3 A Cohort Analysis of Wage Trends

This cross-section result might be due to cohort effects.

Remark Heard in Many Seminars

Many commentators view the wage structure in West Germany as particularly stable or even as becoming more compressed over time. The descriptive evidence in the previous chapter shows that such a simple view is not warranted in light of the fairly complex trends during the time period from 1975 to 1990. However, mere descriptive evidence on trends in wage dispersion provides only a limited basis for an evaluation of the two-sides-of-the-same-coin hypothesis that the lack of wage flexibility in West Germany has resulted in a disproportionate increase of unemployment among low-skilled workers. This is true because of prevalent composition and selection effects which are likely to influence aggregate wage measures. In this context, a typical composition effect could be that the share of low-skilled workers at older age increases over time, since younger cohorts tend to obtain higher education levels. Assuming an age-earnings profile with positive slope reflecting increased productivity at higher age, average wages for low-skilled workers might exhibit a disproportionate increase relative to other skill groups even though wage ratios between equally productive workers (after controlling for age) have not changed. This example can also be used for an illustration of two possible selection effects. On the one hand, if it is the case that abilities are equally distributed across generations and education as an investment in human capital is positively correlated with unobserved ability, a trend towards increasing education levels among the younger cohorts due, for instance, to an exogenous reduction in the cost of education is likely to imply that the average ability level among the low-skilled workers (if a low-skill level is measured by educational attainment) is decreasing for younger cohorts. On the other hand, a second selection effect emerges, if a lack of wage flexibility or an ongoing wage compression fosters a rise in unemployment among low-skilled workers such that the ability distribution among the low-skilled workers improves. This is the case if the likelihood of becoming unemployed is negatively correlated with the unobserved ability level.

Defining cohorts by year of birth of the worker and estimating age-
earnings profiles for a given cohort, this study attempts a comprehensive characterization of the movements in the entire wage distribution. A comparison of standard cross-sectional age-earnings profiles over time hinges on the assumption that workers of the same age are comparable over time. Taking a cohort perspective allows to investigate wage trends for well defined groups of workers over (a part of) their actual life-cycle.

As it is typically done in the literature, controlling for differences in the skill level and for the age (cohort) composition of workers allows to decompose aggregate trends into movements between and within these groups. However, here a broader characterization is attempted: Acknowledging the obvious fact that wages within groups (cells) of workers defined by their skill level and by their age differ across individuals (within distribution), the goal is to describe trends between and within these cell distributions by means of quantile regressions. Information about these trends can provide reduced-form evidence for the evaluation of certain popular hypotheses. At the same time, they might confirm or they might force one to revise simple interpretations of descriptive evidence as put forward in chapter 2. In order to derive a parsimonious description of actual wage trends, this study applies an empirical framework which builds strongly on the notion of uniformity. Two important forms of uniformity are: First, if wage growth is the same for all cohorts in a skill group over time after controlling for pure life-cycle growth, then wage growth over time can be designated as the overall (macroeconomic) time trend for this skill group and is likely to be caused by economic forces applying to the entire skill group. A second form of uniformity relates to the wage distribution within a cell. If the entire wage distribution is shifted in parallel fashion (uniformly) over time, then wage ratios within the cell do not change, i.e. the economic force behind the trend operates uniformly within the cell irrespective of the unobserved ability of the individual worker. Taking a cohort perspective allows one to compare wages for the same set of workers (or at least for the same synthetic cohort) over time. As a working hypothesis, I take uniformity of wage trends for different workers to imply that the economic cause for the wage ratio between the workers does not change. For instance, if it were the case that wage trends could be described by uniform shifts of a stable wage distribution within a skill group and these uniform trends differed across skill groups, then it would be natural to focus the economic analysis on the skill bias of wage trends, due e.g. to a skill bias in labor demand or in labor supply. Such a result would not be consistent with the argument that unions were successful in raising disproportionately the wages of low-wage earners. Of course, as pointed out above, such a conclusion hinges critically on having dealt appropriately with potential selection effects.

This chapter uses a novel empirical framework applied in MaCurdy and Mroz (1995) and Fitzenberger, Hujer, MaCurdy, and Schnabel (1995) to represent wage trends across skill groups and cohorts in a parsimonious way.