of the material covered in the session. The lectures provide discussion questions that were used in breakout groups and class discussions during the virtual course as well as hands-on exercises for training.

The intensive course was organized by the [Care Work and the Economy](#) Project at American University and the [Levy Economics Institute](#) of Bard College. The purpose of the 15-day course was to engage with fellow economists to enhance capacity building in research and teaching of gender-sensitive economic analysis, with a focus on care and macroeconomic policy aspects. The course aimed to enhance the capacity of economists - from academia, research institutions, international organizations and government ministries - in research and teaching of gender-sensitive economic analysis, through a better understanding the care economy and the formulation of gender-sensitive macroeconomic policies. The course was built on four pillars: a) understanding and measuring the care economy; b) adapting social accounting matrices to account for paid and unpaid care activities; c) integrating the information from time-use surveys on unpaid care activities with other relevant sources of information such as national income accounts, labor force surveys and household or special surveys; and d) performing policy-relevant economic analyses that take systematic account of the interlinkages between care, macroeconomic processes, and distribution. Course lectures also introduce gender analysis in economics and the conceptual, theoretical, and empirical modeling tools developed by the Care Work and the Economy (CWE-GAM) project and the Levy Economics Institute.

The course has four components and the sessions in each component involve a mix of lectures, exercises and hands-on training in analytics. They are:

1. Basics of gender relations in the economy (3 sessions)
 - a. Introductory session by Maria S. Floro (Day 1)
 - b. Two sessions on gender relations in households and the labor market by Paula Herrera Idárraga (Days 1 and 2)
2. Understanding and measuring the care economy (8 sessions)

- a. Three sessions by Nancy Folbre on the meaning and nature of care work; accounting for unpaid work and time use; and demand for care driven by demographic and economic changes (Days 2 and 3)
 - b. Three sessions by Jooyeoun Suh on estimating the unpaid and paid care sectors (with applications to South Korea) (Days 4 and 6)
 - c. A session on paid caregivers and the market for care by Ito Peng (Day 5)
 - d. A session on social, labor, and care policies by Ana Maria Tribin (Day 5)
3. Conceptualizing care and gender in the context of macroeconomic processes of growth and distribution (4 sessions) by Elissa Braunstein (Days 7 and 8)
 4. Adapting a social accounting matrix (SAM) to account for paid and unpaid care activities and performing policy-relevant analyses using gender-sensitive macroeconomic and microsimulation models (14 sessions)
 - a. An introduction on the SAM by Martín Cicowiez (1 session) (Day 9)
 - b. Three sessions on the development of a structuralist, SAM-based macro model and analysis of macroeconomic impacts by Ajit Zacharias and Thomas Masterson (Days 10 and 11)
 - c. Three sessions on microsimulation model of time and income poverty with applications to Ghana and Tanzania by Ajit Zacharias and Thomas Masterson (Days 11-12).
 - d. Seven sessions on a detailed exposition of the GEM-Care Computable General Equilibrium (CGE) model focused on analyzing the dynamics of care work, labor supply, growth and gender equality with applications to South Korea (Days 12 -15)

Intensive Course in Gender-Sensitive Macroeconomic Modeling for Policy Analysis

Course Schedule: June 28-July 16, 2021

DAY	SESSION TITLE	INSTRUCTOR
1	1. Introduction to Gender Analysis in Economics and Feminist Economics 2. Gender Relations in Households	Maria S. Floro Paula Herrera Idárraga
2	1. Gender Relations in Labor Markets 2. Demographic and Economic Change and Demand for Care	Paula Herrera Idárraga Nancy Folbre
3	1. Meaning of Care and Nature of Care Work 2. Accounting for Unpaid Work and Time Use	Nancy Folbre
4	1. Estimating the Unpaid Care Sector: An Illustration 2. Exercise/Group discussion	Jooyeoun Suh
5	1. Paid Caregivers and the Market for Care 2. Social, Labor and Care Policies	Ito Peng Ana Maria Tribin
6	1. Measuring Paid Care Sector: An Illustration 2. Measuring Paid Care Sector: An Illustration (cont.)	Jooyeoun Suh
7	1. Gender, Care and Macro: Intro 2. Exercise	Elissa Braunstetin
8	1. Gender, Growth and Distribution 2. Group Exercise	Elissa Braunstetin
9	1. Introduction to Social Accounting Matrices (SAM) 2. Levy Macro-Micro Model I	Martín Cicowiez Ajit Zacharias
10	1. Levy Macro-Micro Model II 2. Group Exercise	Ajit Zacharias
11	1. Levy Macro-Micro Model III 2. Group Exercise	Thomas Masterson
12	1. Levy Macro-Micro Model IV 2. A Primer on GEM-Care Macromodelling and SAM (i.e., extended SAM for gender and care analysis)	Thomas Masterson Martín Cicowiez
13	1. GEM-Care Computable General Equilibrium (CGE) model, with focus on the analysis of care 2. Exercise/Group discussion	Martín Cicowiez
14	1. GEM-Care, CGE model focused on the analysis of care 2. Exercise/Group discussion	Martín Cicowiez
15	1. GEM-Care CGE Model Applications on Various Policy Scenarios 2. Exercise/Group discussion	Martín Cicowiez

Intensive Course in Gender-Sensitive Macroeconomic Modeling for Policy Analysis

Course Manual

DAY ONE

[Watch Day 1 Lectures](#) 

Session 1.1 Introduction to Gender Analysis in Economics and Feminist Economics

Instructor: Maria S. Floro

Topics

1. Overview of the Intensive Course
2. Introduction
 - a. Gender as a Social Construct
 - b. Intersectionality of Gender, Class, and Race/Ethnicity
 - c. Economics as a Socially Constructed Discipline
 - d. Feminist Economics and its Challenges to Mainstream Economics
 - e. Feminist Economics and its Contributions

This session lays the conceptual groundwork for analyzing economic issues from a gendered perspective. It turns a critical eye on the different schools of thought in economics and how their analyses of real-world problems take on the lens of influential economists who are predominantly male. The required reading, Chapter 2 of Beneria et al. (2016) book on *Gender, Development, and Globalization* examine the evolution of the study of gender in economics through critique and engagement with different streams of thought –neoclassical economics, Marxian theory, institutional economics, and heterodox economics. It then presents the central principles, main contributions, and emerging research agendas of the growing field of feminist economics, demonstrating how this field goes beyond the simple ‘add women (or gender) and stir’ approach to existing schools of thought. This chapter also describes the contributions of feminist economics to the analysis of provisioning activities and household dynamics as well as in engendering macroeconomics and ecological economics, which are central to envisioning gender-sensitive economic policies to build inclusive, sustainable economies.

The second reading is supplementary and explores in more depth some of the key points in Beneria et al. (2016) reading. The supplemental reading, Chapter 1 of Ferber and Nelson (1993) book on *Beyond Economic Man*, is one of the seminal think pieces that brought attention to the fact that the underlying assumptions, topics and methods of mainstream economics reflect distinctly masculine concerns. Ferber and Nelson demonstrate that these male biases give supremacy of market relations over family and social relations, justify the preoccupation with market-based economic growth as a key economic development goal, and emphasize individualism while ignoring interdependence.

Main Readings

Lourdes Beneria, Gunseli Berik and Maria Floro (2016). *Gender, Development and Globalization: Economics as if All People Mattered*. Routledge, Chapter 2: The Study of Women and Gender in Economics, pp. 41-86.

