



Extended Abstract

Occupation-specific lifetime earnings – illustrating the gender wage divide from a life course perspective

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Introduction

Income inequalities between men and women are usually measured via the gender pay gap. The Federal Statistical Office has recently estimated a gender pay gap of 22 % for Germany.¹ Related research from the HWWI based on data from the Socio-oeconomic Panel Study (SOEP) showed that roughly 6 pp of the unadjusted pay gap can be explained with the employee's employment biography. Characteristics related to occupation and occupational position answer for 4 more percentage points, as does the volume of employment.² The occupational segregation of women and men manifests in a female dominated low wage sector whose employees are particularly prone to lay-offs in the course of the minimum wage implementation in Germany.³ These results point to the relevance of the life course perspective of occupational careers for gender specific income inequalities. The gender pay gap, measured at one point in time and at the mean of the whole employed population, does not fully cover this aspect. By neglecting the life course perspective the *gendered earnings inequality over the whole working life is underestimated*.

¹ Cf. Statistisches Bundesamt: Verdienstunterschied zwischen Frauen und Männern in Deutschland weiterhin bei 22 %, Press release 99/15, 16.03.2015, Wiesbaden.

² Cf. Boll, C.; Leppin, J. (2015): Die geschlechtsspezifische Lohnlücke in Deutschland: Umfang, Ursachen und Interpretation, *Wirtschaftsdienst* 95 (4), 249-254.

³ Cf. Boll, C.; Huening, H.; Leppin, J. S.; Puckelwald, J. (forthcoming): Potential Effects of a Minimum Wage on the Gender Pay Gap - A simulation-based Study for Germany.

Research Project

With our investigation, we add the lifetime perspective on gendered earnings. By calculating occupation-specific lifetime earnings of men and women, we develop a measure for the gender specific income inequality over the whole career path. The distinction between occupations is relevant because the occupational choice is a) decisive for the future career and income path and b) differs substantially between men and women.

The following research questions are addressed:

- How does income inequality between men and women relate to different episodes of the education and employment career such as vocational training, career entry, family phase, re-entry into the labour market, years before retirement, and do stage-specific gender earnings gaps vary across occupations?
- To what extent is earnings inequality path dependent?
- Which are the wage penalties of career interruptions and how do they differ between occupations and genders?
- How are within-occupation differences of men and women shaped with respect to career advancements and their returns?
- How do occupation-specific investments impact on the lifetime returns to education?
- Finally: If the gender earnings divide is condensed into the present value of occupation-specific lifetime net earnings, what does the picture look like?

Method

The methodological design of our investigation is based on previous research of Boll (2011) who calculated earnings losses of women in the course of childbirth related career breaks.⁴ The added value of this study compared to its named predecessor is that we distinguish a) between different occupations and b) between men and women. In more detail, the research approach consists of three major components.

First, we run panel regression analyses to estimate the effect of occupational choices and of employment decisions on earned incomes of men and women. We thereby use employees' gross earnings as a target variable, indicating the market value of their human capital. Beyond individual fixed effects, a broad set of observables is taken into account, comprising of individual demographics (age, education, gender, etc.), the individual's employment biography, job features (employment volume, temporary employment, occupation, occupational position, etc.), and firm related characteristics (industry, firm size, tenure, etc.).

⁴ Boll, C. (2011): Lohneinbußen von Frauen durch geburtsbedingte Erwerbsunterbrechungen. Der Schattenpreis von Kindern und dessen mögliche Auswirkungen auf weibliche Spezialisierungsentscheidungen im Haushaltszusammenhang, Eine quantitative Analyse auf Basis von SOEP-Daten, Monografische Dissertationsschrift, Reihe "Sozialökonomische Schriften" (Hrsg.: Prof. Dr. B. Rürup und Prof. Dr. W. Sesselmeier), Verlag Peter Lang, Frankfurt am Main et al.

In a second step, we simulate lifetime earnings profiles. We thereby rely on the regression results from step one and incorporate a series of hypothetical career paths which are deemed to shape prevalent employment patterns in Germany and are derived from the employed data set and eventually external sources. We embody a) occupation-specific as well as b) occupation overarching employment patterns in order a) to shape lifetime earnings in occupation-typical employment careers and b) to compare lifetime earnings across occupations. Furthermore, different earnings effects arise from occupation-specific human capital depreciation and wage growth rates.

To calculate lifetime net earnings in a final step, we incorporate additional parameters relating to occupation-specific educational investments such as training allowances, training duration and fees for accessing full-time vocational schools. We calculate occupation-specific present values by discounting annual net earnings derived from expenses and returns to the occupational investment to the starting point. The latter is set at the beginning of the career. The costs for vocational training are ascertained via external sources. For the discount rate we use the federal bond rate.

Data

We use the sample of integrated employment biographies (Stichprobe integrierter Arbeitsmarktbiografien, SIAB) for our analyses. The SIAB is a 2 %- sample randomly driven from the integrated employment biographies from the IAB and contains information for 1.639 million persons between the age of 17 and 62 over a time from 1975 to 2010. The main advantages of the SIAB data for the research question at hand refer to the high observation number and observation period, reliable income information and occupational information that relates to the actual job. As duration and costs of vocational training are not included in the SIAB, this information is taken from other sources.

Political relevance of the issue

Combating gender inequality in earnings is one goal of the German Federal government to be pursued during the current election period. With our investigation, we strive to contribute to the question how this goal may be achieved in a sustainable manner, in order not only to establish equal opportunities for both genders in the labour market but also to cut down the gender pension gap.