

Changes in Working Time Flexibility and the Effects on Gender Specific Wage Income

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Outline

- 1 Motivation
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- 3 Descriptive Analysis
- 4 Methodological Approach and Results
- 5 Conclusion

Motivation

- Manifold theoretical and empirical research on flexible working time arrangements (WTA) → no new field of research but new focus in political and scientific debates within the last years
- Need of flexibility due to globalization, digitization, ICT, evolving life conditions
- Different focus on outcomes from enhanced flexible WTA: positive (work-life balance, increased productivity, ...) and negative developments (increased levels of stress, illness, ...)

Research Question

Which structural changes regarding working time flexibility in Austria can be observed comparing the years of 2004 and 2015 and what is the effect on wage income in respect of gender differences?

Definition of working time flexibility based on Atkinson (1984):

- Internal numerical flexibility
 - Full-time vs. part-time employment
 - Autonomous vs. fixed schedule

Hypotheses

- H1a: Part-time employment increased in absolute and relative terms for both women and men.
- H2a: Working time autonomy increased for both women and men in all working time arrangements (full-time, regular part-time and marginal part-time).
- H1b: Part-time employment has a positive effect on hourly wage income for both women and men.
- H2b: Working time autonomy has a positive effect on wage income for women and men.
- H2c: The positive effect of working time autonomy is higher for men than for women.

Sample Data

- Source: Statistics Austria
 - Ad hoc modules of the Austrian Labour Force Survey
 - Wage tax data / main association of social insurance carriers
- Observation period
 - 2004: 7476 observations
 - 2015: 9173 / 7522 observations
- Observation unit: employees
- Data Shortcomings
 - No data availability on gross wage income
 - No panel data

Variable Description

- *Contracted weekly working hours*
Factor variable indicating full-time (36h or more), regular part-time (12-36h), or marginal part-time (12h or less)
- *Schedule control flexibility*
Factor variable denoting fixed schedule, some autonomy or full autonomy
- *Hourly net wage*
Compensation of employees including payments for regularly performed overtime, bonuses and remuneration, and a proportion of the thirteenth and fourteenth month payment

Weekly Working Time

Figure: Contracted weekly working hours in 2004 and 2015, women and men



Source: Statistics Austria, own calculations

Figure: Contracted weekly working hours by age class in 2004 and 2015, women

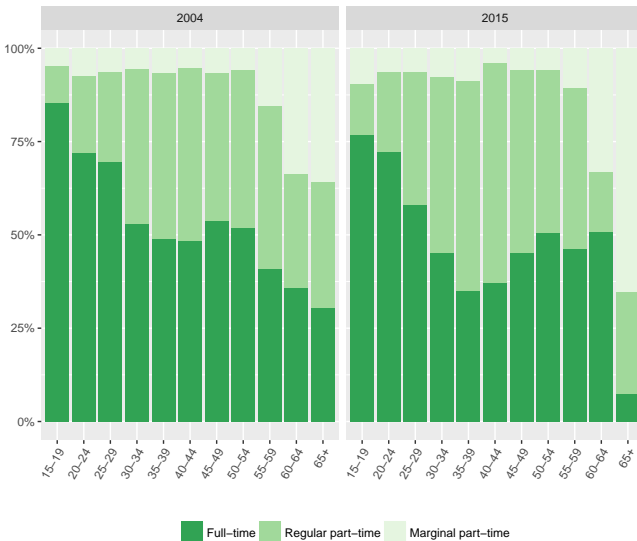
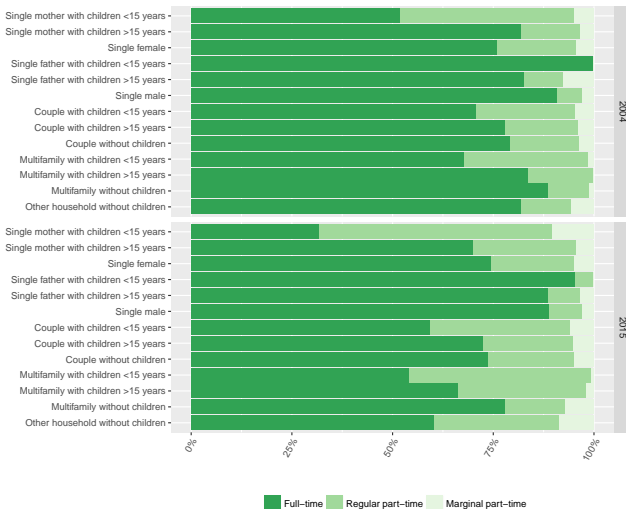