Ferber, M. and Nelson, J. (eds) (1993) *Beyond Economic Man*, Chicago: University of Chicago Press. Introduction and Chap 1 pp. 1-32.

Supplementary Readings

Marilyn Power (2004) "Social Provisioning as a Starting Point for Feminist Economics," *Feminist Economics*, 10:3, 3-19, DOI: 10.1080/1354570042000267608

Lourdes Beneria, Gunseli Berik and Maria Floro (2016). *Gender, Development and Globalization: Economics as if All People Mattered*. Routledge, Chapter 3: Markets, Globalization and Gender, pp. 93-130.

Session 1.2 Gender Relations in Households

Instructor: Paula Herrera-Idárraga

Topics

1. Feminist critique of New Household Economics (NHE) (Becker's model of the unitary household, comparative advantage, specialization, and division of labor).
2. Measuring household bargaining power.

This session examines household gender relations from a feminist point of view departing from the seminal contributions of Folbre (1986) and Agarwal (1997). In every household, multiple decisions occur: from allocation of income over different expenses to asset use (i.e., house space, car, land production, stock to keep, stock to reproduce, etc.) to the division of paid and unpaid labor. These decisions can reflect both benefits and difficulties depending on the level of conflict and/or cooperation within the household. Household members may be affected differently from those decisions, which often result in

gender inequality against women that can persist over time. Women's participation in the labor force and their income level can, to some extent, affect their bargaining power and even their ability to make decisions and use household economic resources. However, women's ability to actively participate in the labor market and women's bargaining power at home is also preconditioned by their community's social norms. These norms, which are context and time-specific, define which issues can legitimately up for discussion inside and outside the household. The learning objectives are to reflect on the explanations for the gender division of labor in households and understand what determines women's bargaining power within households.

Main Readings

Folbre, N. 1986. "Hearts and Spades: Paradigms of Household Economics." *World Development*, 14(2): 245-255.

Agarwal, B. (1997) "Bargaining" and Gender Relations: Within and Beyond the Household." *Feminist Economics* 3(1): 1-51.

Additional Readings

Folbre, N. (2004) "A theory of misallocation of time" in *Routledge IAFFE Advances in Feminist Economics*, Edited by Nancy Folbre and Michael Bittman. Ch 1.

Anderson, S. and Eswaran, M. (2009). "What determines female autonomy? Evidence from Bangladesh". *Journal of Development Economics*, 90(2): 179-191.

DAY TWO

[Watch Day 2 Lectures](#) 

Session 2.1 Gender Relations in Labor Markets

Instructor: Paula Herrera-Idárraga

Topics

1. Quick overview of the changing conditions of the labor market: the decline of unions, rise of precarious jobs (part-time, temporary, short term), and deterioration of working conditions. (Lack of social security, unemployment benefits, informal employment, and income insecurity).
2. Overview of some gender gaps in participation in the labor force, paid and unpaid employment, and wages.
3. Sectorial and occupational gender segregation.

This session addresses the following questions: Do men and women differ in most labor market outcomes, and why is the gender gap in these areas persistent? We will frame the questions in a labor market context of slow productivity growth, intensification of global competition, the decline in workers' bargaining power, and uncertainty in economic conditions described by Benería, Günseli, and Floro (2016). Despite important recent gains, substantial differences between men and women remain concerning labor market outcomes. Women workers tend to prevail in low pay sectors/occupations and insecure forms of jobs, such as informal ones. The learning objective is to identify and learn about gender inequalities in labor markets.

Main Readings

Benería, L., Günseli, B. and Floro, M. (2016). "Labor Market under Globalization" in *Gender, Development and Globalization: Economics As If All People Mattered*. Routledge. Ch 4.

International Labor Organization. 2017. *World Employment and Social Outlook: Trends for Women*. Available at: https://www.ilo.org/global/research/global-reports/weso/trends-for-women2018/WCMS_619577/lang--en/index.htm.

Additional Readings

Bergmann, B. 1974. "Occupational Segregation, Wages and Profits When Employers Discriminate by Race or Sex," *Eastern Economic Journal*, Eastern Economic Association, vol. 1(2): 103-110.

England, P., Budig, M., & Folbre, N. (2002). "Wages of Virtue: The Relative Pay of Care Work." *Social Problems*, 49(4): 455-473. DOI: 10.1525/sp.2002.49.4.455

Session 2.2 Demographic and Economic Change and Demand for Care

Instructor: Nancy Folbre

Topics

1. Integrating Demographics and Economics
2. Contours of Demographic Change
3. Demographic Dividends and Disadvantages
4. Dependency Ratios and Social Costs

Main Reading

King, Elizabeth M., Hannah L. Randolph, Maria S. Floro, and Jooyeoun Suh. “Demographic, health, and economic transitions and the future care burden.” *World Development* 140 (2021): 1053-71.

Additional Reading

Mason, Andrew, and Sang-Hyop Lee. “Macroeconomic Impacts and Policies in Aging Societies.” *Aging Societies* (2019).

DAY THREE

[Watch Day 3 Lectures](#)



Sessions 3.1 Meaning of Care and Nature of Care Work

Instructor: Nancy Folbre

Topics

1. General overview of the care sector
2. Distinctive features of care work
3. Bargaining power and care penalties
4. Who benefits?
5. Critique of national income accounting

This session focuses on conceptualizing care and care work and how care work is prone to under evaluation regardless of who performs it (although it is compounded by gender inequality). Also, how this affects the structure of wages in the paid labor market and invisibility of unpaid work. Main points covered include:

- *General overview of the care sector.* Care sector usually includes 3 industries within the service sector (health, education and social services) plus the unpaid production, development and maintenance of human capabilities in families and communities.
- *Distinctive feature of care work.* Care work is a relational activity; it involves team production which makes it difficult to identify value added (e.g., many teachers during school years).
- *Bargaining power and care penalties.* Commitments to care usually reduce bargaining power (because of personal attachment). There is evidence on care penalties, e.g., time devoted to time care reduces lifetime earnings, pay is less for women in care industries compared to male peers.
- *Who benefits?* Employers since they don't pay the full cost of producing labor; men because women have a larger share of care costs; the dependents cared for.
- *Critique of national income accounting.* (1) GDP is misleading, e.g., care counts if performed by an outsider, but not if parents care for the children; family spending on children is considered consumption; we value inputs in health/education but not the value of the long-term outputs (2) We need to challenge conventional GDP measures as the only indicator of well-being. Satellite accounts, even though not perfect, at least are putting a quantitative measure to unpaid work, natural capital, etc. This information is the starting point to macro and micro modeling.

Main Readings

Folbre, Nancy. "Gender and the Care Penalty," in *Oxford Handbook of Women in the Economy*. New York: Oxford University Press, 2018.

Folbre, Nancy. "Developing Care: Recent Research on the Care Economy and Economic Development." 2018. Available at <https://idl-bnc-idrc.dspacedirect.org/handle/10625/57142>

Additional Reading

Chen, Xinxin, John Giles, Yafeng Wang, and Yaohui Zhao. "Gender patterns of eldercare in China." *Feminist Economics* 24, no. 2 (2018): 54-76.

Mugehera, Leah, and Amber Parkes. "Unlocking Sustainable Development in Africa by Addressing Unpaid Care and Domestic Work." (2020)

Addlakha, Renu. "Kinship destabilized! disability and the micropolitics of care in urban India." *Current Anthropology* 61, no. S21 (2020): S46-S54

Guimarães, Nadya Araujo, and Helena Hirata. "Care Work: A Latin American Perspective." In *Care and Care Workers*, pp. 1-24. Springer, 2021.

