The Generation Gap: Consequences of an Aging Workforce for the U.S. Youth Labor Market

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Motivation

One of the most profound developments in the U.S. labor market has been the rapid aging of the workforce, due in part to a reversal in retirement trends which began in the mid–1990s (Figure 1). Perhaps less well–known is the fact that the wages of young (22–30) and old (55+) workers have slowly been diverging over time (Figure 2). Previous papers have studied the evolution of the age premium across education groups, and assessed the relative importance of supply and demand factors (Katz and Murphy, 1992; Carneiro and Lee, 2011; Jeong et al., 2015).

In this project, I want to focus on a different aspect of the growing wage gap: Older workers are increasingly concentrated in high–skill occupations while younger workers are increasingly concentrated in low–skill occupations. Figure 3 shows the change in occupational composition between 1980 and 2007 by age group. While the share of middle–skill jobs has declined across the board, consistent with job polarization (Autor and Dorn, 2013) and the decline of manufacturing, young and old have experienced constrasting trends in low and high–skill occupations. Older workers have made large gains in managerial and professional occupations while a significant share of younger workers have been relegated to low–skill jobs such as food preparation and retail sales. To get a sense of the importance of this phenomenon, a simple mean decomposition of the wage gap between old (55+) and young (22–30) workers into within occupation relative wages and across occupation composition reveals that 25% of the 1980–2007 change in the wage gap can be attributed to changes in occupational composition.[1] Therefore, I want to test empirically whether the rise of older workers in high–skill occupations, due in part to skill–biased retirement trends, contributed to the shift towards low–skill occupations among younger workers.[2]

Conceptually, this project is related to studies which have tried to determine whether older workers "crowd out" younger workers from the labor market (Gruber and Wise, 2010; Munnell and Wu, 2012). These studies have mainly focused on employment and unemployment among younger workers, whereas I will emphasize job quality and wages. The fact that they found no evidence consistent with the notion of a lump–of–labor at the aggregate level is not incompatible with my hypothesis of crowding out within the labor market.

Empirical Strategy

The empirical analysis will be based on a local labor market approach with commuting zones (CZ) as the unit of analysis. To focus on the long–run, I will pool changes across three periods: 1980–1990, 1990–2000 and 2000–2007. Although more recent data is available, I will follow the literature (e.g. Autor and Dorn, 2013) and truncate the analysis in 2007 to make sure that the results are not driven by unusual developments during the Great Recession.

[1] The details of this exercise are omitted due to the page limit.

[2] In a separate but related project, I want to examine changes in *within* occupation relative wages of young and old workers, with a particular focus on the role of differential returns to experience and experience content across occupations.

The implicit thought experiment underlying the analysis is to compare youth wages and occupational composition in CZs in which older workers in high–skill jobs retired at a lower rate with "similar" CZs in which they retired at a higher rate. One would expect high–retirement CZs to create more vacancies in the high–skill sector for younger workers, and therefore result in higher average wages and a lower share of young workers in the low–skill sector. The fundamental challenge, common to all studies attempting to link employment outcomes of different groups of workers, is that unobservable demand shifts tend to affect all workers in the same way, which will mechanically bias the estimates. To address this endogeneity problem, I will employ an instrumental variable strategy exploiting differences in the age composition of older workers across CZs. More specifically, one can predict the employment rate of older workers within a CZ based on the age composition of older workers interacted with the national employment rate of older workers by age. Intuitively, the age composition has predictive power because the retirement hazard rate is increasing with age and exhibits spikes at 62 and 65 due to eligibility for Social Security and Medicare. The instrument therefore isolates variation in the employment rate of older workers that stems from supply–side factors, assumed to be orthogonal to the demand for youth labor. This instrument is akin to those based on local industrial composition (Bartik, 1991).