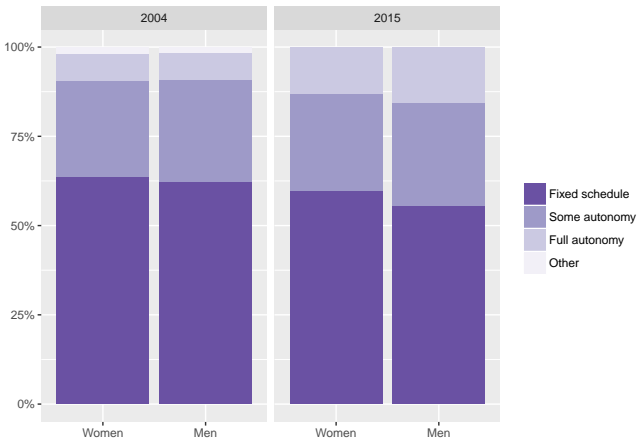
Figure: Contracted weekly working hours by household typ in 2004 and 2015, women



Source: Statistics Austria, own calculations

Daily Working Time

Figure: Schedule control flexibility in 2004 and 2015, women and men



Source: Statistics Austria, own calculations

Figure: Schedule control flexibility by weekly working hours in 2004 and 2015, women

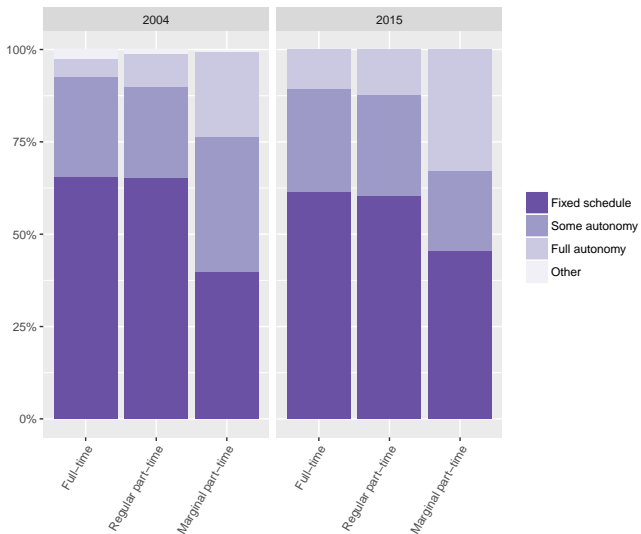
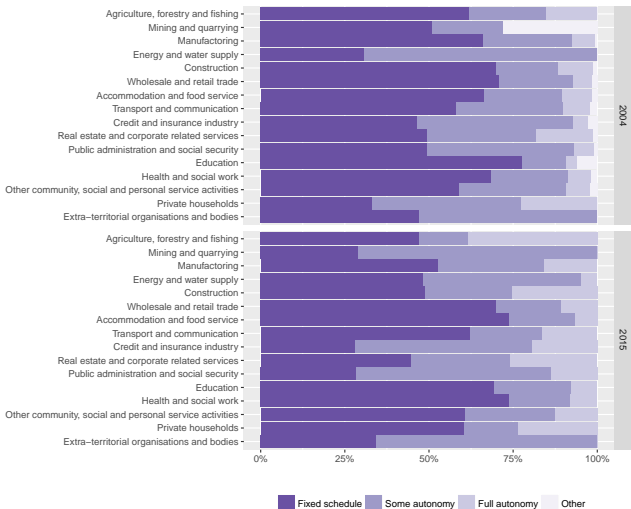