Session 3.2 Accounting for Unpaid Work and Time Use

Instructor: Nancy Folbre

Topics

1. Problems and Conceptual Issues regarding Accounting for Unpaid Work
2. Types of Care
3. Features of Time Use Surveys
4. Comparability Issue
5. Supervisory Care and Simultaneous Activities

This session refers to time use surveys (TUS) and the ways to improve the methodology used in their collection. There are several issues that need to be considered when using TUS. Three problems with existing TUS: (1) Underestimation of temporal constraints imposed by dependent care, not only the time used but how it restricts paid employment. (2) Inconsistencies of direct care time across surveys and survey designs (3) International harmonization: Surveys need to be more cost effective and accommodate national differences. More gender voices are needed in national statistical offices and UN divisions. There are also global and regional comparability issues as TUS differ in: definition of simultaneous activities; ages to classify as children; different definition of dependents; micro and meta data is not available. NF discussed the example of Mexico and Ecuador's TUS.

Main Readings

Folbre, Nancy. "Measuring Care: Gender, Empowerment, and the Care Economy." *Journal of Human Development* 7, no. 2 (2006): 183-199.

Additional Reading

Chen, Xinxin, John Giles, Yafeng Wang, and Yaohui Zhao. "Gender patterns of eldercare in China." *Feminist Economics* 24, no. 2 (2018): 54-76.

Mugehera, Leah, and Amber Parkes. "Unlocking Sustainable Development in Africa by Addressing Unpaid Care and Domestic Work." (2020)

DAY FOUR

Watch Day 4 Lectures 

Session 4.1 Estimating Unpaid Care Sector: An Illustration

Instructor: Jooyeoun Suh

Topics

1. Introduction
2. Measuring and Valuing Unpaid Care
3. An Example: The case of Korea
4. Types of Unpaid Care Work and their Measurement
5. Valuation of Unpaid Care Time

These two sessions aim to help participants understand the issues involved in measuring and assigning value to the unpaid care economy in Korea. Through an empirical exercise using time-use survey data, participants explore and develop ways of measuring and valuing unpaid care work based on time-use and other data. The goal of estimating unpaid care work is to increase the visibility of care, so that we can better measure the value to unpaid care to show its significance in the economy. This work typically uses time use survey diaries to try and capture all types of care including interactive, support and supervisory care. One major challenge is supervisory care, which is the most difficult to capture. One strategy is to ask, “with whom?” for every activity to see if children are present. There are a few ways to place value on the unpaid care which are largely broken into input and output methods.

Main Reading

- Suh, Jooyeoun and Nancy Folbre. 2016. “Valuing unpaid childcare in the U.S.A.: prototype satellite account using the American Time Use Survey.” *Review of Income and Wealth*, 62(4): 668-684.
- Floro, Maria S., and Marjorie Miles. 2003. “Time use, work and overlapping activities: evidence from Australia.” *Cambridge Journal of Economics*, 27(6): 881-904.

Additional Readings

- Charmes, Jacques. 2019. “The Unpaid Care Work and the Labour Market. An analysis of time use data based on the latest World Compilation of Time-Use Surveys.” ILO Working Paper. Available at: [https://www.ilo.org/gender/Informationresources/Publications/WCMS_732791/lang--en/index.htm](https://www.ilo.org/gender/Informationresources/Publications/WCMS_732791/lang-en/index.htm).
- Esquivel, Valeria, Debbie Budlender, Nancy Folbre, and Indira Hirway. 2008. “Explorations: Time-use Surveys in the South.” *Feminist Economics*, 14(3): 107 -152.

Session 4.2 Let's Dig: Time Use Survey

Instructor: Jooyeoun Suh

Topics

1. Examples of Time Use Surveys
2. Class Discussion

The second part of the lecture is a discussion about time use surveys and the data collection methods. Time use surveys can vary in their duration, time slot intervals, and elements included for each activity. The method of collecting the data includes paper light diaries, online/apps, and high-tech camera and GPS trackers.

Main Reading

Floro, Maria S., and Marjorie Miles. 2003. "Time use, work and overlapping activities: evidence from Australia." *Cambridge Journal of Economics*, 27(6): 881-904.

Office for National Statistics, UK. 2018. "Household satellite account, UK: 2015 and 2016." Available at: <https://www.ons.gov.uk/economy/nationalaccounts/satelliteaccounts/articles/householdsatelliteaccounts/2015and2016estimates#methodological-improvements>

DAY FIVE

Watch Day 5 Lectures 

Session 5.1 Paid Caregivers and the Market for Care

Instructor: Ito Peng

Topics

1. Understanding Care through the Lens of the Care Diamond
2. Using Intersectionality and Multi-scalar Lenses to understand Care Work
3. The Case of South Korea

This lecture examines paid care work and the market for care from a feminist political-economic perspective. We will begin with the concept of the care diamond to understand and contextualize how care is negotiated, provided and delivered through social, cultural and political-economic processes by four key institutions – the family, state, market and community/NGOs. The paper by Shahra Razavi (see below) is a good introductory reading to understand this concept because not only does she explain how these key institutions configure to provide care, but she also situates the care diamond in a development context.

Care work is universally and culturally undervalued. The undervaluation is partly because of care's historical and cultural association with women's unpaid domestic labour. As a result, paid care work has been historically marginalized in the labour market, relegated to women, immigrants, and racialized workers. Because care work involves complex physical, functional, interpersonal, and emotional components, it shapes and is shaped by the social positionings of the caregivers and care recipients, which are also reflected in broader societal and global structures. For this reason, we must understand care and care work from intersectional and multi-scalar lenses. We will examine how gender, race and citizenship status intersect with care work and how this reflects and reproduce global inequalities and power relations. Fiona Williams (2018) provides a useful guide for understanding care and care work from intersectional and multi-scalar lenses.

Finally, we use the case of South Korea to show how the care diamond in that country is configured and change over time. The working paper by Peng, Cha and Moon (2021) offers a case study of South Korea's care policies and care infrastructure. It shows how the government's care policies influence the market for care and its implications for paid care workers.

Main Reading

Razavi, Shahra. (2007) *The Political and Social Economy of Care in a Development Context: Conceptual Issues, Research Questions and Policy Options*, Geneva: UNRISD.
[https://www.unrisd.org/80256B3C005BCCF9/\(httpAuxPages\)/2DBE6A93350A7783C12573240036D5A0/\\$file/Razavi-paper.pdf](https://www.unrisd.org/80256B3C005BCCF9/(httpAuxPages)/2DBE6A93350A7783C12573240036D5A0/$file/Razavi-paper.pdf)

Additional Readings

Peng, Ito, Seung-Eun Cha, and Hyuna Moon. (2021) *An Overview of Care Policies and the Status of Care Workers in South Korea*, CWE-GAM Working Paper Series: 21-01.
<http://research.american.edu/careworkeconomy/wp-content/uploads/sites/2/2021/01/21-02-Kang-et-al.-PDF-Final-Paper.pdf>

Williams, Fiona (2018) “Care: Intersections of scales, inequalities and crises,” *Current Sociology*, 66(4): 547-561.

Session 5.2 Social, Labor and Care Policies

Instructor: Ana Maria Tribin

Topics

1. Labor market policies.
2. Unpaid care and domestic work: recognizing, redistributing, and reducing unpaid care and domestic work through care policies.