Data

The main analysis will draw income and employment data from the 1980, 1990 and 2000 U.S. Censuses as well as the 2006–2008 3–year American Community Survey (ACS). The U.S. Census and ACS are widely–used publicly available surveys, and the only data sources with large enough sample size to apply a local labor market approach. Among others, the richness of the data will allow me to compare the experience of younger workers of different education levels and backgrounds.

In an important extension, I plan on using data from Eurostat's Labor Force Survey (LFS) and Structure of Earnings Survey (SES), and apply the same methodology to explore whether the results extend to European countries as well.[3] The LFS and SES are the European equivalent of the U.S. Census and ACS, and contain all the necessary information on employment, age structure and occupation at a local level over time. In particular, analogous to CZs, Europe can be divided into 270 regional units called Nomenclature of Units for Territorial Statistics (NUTS–2). The European context is of interest for two reasons: (1) population aging is a more pressing issue than in the U.S. and poor youth employment prospects are a serious problem in some countries (e.g. Greece and Spain), and (2) European labor markets are typically considered to be more rigid, and one might expect the magnitude of the compositional effects to be larger a priori.

Expected Contribution

The findings in this project potentially have important policy implications. In response to deteriorating public pension finances many advanced countries are encouraging older workers to work longer. For example, a number of countries recently raised or are gradually raising their normal retirement age. As a result, an aging workforce will be a defining feature of many economies for years to come. The policy debate about the potential consequences for the youth labor market has typically been centered around employment (Carnevale et al., 2013; Eichhorst et al., 2014). Uncovering a causal relationship between retirement trends and occupational composition would shed light on a channel through which retirement policy affects youth labor market outcomes. Anecdotes of young graduates unable to find good jobs and forced to settle are abundant, and may reflect an important trend in the economy.

[3] I have begun the application process to obtain access to this data, which takes approximately 2–3 months, conditional on approval.

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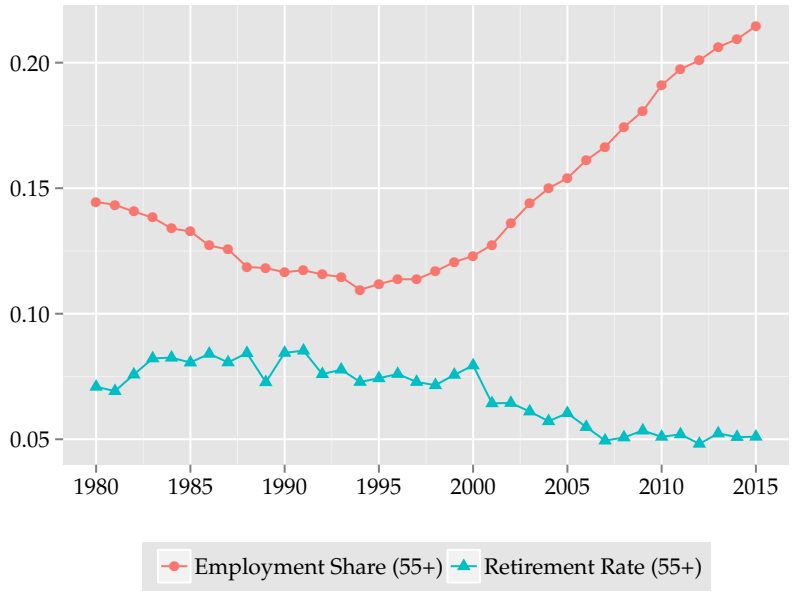
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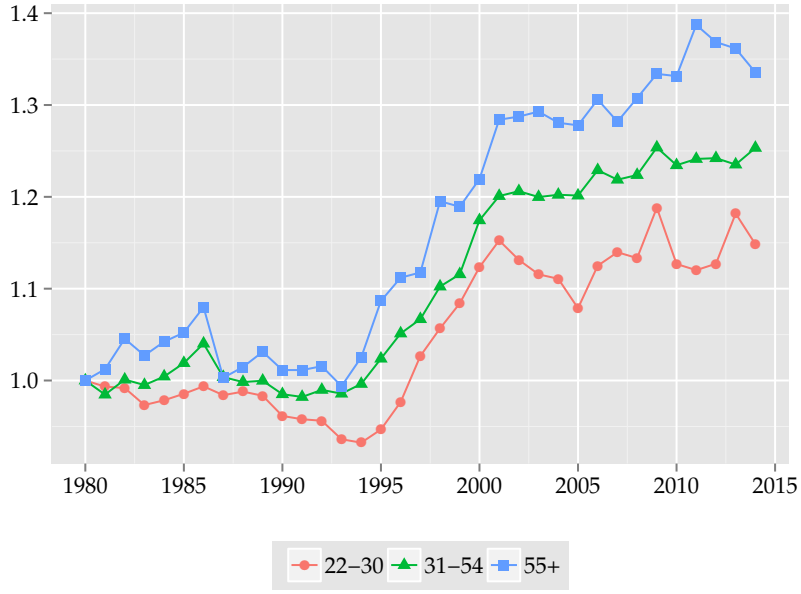
Appendix

