Discussion of "Secular Changes in Employment of Older Individuals," by Rogerson and Wallenius

Mark Bils
University of Rochester; Consultant, Federal Reserve Bank of Richmond; and NBER

Rogerson and Wallenius highlight swings in employment rates for older workers for 14 OECD countries since the mid 1970's. The changes are really large. On average for these countries the employment to population rate (EPOP) for men, ages 55-64, fell by about 25 log points from 1976 to 1995, but then increases by roughly the same magnitude from 1995 to 2019. The shift in trends for women ages 55-64 mirror this, but have to be viewed relative to a long-term rise in women's employment. Women's EPOP increases by about 5 log points from 1976 to 1995, but then by more than 55 percent from 1995 to 2019. These shifts are largely relative to younger workers--that is, shifts for younger workers are much more muted. Shifts of this magnitude call out for an explanation, and Rogerson and Wallenius consider several. Their preferred narrative combines a combination of negative shocks and policies discouraging labor supply during the rundown in hours, then a gradual reversing of those policies during the strong rebound.

My discussion focuses on Germany, exploiting the German Socio-Economic Panel (GSOEP) described just below. This long household panel allows me to see individual work histories. In turn, I can control for cohort effects, for example from trends in life expectancy, schooling, or occupations, that could potentially drive the swings in employment shown by Rogerson and Wallenius from repeated cross-sections. It also lets me examine trends in wage rates and household assets over time. These variables, as well as changes in taxes and transfers, should affect the labor supply of older workers.

I find that the trend shifts for employment do not reflect cohort effects I see the evidence for Germany supporting the Rogerson-Wallenius narrative that changing subsidies and regulations played a role in these trends, at least in the increase since the mid 1990's for men. For Germany, the data also suggest that a decline in household wealth relative to earnings played a role in employment rates rebounding for older workers. These employment swings are a striking illustration that labor supply factors are capable of generating dramatic changes in employment and total hours.

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1Nataliya Gimpelson contributed greatly to this discussion, with suggestions as well as research assistance.
2A number of papers have noted large long-term trends across countries, with many focused on the differential trends across countries prior to 2000. A couple of examples include Ohanian, et. al (2008) and Carboni et. al., (2018). Carboni et al.’s work extends to 2007 and also breaks by ages less than 30, versus 30 and above.
GSOEP data

The GSOEP, began in 1984, is an annual longitudinal survey of households. It surveys individuals from about 11,000 distinct households each year. The GSOEP provides rich data on a working household member's earnings, employment, hours, industry, and occupation. It also provides information on the household's taxes paid and transfers received. The latter includes unemployment, old-age, and disability benefits, each of which has been subject to numerous salutatory changes, especially since the mid 1990's. Starting in 2002, the GSOEP has collected data on household assets every five years. The GSOEP provides two channels for observing an individual's work history. One is to look back at a respondent's answers from prior years of the survey. The survey also includes retrospective histories of a respondent's employment at earlier ages.

For the purposes of this discussion, an obvious disadvantage of leaning so exclusively on Germany and the GSOEP is that it misses the other 13 OECD countries considered by Rogerson and Wallenius. Fortunately, for my purpose, the employment pattern for older workers in Germany largely mirrors that for the 14 OECD countries and, if anything, is sharper. Figure 1 displays the EPOP at ages 55-64 from the GSOEP separately for men and women. The inflection point in Germany appears closer to 1997 than 1995. For men the EPOP falls by about 25 log points just in the thirteen years from 1884 to 1997; from 1997 to 2018 it then increases by nearly 50 percent. The comparable episodes for women are an increase of about 30 log points followed by an increase on the order of 85 percent.

Starting in 1984, the GSOEP misses part of the period of decline in older workers' employment shown by Rogerson and Wallenius. This is especially true of my analysis that controls for earlier work history or examines assets, only collected after 2002. But I would argue that the increase in employment rates since the mid-to-late 1990's is the most intriguing element of the German case. Longer trends are for employment and hours to decline in Germany and other countries (e.g., Boppart and Krusell, 2020), making the counter experience for older persons these past 25 years more of an outlier to explain.

Accounting for Cohort Effects

My Figure 1, like the analysis from Rogerson and Wallenius, compares workers at ages 55-64 over time. Therefore, the variations reflect differences across cohorts. It is possible that cohorts will differ due to factors such schooling or occupations. These may be viewed as labor supply factors. But they are not the factors that might create intertemporal movements in employment along the lines discussed by Rogerson and Wallenius.

One demographic trend has been in life expectancy. Higher life expectancy should lead to higher employment at ages 55-64, as we would not expect it to translate one-to-one to more years of retirement. But while life expectancy in Germany has trended upward, it has not accelerated

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3From 1984 to 1989 the survey covered only households in West Germany. I examined figures that exclude households living in the former East Germany throughout 1984-2018. But the takeaway from those would be quite similar to that taken from the figures below.
since the mid 1990's. If anything, the rate of increase has slowed. So I believe it is not especially important to understanding the EPOP patterns from Figure 1.