One way to encourage women’s labor force participation and gender equality are to implement policies that help women, who are the primary caretakers, balance better-paid work and family. This section discusses the potential role of the government and employers in shaping a more balanced world inside and outside the home. We start with a review of family-friendly policies. The UNICEF classified family-friendly policies into three: time-related, service-related, and finance-related policies. Time-related procedures include parental leave and flexible work arrangements. Service-related policies include investing in care infrastructure. Finance-related policies refer to those policies that provide cash transfers, vouchers, or grants for the care of children or wage replacement. Then we will analyze which of these policies have worked and if these policies may have unintended consequences that end up discouraging employers and then can backfire on the women they’re supposed to promote. Finally, we will analyze the policies proposed during the COVID19 pandemic that aggravate economic inequalities faced by women. The learning objectives are: Understand the role of government and employers in alleviating the conflict between paid work and unpaid work; review the types of policies that have been implemented; analyze benefits and unintended negative consequences of family-friendly policies.

Main Reading

Esquivel, Valeria Renata; Kaufmann, Andrea; Innovations in care: New concepts, new actors, new policies; Friedrich Ebert Stiftung; 1; 2017; 65. <http://hdl.handle.net/11336/110526>

Olivetti, Claudia, and Barbara Petrongolo. 2017. "The Economic Consequences of Family Policies: Lessons from a Century of Legislation in High-Income Countries." *Journal of Economic Perspectives*, 31 (1): 205-3

Additional Readings

Raj Chetty, John N. Friedman, Nathaniel Hilger, Emmanuel Saez, Diane Whitmore Schanzenbach, Danny Yagan, How Does Your Kindergarten Classroom Affect Your Earnings? Evidence from Project Star. *The Quarterly Journal of Economics*, Volume 126, Issue 4, November 2011, Pages 1593–1660, <https://doi.org/10.1093/qje/qjr041>

Bernal, Raquel, and Camila Fernández (2013). "Subsidized childcare and child development in Colombia: Effects of Hogares Comunitarios de Bienestar as a function of timing and length of exposure." *Social Science & Medicine*, 97, pp.241-249.

Tribin, Ana & Vargas, Carmiña & Ramirez Bustamante, Natalia. (2019). Unintended consequences of maternity leave legislation: The case of Colombia. *World Development*. 122. 218-232. 10.1016/j.worlddev.2019.05.007.

DAY SIX

Watch Day 6 Lectures 

Sessions 6.1 – 6.2 Estimating the Paid Care Sector: Illustration

Instructor: Jooyeoun Suh

Topics

1. *Introduction*
2. *Definition and Nature of Paid Care Work*
3. *The Paid Care Sector*
4. *The Case of Domestic Workers*
5. *Trends in Fertility Rates*
6. *Estimating the Paid Care Sector: The case of Korea*
7. *Global Care Chain and Migrant Care Workers*

This session aims to help participants understand the issues involved in defining and measuring the paid care sector. An empirical exercise using labor force survey data will help participants develop their own ways to conduct descriptive analyses based on various data sources.

Main Readings

- International Labour Organization. 2018. “Care Work and Care Jobs For the Future of Decent Work,” Chapter,” 1 (pp. 6-12) and Chap 2 (pp. 39-53). Available to download at: https://www.ilo.org/global/publications/books/WCMS_633135/lang--en/index.htm.
- Suh, Jooyeoun. 2020. “Estimating the Paid Care Sector in South Korea.” CWE-GAM Working Paper Series: 20-07, Program on Gender Analysis in Economics, American University, Washington, DC. Available at: <http://research.american.edu/careworkeconomy/wp-content/uploads/sites/2/2020/11/20-07-SuhPDFFinal.pdf>.

Additional Reading

- Duffy, Mignon and Amy Armenia. 2019. “Paid Care Work around the Globe: A Comparative Analysis of 47 Countries prepared for UN Women.” LIS Working Paper Series, No. 758, Luxembourg Income Study (LIS), Luxembourg. Available at: <https://www.econstor.eu/bitstream/10419/203044/1/1047659697.pdf>

DAY SEVEN

[Watch Day 7 Lectures](#) 

Sessions 7.1 – 7.2 Gender, Care and Macroeconomics: Introduction

Instructor: Elissa Braunstein

Topics

1. Feminism, Production and Reproduction
2. Overview of Work on Gender and Macro
3. Exercise

This session gives a critical overview of macroeconomic approaches to gender and care. We will start with the Seguino (2020) reading, an excellent overview of feminist approaches to macro, which is important to establish. Then turning to care more specifically, we will start where most students with a background in economics do, with the notion of human capital, covering both neoclassical/conventional approaches, political economy, and feminist approaches, drawing from Folbre’s paper in the RRPE. It is with the latter that we bridge into talking about care, social reproduction and macroeconomics. Then, we will discuss Braunstein (2021) that provides an overview of approaches to care and the macroeconomy, including national income accounting, transforming macroeconomic modeling, and sectoral disaggregation for care-aware policy analysis.

Main Readings (Available [here](#))

Elissa Braunstein. 2021. “Care and the Macroeconomy,” in Günseli Berik and Ebru Kongar (eds.) *The Routledge Handbook of Feminist Economics*. Routledge, forthcoming in 2021.

Seguino, Stephanie. 2020. “Engendering Macroeconomic Theory and Policy.” *Feminist Economics* 26(2): 27-61.

Recommended Readings (Available [here](#))

Nancy Folbre. 2012. “The Political Economy of Human Capital.” *Review of Radical Political Economics* 44(3): 281-292.

DAY EIGHT

[Watch Day 8 Lectures](#) 

Sessions 8.1 – 8.2 Gender, Care and Macroeconomics: Growth and Distribution

Instructor: Elissa Braunstein

Topics

1. Opening Exercise on Macromodels
2. Illustration of a Feminist Economics model: Braunstein et al (2011)
3. Example of an Empirical Macromodel: Braunstein et al 2020
4. Exercise

This section will be a more technical presentation for modeling growth, care, and distribution. I will start with the Braunstein et al. models, walking through the structuralist dynamics of the baseline Kaleckian model, where the structures of growth and development are connected to social reproduction and gender inequality. Employment, output and long-run prospects for growth are driven by class dynamics as well as care and social reproduction, defined as the time and money it takes to produce, maintain and invest in the labor force. How social reproduction is organized, the extent to which it takes place in the household, public or market sectors, and the gender distribution of labor in each, influences aggregate demand and long-run productivity growth. Theoretical modeling will be supplemented by empirical applications, including growth regression analysis. Then we will also situate other papers from the project that illustrate different approaches to overlapping questions.

Main Readings

Braunstein, Elissa, Irene Van Staveren and Daniele Tavani. 2011 “Embedding care and unpaid work in macroeconomic modeling: A structuralist approach.” *Feminist Economics*, 17(4): 5-31, 2011

Braunstein, Elissa, Rachid Bouhia and Stephanie Seguino. 2020. Social Reproduction, gender equality and economic growth.” *Cambridge Journal of Economics* 44(1): 129-155.

Additional Readings

The following are all working papers from the Hewlett project that are examples of different/overlapping approaches in the gender macro-modeling literature. Students are asked to pick one, read the abstract, intro and conclusion, and come up with a 2-3 sentence characterization that conveys the following: (1)

The paper's methodological approach or place in the gender macro-modeling literature, and (2) how it relates to questions of growth and distribution.

