Does the impact of fixed-term contracts on health in Germany depend on “objective” job (in)security?

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Employment meets essential psychosocial and economic needs in modern societies (Jahoda et al. 2002[1933]). Accordingly, the absence of employment is associated with negative health effects (Paul & Moser 2009). In the case of fixed-term contracts (FTC) the situation is not that clear (Kim et al. 2012). On the one hand FTC workers are in paid employment that should meet the aforementioned psychological and economic needs. On the other hand, their employment is of limited duration and often insecure. FTC workers face a high unemployment risk (Giesecke & Groß 2003) and often suffer from perceived job insecurity (Muñoz de Bustillo & de Pedraza 2010). Perceived job insecurity can restrict individual agency control (Fryer 1986) and life course predictability (Strandh 2000). In addition to the higher job insecurity, temporary jobs are often assumed to be ‘bad jobs’ in terms of wages, working conditions, fringe benefits, prestige or career prospects (Kalleberg et al. 2000).

Studies that analyze the health effect of FTCs in Germany are scarce and results are mixed. While Gash et al. (2008) find that unemployed individuals who take up a FTC job show less favorable health effects compared with individuals taking up a permanent job, Gebel and Voßemer (2014) find no difference between the two types of contract. Therefore, we take a closer look at the relationship between fixed-term contracts and health. First, we analyze whether there is a general negative health effect of entering employment with a fixed-term contract as opposed to entering regular employment. Our first hypothesis is “There is a negative effect of fixed-term contracts on health”. However, the equation of all FTC jobs with insecurity or bad working conditions seems not appropriate. FTCs are not always a trap into a precarious career but serve as a bridge to permanent employment. Therefore our second hypothesis is “The negative effect of fixed-term contracts on health decreases with the probability to transition into permanent employment”.

Data and methodological challenges

In our analysis we use the German Panel Study "Labour Market and Social Security” (PASS)(Trappmann et al. 2011), a survey that is currently in wave eight. PASS uses a dual frame for sampling: First subsample is a probability sample of the German residential population, and includes short-term unemployed. The second subsample is drawn from registers of welfare benefit recipients, including long-term unemployed. As an indicator of health as the dependent variable, we use the self-rated health,
measured on a five-point scale. Our focal dependent variable is employment status, where we distinguish between regular (permanent) employment, fixed-term employment and unemployment.

One way to account for heterogeneity in the employment prospects of fixed-term workers would be to measure perceived job insecurity, assuming that it reflects the ‘objective’ conditions people are in (Klandermans et al. 2010). In our paper, we assume that individuals are aware of the average transition rates to a permanent position in their respective industry, which is a more objective measure of job insecurity. We estimate these industry-specific transition rates from the IAB Establishment Panel and merge them to our data on individuals. In Germany, transition rates to regular employment vary significantly across industries, for example in 2015 from 14 per cent in the agricultural sector to 61 per cent in the ‘information and communication’ sector.

Specifically we interact fixed-term contract status and these industry-specific transition rates into permanent employment. The main effect gives us the baseline effect of FTC, where the interaction effect gives us the differential effect of having lower or higher transition probabilities.

As indicated in the literature review above, accounting for unobserved confounders is necessary to argue that observed health differences between unemployed, fixed-term and regular employed individuals reflect the causal influence of employment and contract type, respectively. However, even if state of the art estimation strategies like fixed-effects regressions identify causal effects, recently, methodologists have pointed out that they cannot distinguish the direction of causality. Not only can the type of contract influence the individuals’ health, an individual’s poor health can also be the reason why he/she only obtains a fixed-term contract. Therefore, the literature’s results might well be a combination of both directional effects, sometimes leading to negative, sometimes to null effects, depending on the relative size of both effects in the population under analysis.

In our analysis below, we try to avoid bias due to health selection by applying the system generalized method of moments (system GMM) estimator (Arellano & Bover 1995). We turn to this estimator, because intuitive solutions that remain within the fixed-effects framework like time-lagging the independent (Vaisey & Miles 2014) or the dependent variable (Nickell 1981) can do more harm than good\(^1\). This System GMM estimator is an extension of the dynamic panel data regression proposed by Arellano and Bond (1991). System GMM includes lags of the dependent variable as independent variables, while at the same time estimates two equations simultaneously, that both estimate the same coefficients (cf., Averett et al. 2014). For the first equation, variables are transformed into first differences, i.e. the differences between two consecutive waves. The second equation uses the same variables untransformed, i.e. as their levels. Whereas the first equation removes time constant unobserved

\(^1\) Lagging the independent means to measure the dependent variable health at wave t, but taking the independent variable from wave t-1.
heterogeneity, both equations control for all other kinds of heterogeneity and eliminate reverse causality by internal instrumental variables. In contrast to many other methods, a variety of tests are available to validate the estimation of a causal effect (Roodman 2009). They are passed in our analysis.

**Results**

In line with hypothesis 1, Table 2, Model 1 shows a significantly negative coefficient of -0.06 for entering employment with a fixed-term contract as compared to a permanent contract. The effect is almost half the size of the effect of unemployment on health, which is 0.11 and statistically significant. Model 2 introduces the Industry specific transition rate into the model. As indicated by the positive coefficient, we find that the higher the transition rate, the lower the negative effect of fixed-term employment on health. This supports hypothesis 2. The coefficient of the fixed-term contract dummy now is -0.269, which per construction of our variables is the baseline effect at a transition rates of zero. The lowest transition rate in our sample is 14%. At this level, the effect is -0.269 + 14*0.00442 = -0.20712. For a transition rate of 61%, the highest value in our sample, adverse health effects disappear, the value is close to zero (0.005).

**Table 2: Effect of fixed-term contracts and unemployment on self-rated health**

<table>
<thead>
<tr>
<th></th>
<th>Model (1)</th>
<th>Model (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coef. (std.error)</td>
<td>Coef. (std.error)</td>
</tr>
<tr>
<td>Self-rated Health at t₁</td>
<td>0.0940*** (0.0115)</td>
<td>0.0937*** (0.0118)</td>
</tr>
<tr>
<td>Self-rated Health at t₂</td>
<td>0.0372*** (0.0107)</td>
<td>0.0330** (0.0110)</td>
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<tr>
<td>Reference: Employed</td>
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<td></td>
</tr>
<tr>
<td>Fixed-term contract at t₀</td>
<td>-0.0645* (0.0302)</td>
<td>-0.269* (0.125)</td>
</tr>
<tr>
<td>Industry specific transition rate at t₀ (%)</td>
<td>0.00442* (0.00219)</td>
<td></td>
</tr>
<tr>
<td>Unemployed at t₀</td>
<td>-0.109*** (0.0262)</td>
<td>-0.106*** (0.0261)</td>
</tr>
<tr>
<td>Constant</td>
<td>0.483*** (0.0751)</td>
<td>0.435*** (0.0779)</td>
</tr>
<tr>
<td>Controls included</td>
<td>yes</td>
<td>yes</td>
</tr>
<tr>
<td>Observations</td>
<td>31,690</td>
<td>30,097</td>
</tr>
<tr>
<td>Individuals</td>
<td>11,443</td>
<td>10,862</td>
</tr>
</tbody>
</table>

Robust standard errors; *** p<0.001, ** p<0.01, * p<0.05;
Data: Panel Study "Labour Market and Social Security" (PASS); Dependent variable: Self-rated health (1-5);
Controls not shown are age, household income, work experience, previous unemployment experience, education, migration background, sex, marital status, children, dummies for waves;
Arellano-Bond Test AR (2) as well as Hansen J-Test are insignificant, indicating valid instrumental variables.
Bibliography


