



UMEÅ UNIVERSITET

# Essays on Labor Supply, Pension Policy, and Inequality

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## Akademisk avhandling

som med vederbörligt tillstånd av Rektor vid Umeå universitet för avläggande av filosofie doktorexamen framläggs till offentligt försvar i UB.A.210 - Lindellhallen 1, Samhällsvetarhuset, 27 augusti, kl. 13:15. Avhandlingen kommer att försvaras på engelska.

Fakultetsopponent: Docent, Spencer Bastani, Institute for Evaluation of Labour Market and Education Policy (IFAU), Uppsala, Sweden.

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**Abstract**

**Paper [I]** analyzes the dynamic properties of life-cycle earnings in Sweden using microdata. We study the evolution of permanent and transitory earnings inequality over the period 2002--2015. Our data comes from administrative records gathered in the ASTRID database. We find that some features of the data do not match the predictions of the heterogeneous or restricted income profile models commonly applied in the earning dynamics literature. Instead, we estimate an alternative permanent-transitory (PT) error components model. Analyzing the covariance structure of both male and female earnings, controlling for educational background, we find that the upward trend in permanent earnings inequality observed in Sweden during the 1990s does not continue in the 2000s, and the financial crisis of 2008 did not have any major impact on the variability of earnings. We further simulate the accumulation of income pension entitlements and find that variations in pension entitlements are smaller among college-educated workers.

**Paper [II]** studies the life-cycle effects of favorable marginal tax treatment on older workers' optimal life-cycle labor supply, retirement timing, and savings. I develop a structural model in continuous time where the life cycle of a representative agent is divided into three distinct phases: pre-treatment, post-treatment, and retirement. Solutions for consumption and savings, labor supply and leisure, and retirement timing are then obtained by solving the model as a salvage value problem. I then calibrate the model to Swedish earnings data and find that the increased extensive margin labor supply is partially offset by a reduction in hours worked during the pre-treatment period. The total effect, however, is an increase in life-cycle labor supply and consumption.

**Paper [III]** studies the implications of the structure of public pension programs for the trade-offs determining economic behavior over the life cycle. The economy is modeled as a continuous time overlapping generations model with endogenous labor supply, savings, and human capital formation. Individuals differ in ability and are free to choose how much to work at each period in time and when to enter and exit the labor market. Numerical simulations provide qualitative insights that a redistributive pension system introduces opposite effects on the incentives for retirement for high- and low-skilled individuals, which leads to increased earnings inequality. This effect can, in turn, dominate reduced pension inequality such that lifetime and population-wide income inequality increase. Ultimately, the equity--efficiency trade-off is found to be difficult to characterize.

**Paper [IV]** explores the effects of pension illiteracy on aggregate labor supply and the redistributive performance of public pension systems. I consider an overlapping generations model in continuous time populated with individuals who differ in labor productivity and pension literacy. Agents suffering from pension illiteracy fail to fully account for the structure of the pension system when planning their economic behavior over the life cycle. In particular, I assume that myopic agents treat changes to replacement income as exogenous in the active-retired trade-off and contributions to the pension system as a pure labor income tax. I find that pension illiteracy can negatively impact aggregate labor supply and increase earnings inequality and lifetime income inequality.

**Keywords**

Permanent-transitory, income pension entitlements, earning dynamics, life-cycle inequality, retirement age, life cycle, tax heterogeneity, savings, consumption, leisure, equity-efficiency, inequality, public pension policy, labor supply, myopia, public pension

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