Recommended Readings from the *Care Work and the Economy (CWE-GAM) Working Papers Series*

Agénor, P. & Agénor, M. (2019). Access to Infrastructure, Women's Time Allocation, and Economic Growth. Care Work and the Economy Project Working Paper Series: 19-05. Program on Gender Analysis in Economics. American University. <https://doi.org/10.17606/8m8y-mp65>

Braunstein, E. & Tavani, D. (2020). Gender Wage Equality and Investments in Care: Modeling Equity and Production. Care Work and the Economy Project Working Paper Series: 20-10. Program on Gender Analysis in Economics. American University. <https://doi.org/10.17606/kr5j-m452>

Heintz, J. & Folbre, N. (2019). Endogenous Growth, Population Dynamics, and Returns to Scale: Long-Run Macroeconomics when Demography Matters. Care Work and the Economy Project Working Paper Series: 19-01. Program on Gender Analysis in Economics. American University. <https://doi.org/10.17606/cg00-k580>

Ilkcaracan, I., Kim, K., Masterson, T., Memiş, E. & Zacharias, A. (2020). The Impact of Investing in Social Care on Employment Generation, Time-and Income-Poverty and Gender Gaps: A Macro-Micro Simulation for Turkey. Care Work and the Economy Project Working Paper Series: 20-06. Program on Gender Analysis in Economics. American University. <https://doi.org/10.17606/3dg5-sw71>

Miller R., & Bairoliya, N. (2020). Parental Caregiving and Household Power Dynamics. Care Work and the Economy Project Working Paper Series: 20-05. Program on Gender Analysis in Economics. American University. <https://doi.org/10.17606/dr9x-vn55>

Garcia, I. G., Seom B. S. & Floro, M. S. (2020). Norms, Gender Wage Gap and Long-Term Care. Care Work and the Economy Project Working Paper Series: 20-11. Program on Gender Analysis in Economics. American University. <https://doi.org/10.17606/7E2K-1508>

Onaran, Ö., Oyvat, C. & Fotopoulou, E. (2019). Gendering Macroeconomic Analysis and Development Policy: A Theoretical Model for Gender Equitable Development. Care Work and the Economy Project Working Paper Series: 19-04. Program on Gender Analysis in Economics. American University.

Vasudevan, R. & Raghavendran, S. (2019). Microfinance and the Care Economy. Care Work and the Economy Project Working Paper Series: 19-03. Program on Gender Analysis in Economics. American University. <http://doi.org/10.17606/e0ke-tt52>

DAY NINE

[Watch Day 9 Lectures](#) 

Session 9.1 Introduction to Social Accounting Matrices and Computable General Equilibrium Models

Instructor: Martín Cicowiez

A social accounting matrix (SAM) is an economywide consistent representation of the payments in an economy, linking production, primary factors, and institutions (typically, households, government, and the rest of the world). In the words of Round (2003), “it is a comprehensive, flexible, and disaggregated framework which elaborates and articulates the generation of income by activities of production and the distribution and redistribution of income between social and institutional groups.” Typically, a SAM refers to the economy of a country for one year. It may be used to describe the structure of an economy and as a data input to economic models, most importantly CGE models such as GEM-Care (see below). The fact that they are consistent assures that they do not contain contradictory pieces of information. Most features of a SAM for GEM-Care are familiar from SAMs used for other models.

A CGE model is a representation of a real economy that is solved numerically and covers the whole economy, almost invariably split into multiple sectors. The first CGE model, applied to Norway, was developed in the late 1950s (Johansen 1960). Since the late 1970s, the field of CGE modeling has expanded rapidly. At this point, multiple models and databases have been developed for virtually every country.

Mathematically, a CGE model is a system of simultaneous non-linear equations; the key data source is a social accounting matrix (SAM). The equilibrium aspect of the model refers to the fact that, under each solution, agents are assumed to have reached “optimal” decisions; this typically means that, subject to budget constraints, producers and consumers maximize profits and utility, respectively, while government decisions respect a set of rules (for example, to tax based on policy-determined rates and to adjust domestic financing to respect its budget constraint). Similarly, the economy lives under a budget constraint in its dealings with the rest of the world (represented by the balance of payments). In markets for products and factors, the quantities supplied and demanded (including stock changes) must be equal; accordingly, it is not possible to use a product that is without an explicit supply source and, if something is supplied, it must end up in some destination that also is identified. Prices play a key role, clearing most markets in the context of government policy interventions and international trade; however, models may

be designed to mimic other clearing mechanisms whenever they are relevant. For labor, unemployment may be modeled explicitly, permitting unemployment and employment levels to vary according to changes in economic conditions.

Policy Areas Addressed by CGE Models

The models provide a laboratory for simulations of the impact of alternative policies and other shocks (or combinations of shocks) at a minimal cost. Real-world experiments are not possible at the macro level, do not consider second-round effects, and considerably more costly (in relevant micro applications). CGE models have been used to analyze a wide range of issues, often selected in response to the policy concerns of national governments and international institutions. Detailed aspects of model structure and disaggregation determine what kinds of issues a model can address; i.e., when some specific issues have been singled out for analysis, it is important to develop (design and/or adjust) model and database. Over the years, policy areas that often have been addressed include international trade (trade policies and world price shocks); fiscal issues (esp. taxation); poverty and income distribution; sector policies; labor markets; and issues related to natural resources, energy, and the environment. In general, CGE models are appropriate for medium- to long-run analyses of shocks that have significant repercussions beyond the sector or household that is affected most directly (and often end up being affected indirectly, via feedbacks). In this context, one important feature of CGE models is their ability to capture links between different parts of an economy (for example, links between production sectors via intermediate demands, and links between household incomes from production and household demands with a feedback impact on production). On the other hand, CGE models are typically not appropriate for the analysis of many issues that are at the center of macroeconomics, including short-run responses to economic shocks (as the equilibrium assumptions of CGE models tend to be violated) and issues related to the financial sector (as it is treated in a very simple manner).



[Training Material for Social Accounting Matrices \(SAMs\) and Computable General Equilibrium \(CGE\) Models for Care and Gender Analysis](#)

Main Readings

- Round, Jeffery (2003). Constructing SAMs for Development Policy Analysis: Lessons Learned and Challenges Ahead. *Economic Systems Research* 15 (2): 161-183.
- Kehoe, Patrick J. and Kehoe, Timothy J. (1994). A Primer on Static Applied General Equilibrium Models. *Federal Reserve Bank of Minneapolis Quarterly Review* 18 (1).

Assigned Readings

- Lofgren, Hans and Cicowiez, Martin (2017). Building Macro SAMs from Cross-Country Databases: Method and Matrices for 133 Countries. World Bank Policy Research Working Papers 8273.
- Robinson, S., Yúnez-Naude, A., Hinojosa-Ojeda, R., Lewis, J.D. and Devarajan, S. (1999). From stylized to applied models: Building multisector CGE models for policy analysis. *The North American Journal of Economics and Finance* 10 (1): 5-38.
- Burfisher, Mary E. (2021). *Introduction to Computable General Equilibrium Models*. Cambridge University Press.

Optional Activity

Install ISIM and GAMS. ISIM is a user-friendly interface for running CGE models through Excel. GAMS is the programming language that we use to code CGE models, including GEM-Care (Note: due to license restrictions, students will be able to run small models.) To download and install ISIM and GAMS, follow the instructions in ISIM-Download+Installation-Instructions-2019-11-28.pdf.