Figure: Schedule control flexibility by economic sector in 2004 and 2015, women



Source: Statistics Austria, own calculations

Econometric Model: Ordinary Least Squares

$$y = \iota\alpha + X\beta + \varepsilon \quad (1)$$

Whereas

- y denotes a N-by-1 vector of observations $i = 1, \dots, N$ on the natural logarithm of hourly net wage income
- X is defined by a N-by-K matrix of the variables of interest (weekly contracted working hours and schedule control flexibility), as well as a set of control variables regarding socio-demographic characteristics, job and firm related variables
- β is the K-by-1 vector associated unknown parameter for X
- ε denotes the N-by-1 vector of disturbances
- $\iota\alpha$ is a scalar parameter associated with the constant

Adapted Econometric Model: Heckman Selection Correction

First Stage:

$$y^{S*} = \iota\alpha + X^S\beta^S + \varepsilon^S \quad (2)$$

where

$$y^S = \begin{cases} 0 & \text{if } y^{S*} < 0 \\ 1 & \text{otherwise} \end{cases} \quad (3)$$

Second Stage:

$$y^{O*} = \iota\alpha + X^O\beta^O + \varepsilon^O \quad (4)$$

where

$$y^O = \begin{cases} 0 & \text{if } y^S = 0 \\ y^{O*} & \text{otherwise} \end{cases} \quad (5)$$

Estimation Results (I): OLS

Results are in line with findings from human capital theory literature

- Socio-demographic variables likewise *age*, *job tenure*, *education*,... are positive and highly significant on hourly net wage for both women and men
- Part-time work has a positive effect for women (part-time premium), no effect for men
- Higher degrees of schedule control flexibility have a positive and significant effect on income for both sexes but in a higher magnitude for men with full autonomy

Estimation Results (II): Heckman Selection Correction

Outcome Regression:

- individual, household, and job related variables are positive and significant on hourly net wage for both full-time working women and men, magnitudes vary in contrast to OLS
 - schedule control flexibility has an even higher effect on hourly net wage income
- IMR coefficient is positive and significant for women only, indicating higher hourly net wage in full-time employment from selective unobservable factors

Conclusion

H1a and H2a are confirmed

- Regular and marginal of part-time increased, however women are much more effected
- Working time autonomy enhanced, especially full autonomy

H1b is partly verified

- Female employees seem to gain a part-time premium
- Effects for males can hardly be detected

H2b and H2c are confirmed

- Both sexes benefit financially from schedule control flexibility
- Men's gains are higher when they have full control over their working schedule

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Appendix

Figure: Schedule control flexibility by weekly working hours in 2004 and 2015, men

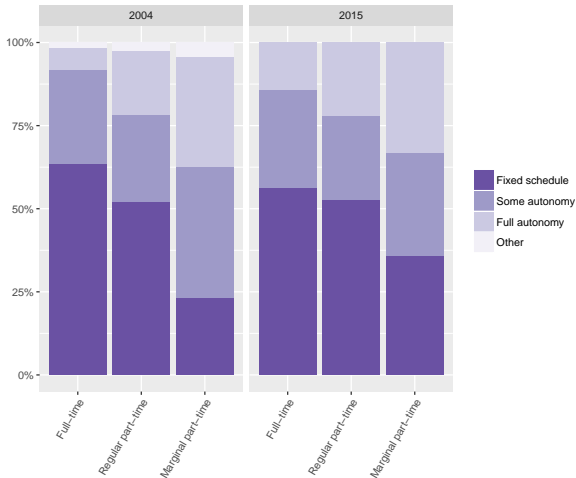


Table: Hourly net wage income regarding contracted weekly working hours

	Mean	25% Quantile	Median	75% Quantile
Women				
Full-time	12.27	9.47	11.42	14.44
Regular part-time	12.53	9.57	11.76	14.54
Men				
Full-time	14.05	10.59	12.99	16.59
Regular part-time	12.84	8.70	11.91	15.49