Figure 1: Share of Total Employment and Retirement Rate of 55+: 1980–2015



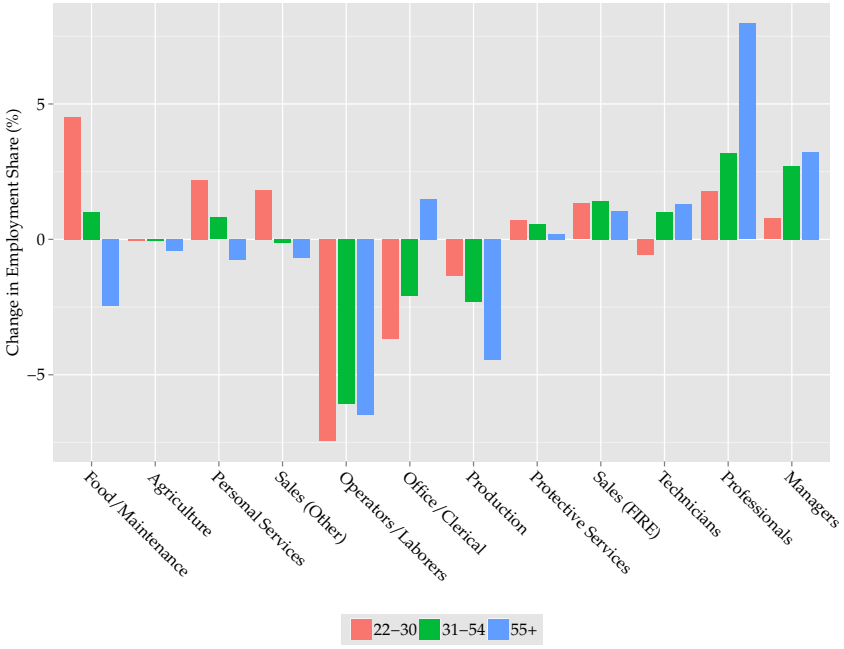
Note: The retirement rate is defined as the sum of individuals (55+) who worked 26+ weeks last year and state that they are currently out of the labor force, divided by the sum of individuals (55+) who worked 26+ weeks last year, regardless of current labor force status. Individuals are weighted according to CPS sampling weights.
Source: 1980–2015 CPS

Figure 2: Real Hourly Wages of Full–Time Full–Year (FTFY) Workers by Age Group: 1980–2014



Note: Hourly wages are constructed by dividing annual labor earnings by weeks worked last year × the usual number of hours worked. FTFY workers are defined as 40+ weeks worked and 35+ usual hours worked. Wages are averaged using CPS sampling weights, and deflated using the Personal Consumption Expenditures (PCE) index.
Source: 1981–2015 CPS

Figure 3: Change in Employment Share of Occupation Group betwen 1980 and 2007 by Age Group