Session 9.2 Levy Macro-Micro Model (Part I)

Instructors: Ajit Zacharias and Thomas Masterson

Feminist economics has long emphasized the role of physical and social infrastructure as determinants of the time women spend on household production (the provision of unpaid domestic services and care). There is a consensus among economists and policymakers that additional public expenditures are required to improve the physical and care infrastructure, especially in developing countries. The research discussed in the four sessions of the course elaborates one approach of modeling the macroeconomic and microeconomic impacts of such expenditures. We present a disaggregated and fully articulated macroeconomic model based on the social accounting matrix for Ghana to take account of the intersectoral linkages and external constraints, such as the balance of payments, that are particularly important for many developing nations, including Ghana. The income and employment impacts estimated by the macroeconomic model are incorporated into a microsimulation model of time and consumption poverty. The unified analytical framework enables the investigation of the gendered economic processes and outcomes at the macroeconomic and microeconomic levels.

Main Readings

Required readings for the sessions are sections of the following research report (referred to below as Zacharias et al. (2019):

Zacharias, A., Masterson, T., Rios-Avilla, F., Nikiforos, M., Kim, K., & Khitarshvili, T. (2019). *Macroeconomic and Microeconomic Impacts of Improving Physical and Social Infrastructure: A Macro-Micro Policy Model for Ghana and Tanzania* (September). Levy Economics Institute of Bard College. Available at: <http://www.levyinstitute.org/publications/macroeconomic-and-microeconomic-impacts-of-improving-physical-and-social-infrastructure-a-macro-micro-policy-model-for-ghana-and-tanzania>

DAY TEN

[Watch Day 10 Lectures](#) 

Session 10.1 Levy Macro-Micro Model (Part 2): Macro modeling of Policy Interventions

Instructors: Ajit Zacharias and Thomas Masterson

We discuss the specification and estimation of our macroeconomic model. Our model is based on the social accounting matrix (SAM) for Ghana (2013). We outline the changes we made to the standard specification to incorporate the preponderance of informal activities in Ghana. Another modification consists of integrating the early childhood education activities as a sector in the SAM. The other crucial aspect of specification pertains to the closure rules of the model. In effect, the closure rules indicate the theoretical premise of the model. For this reason, we contrast our heterodox specification with the mainstream marginalist specification. Finally, we will present our estimates of the macroeconomic impacts of the additional public expenditures required for the policy interventions.

Main Reading

Zacharias et al. (2019), Chapter 3, Sections 3.1, 3.2, 3.3.1, 3.4, 3.5, 3.8.1

Additional Reading

Taylor, L. (Ed.). (1990). *Socially relevant policy analysis: Structuralist computable general equilibrium models for the developing world*. MIT Press., Sections from Chapter 1: 1.1-1.4

Sessions 10.2 Overview and Policy Interventions

Instructors: Ajit Zacharias and Thomas Masterson

We provide the context and motivation for the model by briefly discussing relevant prior literature. We then turn to an overview of the macro-micro model. We also specify the policy interventions—the complete repair of all roads in poor condition and raising the enrollment rate for 0–3-year-olds to 31 percent. The challenge of data requirements to model the interventions and ways to overcome them will also be outlined.

Main Reading

Zacharias et al. (2019), Chapter 1 and Section 2.1 from Chapter 2

Additional Reading

Fontana, M., & Elson, D. (2014). Public policies on water provision and early childhood education and care (ECEC): Do they reduce and redistribute unpaid work? *Gender & Development*, 22(3), 459–474. <https://doi.org/10.1080/13552074.2014.963320>

DAY ELEVEN

[Watch Day 11 Lectures](#) 

Sessions 11.1 – 11.2 Levy Macro-Micro Model (Part 3): Micro modeling of Policy Interventions –Employment Impacts

Instructors: Thomas Masterson and Ajit Zacharias

Having produced changes in employment at the macroeconomic level, we can move on to simulating the changed distribution of employment at the microeconomic level. We present our approach to this simulation problem, which begins with identifying a pool of potential job recipients and the corresponding types of jobs they would be most likely to enter given current labor market conditions. We use this information to assign newly-created jobs to individuals and then to estimate their likely earnings and hours of work in their new jobs. We then use all of the information generated to find individuals already working that are most like the potential job recipients. A final step involves comparing new earnings to an estimate of each potential job recipient's contributions to family income via their work on the family farm or non-farm enterprise.

Main Reading

Zacharias et al. (2019), Chapter 4, sections 4.4, 4.4.1, Appendix C, sections C.1, C.2

DAY TWELVE

[Watch Day 12 Lectures](#) 

Session 12.1 Levy Macro-Micro Model (Part 4): Micro modeling of Policy Interventions II--Time Use Impacts

Instructors: Thomas Masterson and Ajit Zacharias

The social and physical infrastructure investments we model have both direct and indirect impacts on time use. The direct impacts are reduced required household production hours for households whose children enroll in new pre-K programs and reduced travel times (to work and market) for those living in areas with improved roads. The indirect impacts result from the reshuffling of responsibilities for household production within households affected by employment changes.

Main Reading

Zacharias et al. (2019), Chapter 4, sections 4.1, 4.2, 4.3.1

Session 12.2 A Primer on GEM-Care: Introducing SAM for GEM-Care

Instructor: Martín Cicowiez

GEM-Care is a gendered dynamic CGE model designed for country-level policy analysis focusing on issues relevant to the requirements of care and gender analysis. It has benefitted from the literature on gendered CGE modeling. GEM-Care is a multi-purpose template model. While it includes specific features important to its focus, it can address a broader range of topics typically relevant for CGE analysis, including growth, fiscal space, external shocks, poverty, and inequality. The dynamics of the model are recursive: actors are assumed to be myopic, making decisions based on data for the current year, which are influenced by past decisions.

The small but growing literature on gendered SAM-based CGE models has demonstrated the ability of the CGE approach to generate important insights about gender-differentiated effects of economic policies. This section briefly surveys major contributions, taking note of their structure, data needs, and policy coverage. It also situates the model and analysis of this paper in the context of this literature, discusses

some of the features of the proposed model, and takes note of some of the outstanding challenges for gender-sensitive CGE modeling.

The gendered CGE models may be split into two groups. The first introduces a gender disaggregation of labor in the production sphere that, according to the System of National Accounts (SNA), is part of GDP. The second group goes beyond GDP by extending the model to cover household service production for own consumption, also in this sphere with a gender disaggregation of labor. The latter services include what often is referred to as care or social reproduction. Given that the second group of models views the time that is available to different household members more comprehensively, they also tend to cover leisure. The coverage of the databases (most importantly the SAMs) that accompany the models in each of these two groups reflect whether they are limited to or go beyond the GDP sphere.


Main Reading

Lofgren, H., Kim, Kijong, Fontana, M. and Cicowiez, M. (2020). A gendered social accounting matrix for South Korea. Paper prepared for the project “The Care Economy and Gender-Sensitive Macroeconomic Modelling for Policy Analysis,” American University, Washington, D.C.
(Available at: <https://research.american.edu/careworkeconomy/cwe-gam-working-paper-series/>)

Additional Reading

Fontana, M. and Wobst, P. (2001). A gendered 1993-94 Social Accounting Matrix for Bangladesh. IFPRI TMD Discussion Paper.

