

# Science and Technology Group Annual Report FY2023

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## 1 Introduction

I am a labor economist. In my research I use empirical and modeling methods to study different questions related to inequality, social mobility, labor markets, health, and fertility. In particular, I am interested in policy implication and policy evaluations.

## 2 Activities and Findings

During FY2023, I mostly worked on two projects, related to KAKENHI grants that I received in 2022-2023.

### 1. Fertility and Family-Friendly Policies

Family-friendly policies are meant to help women balance work and family life and to encourage them to enter and stay in the labor market. Implicitly or explicitly, such policies also encourage fertility since having a child makes the balancing act much harder for working women. How effective are such policies in increasing fertility? We answer this question using a search model where firms make hiring, promotion, and firing decisions. In the model, all jobs start as temporary with a low firing cost, and if a promotion takes place, they become permanent with a higher firing cost. Women decide whether or not to participate in the labor market and, if they do, whether or not to accept offers from firms, accumulating human capital as they work. They also decide how many children to have and when to have them. Hiring a woman is costly for a firm, both directly, in production, and indirectly, through high turnover. The analysis focuses on Spain, a country with very low fertility and a highly-regulated labor market. We use administrative data from the Spanish Social Security records to discipline the model and to evaluate the effects of the Family Reconciliation Act of 1999, which allowed workers with children younger than 6 years old to work part-time and be protected against dismissals or layoffs. Finally, we use the model to study a battery of policies that make firing and promotion harder or easier for women. We show that firms' reactions to family-friendly policies generate a trade-off: policies that increase fertility result in lower average earnings, and larger gender wage gap.

### 2. Health and Intergenerational Mobility

Health is an important dimension of human capital, it affects the way children can use and develop their cognitive and non-cognitive abilities. While the role of education and education policies received a lot of attention in the literature on intergenerational mobility, almost nothing is known on how medical policies affect intergenerational mobility and inequality. In this project, I develop and estimate a human-capital based overlapping generations model of household decisions that take into account multidimensionality and dynamic nature of human capital investments. I distinguish three forms of human capital: health capital and human capital (cognitive and non-cognitive abilities), and model explicitly government policies in education and health, as well as parental decisions regarding their monetary and time investments into cognitive and non-cognitive abilities, as well as health (curative and preventive spending). This work is heavily based on my previous unpublished work during PhD. The project is at the stage of programming a model now. The data work is mostly done during this year.

## 3 Collaborations

1. Complex vaccination strategies prevent the emergence of vaccine resistance.  
*Collaborators:* Simon Rella (PhD student, IST Austria), Aygul Minnegalieva (technician, OIST) and Fyodor Kondrashov (Professor, OIST)
2. Family-Friendly Policies and Fertility: What Firms Got to Do With It?

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*Collaborators:* Olympia Bover (Director of Department of Structural Analysis and Microeconomic Studies Department, DG Economics, Statistics and Research, Bank of Spain), Nezhil Guner (Director and Professor of Economics at CEMFI), Alessandro Ruggieri (Assistant Professor, CUNEF), Carlos Sanz (Research Economist, Bank of Spain)

3. Does the Added Worker Effect Matter?

*Collaborators:* Nezhil Guner (Director and Professor of Economics at CEMFI) and Arnau Valladares-Esteban (Assistant Professor, University of St.Gallen)

4. Life is about timing: Age at cardiovascular health shocks and its role for survival and socioeconomic inequalities across the life cycle.

*Collaborators:* Michael Kuhn (Director of Economic Frontiers Program, IIASA), Sonja Spitzer (PostDoc, University of Vienna), Vanessa di Lego (Post-doc Research scientist, Vienna Institute of Demography, Austrian Academy of Sciences (OeAW))

## 4 Publications and other output

Author list, *Title*, Journal or other reference, volume information (year)

### Research papers:

Papers submitted in FY2022, are still not published, but revised and resubmitted:

- Complex vaccination strategies prevent the emergence of vaccine resistance (with Simon Rella, Aygul Minnegalieva and Fyodor Kondrashov) resubmitted
- Does the Added Worker Effect Matter? (with Nezhil Guner and Arnau Valladares-Esteban) R&R in Review of Economic Dynamics

### Presentations:

- “Family-Friendly Policies and Fertility: What Firms Got to Do With It?”: SETA Conference (Singapore), EAEA Conference (Seoul)
- “Does the Added Worker Effect Matter?” OIST STG Forum 2024
- “Health and Health Policies” University of Tokyo, Economics Department, seminar

### External Funding:

- KAKENHI Start-Up Grant, FY2022-2024 – 2,860,000 yen
- KAKENHI Early Career Scientist, FY2023-2025 – 4,680,000 yen
- COI-NEXT “Healthy Mind, Healthy Body, Healthy Environment” – 10 mln yen for FY2024, amount to be confirmed upon evaluation for FY2025-2026