Note: The time–consistent occupation classification comes from Dorn (2009), and occupations are grouped according to a slightly modified version of the crosswalk in Autor (2015). Occupation groups on the x–axis are ordered according to 2014 average wage (increasing from left to right). Individuals are weighted according to Census sampling weights.
Source: 1980 Census and 2006–2008 3–year ACS

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EDUCATION

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  - — Ph.D., Economics — 2018 (*expected*)
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  - — M.A., Economics — 2014
- Maastricht University, Maastricht, NL
  - — M.Sc., Econometrics & Operations Research (*cum laude*) — 2012
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FELLOWSHIPS & AWARDS

- Northwestern University
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TEACHING EXPERIENCE

- Teaching Assistant, Northwestern University
  - — Econometrics III (graduate), Prof. Charles Manski & Prof. Alex Torgovitsky — Spring 2015
  - — Intermediate Econometrics (undergraduate) — Winter 2015
  - — Econometrics I (graduate), Prof. Charles Manski — Fall 2014
  - — Introductory Econometrics (undergraduate) — Fall 2013–Spring 2014
- Student Mentor, Maastricht University
  - — Beta 1–op–1 Project (introductory econometrics modules for high school students) — Fall 2009

RESEARCH EXPERIENCE

- Research Assistant, Northwestern University
  - — Prof. Lee Lockwood — Fall 2015–Winter 2016
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  - — Prof. Thomas Dohmen — Winter 2011–Spring 2012
    - ⋆ Research Center for Education and the Labour Market (ROA)
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PERSONAL INFORMATION

- Age: 25
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NBER Pre-Doc Fellowship Recommendation Letter for Paul Mohnen

I am writing to recommend Paul Mohnen for the NBER Pre-Doc Fellowship Program on the Economics of an Aging Workforce. Paul is working on a dissertation studying the relationship between the labor supply of older workers and labor market outcomes of younger workers. His current dissertation committee is Jon Guryan, Matthias Doepke, and me (all at Northwestern University).

Paul is a talented and promising labor economist. When I first arrived at Nortwhestern, he worked for me as an RA for several months. He worked on model-based simulations of labor market for ongoing research of mine studying the labor market effects of sectoral shifts. He is hard-working and friendly.

Paul is expecting to graduate in the Spring of 2018 (so he has two full years left in the program). Our department views him as one of the most promising graduate students. This spring, he received the Susan Bies Prize for best student research in Economics & Public Policy. In my opinion, he is the most promising student I am currently advising (across all cohorts at Northwestern right now, excluding this year's job market candidates).

In the remainder of this letter, I will describe his proposed dissertation research in more detail. The goal of his project is to understand the extent to which older workers "crowd out" younger workers in the labor market. While most of the literature focuses on employment rate as an outcome, Paul will also focus on averages wages and "job quality." Intuitively, while some young workers may end up unemployed, in standard market-clearing models with endogenous task assignment, younger workers may end up in lower-paying jobs (rather than not working at all).

To tackle this empirically, Paul will exploit variation across Commuting Zones in labor supply of older workers. The preliminary results of this strategy look promising; intuitively, national trends in labor supply by age and cohort can be interacted with pre-existing cross-sectional variation in age distribution to generate predicted changes in labor supply at local level that are driven by national retirement trends that are plausibly exogenous to local labor market conditions.

As said above, beyond looking at changes in employment and average wages, Paul will also study whether younger workers are "crowded out" of high-paying occupations as a result of higher labor supply of older workers.

Overall, Paul has my full confidence in his ability to design and execute a research project of substantial general interest that will shed light on the broad economic effects of an aging workforce. His economics training at Northwestern has given him substantial technical expertise, and his research experience to date has demonstrated a strong ability to conduct empirical research in labor economics at the highest level.

Please do not hesitate to contact me with any questions (by e-mail at noto@northwestern.edu or by phone at 847-491-8230).

Sincerely,



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Associate Professor of Economics
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