DAY THIRTEEN

Watch Day 13 Lectures 

Sessions 13.1 – 13.2 Description of GEM-Care, CGE Model Focused on the Analysis of Care I

Instructor: Martín Cicowiez

GEM-Care is a gendered dynamic CGE model designed for country-level policy analysis with a focus on issues relevant to care. The starting point for the model specification is GEM-Core (Cicowiez and Lofgren 2017), which in its turn draws on Lofgren et al. (2013) and Lofgren et al. (2002). GEM-Core has been extended and adapted to the requirements of care and gender analysis, benefitting from the literature on gendered CGE modeling briefly surveyed above. Like GEM-Core and its predecessors, GEM-Care is a multi-purpose template model since, while it includes specific features important to its focus, it can address a wider range of topics that typically are relevant for CGE analysis, including growth, fiscal space, external shocks, poverty, and inequality. The dynamics of the model is recursive: actors are assumed to be myopic, making decisions on the basis of data for the current year, which are influenced by past decisions.

Motivated by our focus on care and gender, the following extensions were brought into GEM-Care: (a) a nested production structure that disaggregates time use by gender and, in addition to GDP production, covers leisure and household services produced for own consumption; (b) a nested structure of household consumption that captures household choices between own production and market supplies to meet its demands for care and other services; (c) interhousehold transfers in the form of unpaid care labor; (d) transfers from government to households in the form of care services; and (e) an extension of the producer first-order conditions for labor hiring that makes it possible to analyze the consequences of wage discrimination (i.e., wage differences that are unrelated to marginal productivity differences).

Main Readings

Lofgren, H. and Cicowiez, M. (2020). GEM-Care: A gendered dynamic general equilibrium model for analysis of care policies. Paper prepared for the project “The Care Economy and Gender-Sensitive Macroeconomic Modelling for Policy Analysis,” American University, Washington, D.C.A available at: <https://research.american.edu/careworkeconomy/cwe-gam-working-paper-series/>

Additional Readings

Fontana, M. and Wood, A. (2000). Modeling the Effects of Trade on Women, at Work and at Home. *World Development* (28) 7: 1173–90.

Fontana, M. (2013). Gender in Economy-Wide Modelling. In Rai, S.M. y Waylen, G. (eds.). *New Frontiers in Feminist Political Economy*. Routledge.

DAY FOURTEEN

Watch Day 14 Lectures 

Sessions 14.1 -14.2 Description of GEM-Care, CGE Model Focused on the Analysis of Care II

Instructor: Martín Cicowiez

Fontana and Wood (2000) were the first to extend a gendered CGE model to household production, i.e., going beyond GDP production. This adds to data requirements but has the important advantage of transcending the artificial boundary between time spent on GDP production and (often larger amounts of) time spent on production of household services for own consumption and leisure. As a result, it becomes possible to consider the impact (including gender aspects) of changes in market work on time spent on leisure and household work, all of which in different ways contribute to household and individual well-being, including various trade-offs. The terminology for and extent of disaggregation of household work have varied but reference is often made to social reproduction, an activity that may be further disaggregated into activities like different types of care, cooking, cleaning, washing, and shopping. Both the initial contribution by Fontana and Wood and subsequent contributions have focused on trade-related policy simulations. This narrow focus suggests that studies on other issues, like care policies in this paper, could yield new insights at the same time as they may lead to enriched model formulations and impose new data requirements.

In an analysis of Ethiopia, Ruggeri Laderchi et al. (2010) developed a gendered version of MAMS (Maquette for Millennium Development Goal Simulations), a recursive dynamic CGE model designed for medium- and long-run policy analysis that covers indicators related to the Millennium Development Goals (MDGs). The model applies the Fontana and Wood approach to household production and gender. Its innovative aspects lie in its treatment of the educational system: it is split into three levels with endogenous and gendered entry, graduation, dropout, and repetition. Students exiting from the educational system enter the segment of the labor market that corresponds to their educational attainment in shares that reflect data on labor force participation. Those who leave school early wait until they reach labor force age. Model simulations analyzed the impact of rapid expansion in the educated female labor force on wages, employment and household services and how these impacts are conditioned by labor market segmentation and productivity growth within household services.

Future research will likely generate methodological advances that help analysis based on gendered CGE models contribute to emerging policy debates. One broad area is related to policymaking in the context of a global rise in female labor force participation – what impact may different policies have on wages, household production, welfare, and inequality, including both gender-specific and more aggregate indicators? The analysis in the rest of this paper is an example of this: East Asia faces important gender-related policy challenges in the context of little (or no) growth for the working-age population, low rates of female labor force participation, rapid growth in an elderly population that needs care, and gender inequalities both in the household and market spheres.

As female participation in GDP work increases, it is important to try to better understand the mechanisms that generate lower wages for women, the impacts of wage gaps, and how they may be overcome. This is important in the context of South Korea: In 2010, its gender pay gap was almost 40 percent, the largest among OECD countries with data (Cahuc et al. 2014, pp. 481-482). Lower wages are related to the concentration of female employment in occupations and sectors in which wages are relatively low. However, also within sectors, women tend to earn lower wages; this may be due to differences in productivity (which in their turn may be due to differences in experience and education, both related to differences in work tasks) or wage discrimination (wage differences that are not associated with productivity differences). While wage discrimination seems to be common, it is difficult to come up with exact measures since it is hard to measure productivity.

Another broad and challenging area revolves around the impact of different types of consumption and investment on the accumulation of human capital and growth. The education analysis in the Ethiopia MAMS application touches on this aspect. However, this analysis could be extended to consider the links between, on one hand, growth and human capital accumulation and, on the other hand, the consumption of prepared food, care, and education services, supplied by the market and households.

Main Readings

Cahuc, Pierre, Stéphane Carcillo, and André Zylberberg. 2014. *Labor Economics*. Second Edition. MIT Press.

Ruggeri Laderchi, Caterina, Hans Lofgren, and Rahimaisa Abdula. 2010. "Addressing gender inequality in Ethiopia: trends, impacts, and the way forward." *In Gender Disparities in Africa's Labor Market*, edited by Jorge Saba Arbache, Alexandre Kolev, and Ewa Filipiak, 193-227. Agence Française de Développement and the World Bank.

Fontana, Marzia and Wood, Adrian (2000). Modeling the Effects of Trade on Women, at Work and at Home. *World Development* (28) 7: 1173–90.

DAY FIFTEEN

Watch Day 15 Lectures 

Sessions 15.1 – 15.2 GEM-Care Applications: Scenario Definition and Analysis of Results

Instructor: Martín Cicowiez

Future research will likely generate methodological advances that help analysis based on gendered CGE models contribute to emerging policy debates. One broad area is related to policymaking in the context of a global rise in female labor force participation – what impact may different policies have on wages, household production, welfare, and inequality, including both gender-specific and more aggregate indicators? The analysis in the rest of this paper is an example of this: East Asia faces important gender-related policy challenges in the context of little (or no) growth for the working-age population, low rates of female labor force participation, rapid growth in an elderly population that needs care, and gender inequalities both in the household and market spheres.

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Another broad and challenging area revolves around the impact of different types of consumption and investment on the accumulation of human capital and growth. The education analysis in the Ethiopia MAMS application touches on this aspect. However, this analysis could be extended to consider the links between, on one hand, growth and human capital accumulation and, on the other hand, the consumption of prepared food, care, and education services, supplied by the market and households.

Main Reading

Cicowiez, M. and Lofgren, H. (2021). Child and Elderly Care in South Korea: Policy Analysis with a Gendered, Care-Focused Computable General Equilibrium Model. Paper prepared for the project “The Care Economy and Gender-Sensitive Macroeconomic Modelling for Policy Analysis,” American University, Washington, D.C.

Additional Reading

Arora, Diksha and Rada, Codrina (2020). Gender Norms and Intrahousehold Allocation of Labor in Mozambique: A CGE Application to Household and Agricultural Economics. *Agricultural Economics* 51 (2): 259-272.