Years of schooling have also trended upward. More schooling should be a powerful force for higher employment at older ages. It increases earnings, including later in the working life, while not proportionately raising permanent income given the direct and opportunity costs of schooling. It could delay retirement by engendering work that is less physically demanding and perhaps more varied. Figure 2 presents average years of schooling attainment for Germans ages 55-64 separately for men and women. Not only has years of schooling increased, but did accelerate somewhat since the late 1990's, especially for women. Figures 3 and 4 plot EPOPs for older men and women respectively, but does so separately for individuals with more than 12 years of schooling versus those with 12 or less. The relative acceleration of EPOPs occurs across both schooling groups, regardless of gender. For men, the trough in EPOP is earlier and the subsequent rise somewhat larger for those with 12 or less years of schooling. But Figures 2 and 3 suggest compositional effects by schooling do not drive much of the trends in EPOPs.

Figures 5 and 6 plot annual hours worked for ages 55-64, as well as for ages 25-34, 35-44, 45-54. Note firstly that the trends in EPOP at 55-64 translate at least as strongly to annual hours. Two other points emerge. One is that the rapid increase in EPOPs since the late 1990's is specific to the older individuals. The other is that the pattern in EPOPs at ages 55-64 are not presaged by EPOPs for the same cohort ten years earlier (looking at ages 45-54 ten years prior), twenty years earlier (ages 35-44), or thirty years earlier (ages 25-34). That runs counter strong cohort effects.

Figures 7 and 8 make the latter point directly by plotting employment rates at ages 30, 40, and 50 for cohorts aged 55-64. These rates are based on retrospective histories in the GSOEP. The results for older men are particularly striking. EPOPs for men ages 55-64 increased from less that 50 percent in 1997 to over 75 percent in 2018. But, from Figure 7, we see that reported employment rates at earlier ages, especially at age 50, were trending down. Thus the increase in employment rates at older ages post 1997 is relative to those individuals' rates at earlier ages.

Figure 9 exploits the longitudinal data to control for older individuals' work history. It plots the EPOPs for men and women ages 55-64, but only for those who reported being employed while ages 50-54. Conditional on working at 50-54, the figure shows tremendous swings in employment rates at 55 to 64. For those men, the EPOP bottoms out in 2000, at about 50 percent, falling more than 40 log points from 1989. That rate then more than rebounds, increasing 50 plus log points by 2018. For women employed at 50-54, the EPOP shows a remarkably similar, though slightly exaggerated pattern. It also starts and ends at an EPOP of about 80 percent, but reaches a nadir of only 40 percent in 1998.

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4See https://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=DE for World Bank indicators for Germany.
5There have been considerable shifts in occupations over time in Germany, with an increase in those classified as white-collar. I additionally broke the samples reflected in Figure 9 between workers whose modal occupation at ages 50-54 was blue collar versus white collar or civil service. The patterns exhibited in Figure 9 appear for individuals regardless of that occupational breaks. White-collar (and civil service) workers do tend to display about a 15 percentage point higher EPOP at 55-64 than blue collar, for both men and women. That differential widened to more like 25 to 30 percentage points, for both sexes, during the '90s.
Wages versus Wealth

Figure 9 makes it crystal clear that the large trends in employment for older persons in Germany do not reflect cohort effects. For those working in their early fifties, the EPOP halved for women, and nearly halved for men, in a remarkably short period, then more than rebounds, again in remarkably short order. Before turning to the type of policy changes stressed by Rogerson and Wallenius, I first look at other variables that should exert substitution and wealth effects on labor supply: wage rates and assets. We should expect an individual to extend one's working life if their wage is high relative to consumption as retirement nears. Wages will be high relative to permanent income and consumption if wage growth has been particularly rapid or, more generally, if net wealth is low relative to earnings.

Figure 10 presents the median real wage at ages 50 to 54 for the cohort currently 55-64. I present wages at ages 50-54 so that it is not too influenced by selection given the large swings in employment rates at ages 55-64. Those wages trend upward at about 0.3 percent per year for men and 0.8 percent for women. But there is no acceleration after the 1990's. In fact, the periods of highest trend growth are the mid 1990's for men and the early 1990's for women. In addition to wage levels, I examined whether individuals' wage growth increased post 2000. But the GSOEP shows no evidence that occurred.

Figure 11 plots median household assets from 2003 to 2018. The figure again presents assets at ages 50-54 for those currently 55-64 to limit the impact of employment at older ages on measured assets. Median assets decline considerably, by about 40 log points, from 2003 to 2010, then increase somewhat. That decrease is for median, not average, assets, as asset values grew more rapidly for households at higher levels. Grabka and Wesstermeler (2015) discuss the decline in median German assets post 2000, attributing much of it to declining real estate values.

Figure 12 presents the median of household assets relative to individual earnings, evaluated at ages 50-54, for men and for women as of ages 55-64. These show more of a sustained decline post 2003, though the decline is most rapid from 2003 to 2008. Overall these ratios decline by about 45 log points for men, and by even slightly more for women. Thus it appears quite plausible that a rise in earnings power relative to household wealth may have contributed somewhat to increasing employment rates both for older men and older women.