Intensive Course in Gender-Sensitive Macroeconomic Modeling for Policy Analysis

Course Instructors

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Elissa Braunstein is Professor of Economics at Colorado State University in Fort Collins, as well Editor for the journal *Feminist Economics*. Most recently she worked for 2.5 years as a Senior Economist and Head of the unit on Economic Cooperation and Integration Among Developing Countries at the United Nations Conference on Trade and Development (UNCTAD). Her work focuses on the international and macroeconomic aspects of development, with particular emphasis on economic growth, macro policy, social reproduction and gender. She publishes widely in both academic and policy venues and serves as a consultant for a number of international development institutions, including the International Labour Organization, the World Bank, the United Nations Research Institute on Social Development, and UN Women. She holds a Ph.D. in economics from the University of Massachusetts Amherst, and a Master's of Pacific International Affairs from the School of Global Policy and Strategy at the University of California San Diego.

Martín Cicowiez

Universidad Nacional de La Plata

Martín Cicowiez is Professor at Universidad Nacional de La Plata in Argentina and Researcher at the University's Center for Distributional, Labor and Social Studies (CEDLAS). He holds a PhD in Economics from Universidad Nacional de La Plata. He specializes in the application of Computable General Equilibrium models and microsimulations to the assessment of policies and external shocks. He has published numerous articles in academic journals and edited volumes and coauthored five books. He has worked for international organizations such as the UN-DESA, UNDP, FAO, ILO, the World Bank, IDB, AfDB, UN-ECLAC, UN-ESCWA, ALADI, and PEP.

Maria S. Floro

American University

Maria S. Floro is Professor Emerita of Economics at American University (AU). She served as Principal Investigator of the Care Work and the Economy (CWE-GAM) project 2017 – 2021. She is Special Adviser of the Care Economy Africa Adaptation Project and part of the Care Economies in Context Project. She served, for the most part, as co-Director of the Program on Gender Analysis in Economics (PGAE) at American University since it was established in 2008. Her publications include co-authored books on *Informal Credit Markets and the New Institutional Economics*, *Women's Work in the World Economy*, and *Gender, Development, and Globalization: Economics as if All People Mattered* and articles on gender and development strategies, care and unpaid work, time use and well-being, environment and ecological crises, vulnerability, food security and migration, poverty, household savings, credit, and urban informal sector.

Nancy Folbre

University of Massachusetts Amherst

Nancy Folbre's research explores the interface between political economy and feminist theory, with a particular emphasis on the value of unpaid care work and the size of care penalties. In addition to numerous articles published in academic journals, she is the editor of *For Love and Money: Care Work in*

the U.S. (Russell Sage, 2012), and the author of *Greed, Lust, and Gender: A History of Economic Ideas* (Oxford, 2009), *Valuing Children: Rethinking the Economics of the Family* (Harvard, 2008), and *The Invisible Heart: Economics and Family Values* (New Press, 2001). She has also written widely for a popular audience, including contributions to the New York Times Economix blog, *The Nation*, and the *American Prospect*.

Paula Herrera-Idárraga

University of Massachusetts Amherst

Paula Herrera-Idárraga is an associate Professor at Javeriana University. Her research interests include labor economics, regional economics and gender economics. She obtained her Ph.D. in Economics from the University of Barcelona. Her research has been focused on topics related to educational mismatch, informality, regional inequalities and gender discrimination for Colombia. Her research documents the relationship between informality and education-occupation mismatches in an emerging country such as Colombia. Her work also recognizes the regional wage inequalities and the role of education and informality for explaining these disparities. Her most recent research focus is how a national policy that lowered payroll taxes could also explain the decrease in wage gaps between cities in Colombia. Her articles have been published in academic journals such as *The Journal of Development Studies*, *Spatial Economic Analysis* and *Regional Studies*.

Tom Masterson

Levy Economics Institute at Bard College

Thomas Masterson is director of applied micromodeling and a research scholar in the Levy Economics Institute's Distribution of Income and Wealth program. He has worked extensively on the Levy Institute Measure of Well-being (LIMEW), an alternative, household-based measure that reflects the resources the household can command for facilitating current consumption or acquiring physical or financial assets. With other Levy scholars, Masterson was also involved in developing the Levy Institute Measure of Time and Income Poverty (LIMTIP), and has contributed to estimating the LIMTIP for countries in Latin America, Asia, and Africa. He has also taken a lead role in developing the Levy Institute Microsimulation Model. Masterson's specific research interests include the distribution of land, income, and wealth, with a focus on gender and racial disparities. He has recently published articles in the *The Review of Black Political Economy* and *The Journal of Economic Issues*. He holds a Ph.D. in economics from the University of Massachusetts, Amherst.

Ito Peng

University of Toronto

Ito Peng, Ph.D. is a Professor of Sociology and Public Policy, and Canada Research Chair in Global Social Policy at the Department of Sociology, and the School of Public Policy and Governance, University of Toronto. She has written extensively on social policies and social and political economy of care in East Asia. She teaches and researches on comparative social policy, specializing in family, gender, employment and migration policies in East Asia and Asia Pacific. She leads the Gender, Migration, and the Work of Care Program, an international partnership research project funded by Social Sciences and Humanities Research Council of Canada. She is also a distinguished fellow of Asia Pacific Foundation of Canada, and a Research Associate at United Nations Research Institute for Social Development (UNRISD) and UN Women. Her new book (2017), co-edited with Sonya Michel, is called *Gender, Migration and the Work of Care: A Multi-Scalar Approach to the Pacific Rim*.

Jooyeoun Suh

American University

An economist by training, Joo Yeoun Suh is a faculty fellow at the Department of Economics, American University. Suh's research works to shed light on the economic significance and societal contributions made, focusing on measurement and valuation issues regarding unpaid family care, including child care and elder care, and building satellite accounts that add the value of care work to national accounting systems. She previously led a program at AARP to measure, depict, and promote the economic and social contributions made by Americans 50 and older and served as a fellow at the Institute for Women's Policy Research (IWPR), a leading national think tank that builds evidence to shape policies that influence and close inequality gaps to improve the economic well-being of families.

Ana Maria Tribin
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Ana Tribin is a public policy specialist at UNDP-LAC. She holds a Master's and a Ph.D. in economics from Brown University. She previously worked at the Colombian Central Bank as Senior Research Economist and as the President's High Commissioner for Women's Equality with the Colombian Government. Her areas of research are gender, migration, and development economics. She is the author of several papers published in international and national books and journals (*World Development*, *Feminist Economics*, *Journal of the European Economic Association*, and *European Journal of Political Economy*) and a book editor.

Ajit Zacharias
Levy Economics Institute at Bard College

Ajit Zacharias is a senior scholar and director of the Levy Institute's Distribution of Income and Wealth program. His research primarily focuses on the theory, measurement, and analysis of economic well-being and deprivation. Along with other Levy scholars, Zacharias has developed alternative measures of economic welfare and deprivation. The Levy Institute Measure of Economic Well-Being (LIMEW) offers a framework that accounts for how changes in labor markets, wealth accumulation, government spending and taxes, and household production shape the economic determinants of standard of living. Levy scholars have utilized the LIMEW to track trends in economic inequality and well-being in the United States. The Levy Institute Measure of Time and Income Poverty is aimed at revealing the nexus between income poverty and unpaid work. This measure has been applied to the study of poverty in several Latin American countries, Turkey, South Korea, Tanzania, and Ghana.

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