Changes in Transfers and other Policies

Rogerson and Wallenius discuss transfer policies that arose in OECD countries in the 1970's and 1980's that would discourage employment, but were subsequently scaled back or altered. Steiner (2017) categorizes the many changes to German programs with respect to unemployment benefits and requirements to access public pensions. Here I examine the patterns in unemployment and public pension payments to persons 55-64 from the GSOEP. I then look at the timing of employment changes at the ages, 60-62 or 63-64, especially affected by some substantive policy changes.

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6 For each individual the average wage is calculated as earnings over hours. The median represents the median of these average wages.
Figure 13 presents the mean of unemployment benefits received over the past year by those 55-64 in the GSOEP, while Figure 14 presents the median benefit received, conditional on receiving. The mean unemployment benefit declines by more than half, both for men and for women, from the late 1990's through 2018. Of course, there is a reverse channel from employment rates, regardless of the cause, and mean unemployment benefits. Figure 14 actually shows no decline in median benefit condition on receiving for men, and no sustained decline for women. Together, the figures suggest that the impact of changes to unemployment benefits, if important, must have acted through eligibility or incentives to take up unemployment, not through the generosity of the benefit. One such policy change that aligns well with the timing in Figure 13 is the introduction of wage subsidies to firms hiring workers deemed difficult to place for lower wage jobs. These "Hartz" reforms were implemented in four stages from 2003 to 2005.

Many of the policy changes since the 1990's, as discussed by Rogerson and Wallenius, have been design to scale back public pensions, those based on age or on disability. Changes drafted in Germany in the 1990's gradually reduced the generosity of benefits from 1998 to 2006. (See, for instance, Boersch-Supan and Juerges, 2011.) The age required for retirement pension was raised: for men from age 63 to 65 in stages during 2000-01 and for women from 60 to 65 over 2000 to 2004.7 The retirement age for those classified disabled rose gradually from age 60 to 63 beginning in 2000.

Figure 15 presents the mean of public pension received by those 55-64 in the GSOEP. That mean declines substantially over time for both men and women, basically halving from the late 1990's to 2018. That decline is more important for men, as their average benefit received is consistently about double that for women. Figure 16 presents the median benefit, conditional on receiving. These also decline substantially, with the exception of an outlier observation for women in 2016. Figure 17 plots the differential in mean pension benefit, both old-age and disability, as a function of being employed. Non-employment is associated with higher mean benefit, but that differential declines considerably for men after the late 1990's. By contrast, no decline is perceptible for women.

I see the results in Figures 13-17 as providing some support for the Rogerson-Wallenius narrative that changes in benefits were important in the employment trends for older persons. But, at least for Germany, that evidence appears stronger with respect to pension benefits and especially for men. To follow up on this, my last figure, Figure 18, again plots the EPOP for the older men, but separately for ages 55-59, 60-62, and 63-64. These breaks are designed to shed light on the impact of a couple of key policy changes that were phased in beginning in 2000--one making old-age pensions available at 65, rather than 63, the other increasing the age, conditional on disability, from 60 to 63. We see that the EPOP increase for men from 2000 to 2018 is driven by huge increases at ages 60-62, from about 40 to nearly 75 percent, and at ages 63-64, from about 20 percent to over 50 percent. These differential trends are consistent with that expected if the changes to public pensions played an important role in employment rates for older men. One should keep in mind, however, that it may also reflect greater responsiveness of employment at ages 60-64, compared to those at 55-59, even for common forces.

7Starting in 2012, subsequent changes gradually raise that age to 67 by year 2029.
Summary

The GSOEP sheds some light on the large swings in employment for older individuals in Germany. That swing is driven entirely by the rates of employment at ages 55-64 for those who had been employed at 50-54. From that perspective, the swings for older women are at least as striking as that for men. (See Figure 9 above.) Results from the GSOEP provide some support that policies designed to scale back transfers played a role in that trend reversal for men after 2000; but it less clearly supports that narrative for women. The GSOEP also reveals that a decline in household wealth, relative to earnings potential, probably contributed to the higher employment rates at older ages since the 1990's. Given the enormous swings in employment rates for older persons over such short periods, I believe it prudent to reserve a decent-sized role for forces, as yet, not identified.

References


Figures

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Figure 6: Annual hours at various ages, women
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Figure 8: Retrospective emp/pop for women, ages 55-64
Figure 9: Emp/pop, 55-64, by emp status 50-54

![Emp/pop, 55-64, by emp status 50-54](image)

Figure 10: Median real wage at ages 50-54, for those currently 55-64

![Median real wage at ages 50-54, for those currently 55-64](image)
Figure 11: Household assets at ages 50-54, for those 55-64

Figure 12: Assets relative to earnings at ages 50-54, for those 55-64
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Figure 14: Median unemployment benefits conditional on receiving, ages 55-64
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Figure 18: Emp/pop rates for older men, separately by age group