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Testing the ‘residential rootedness’–hypothesis of self-employment for Germany and the UK

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Abstract

Based on the notion that entrepreneurship is a ‘local event’, the literature argues that entrepreneurs are ‘rooted’ in place. This paper tests the ‘residential rootedness’–hypothesis of self-employment by examining for Germany and the UK whether the self-employed are less likely to move over long distances (internal migration) than workers in paid employment. Using longitudinal data from the German Socio-economic Panel Study (SOEP) and the British Household Panel Survey (BHPS) and accounting for transitions in employment status we found little evidence that the self-employed in Germany and the UK are more rooted in place than workers in paid employment. Generally speaking, the self-employed were not less likely than workers in paid employment to migrate over longer distance. In contrast to the residential rootedness–hypothesis we found that an entry into self-employment and female self-employment are associated with internal migration, and that the self-employed who work from home (home-based businesses) are fairly geographically mobile. The gendered results suggest that women might use self-employment as a strategy to be spatially mobile with their household, or as a strategy to stay in the workforce after having moved residence until they find a job in the more secure wage and salary sector.

1. Introduction

In accordance with the economic conceptualisation of entrepreneurship as a ‘local event’ (Audretsch et al., 2010; Bönte et al., 2009; Stam, 2007; Feldman, et al. 2005; Romanelli and Schoonhoven, 2001) entrepreneurs are thought to be strongly ‘rooted’ in place, both prior to setting up a business and while running a business (Audretsch et al., 2010; Dahl and Sorenson, 2009; Hanson, 2009, 2003). This idea features in spatial agglomeration and cluster research, which focusses on high-tech industries and fast growing businesses (Stam, 2007; Feldman, et al., 2005; Romanelli and Schoonhoven, 2001), and also in the economic geography literature investigating different types of entrepreneurs with differing employment experiences spanning from “non-elite” single-person operations to owners of medium sized companies (Hanson, 2009, 2003).

The literature argues that firms are embedded in a social context or environment (Boschma, 2005; Crewe, 1996; Grabher, 1993). This spatial embeddedness of firms is thought to be influenced by several factors, one of which is the residential rootedness of the business owners themselves. For example, individual motivations for running a business are found to be related to the desire to work close to home or actually in the home (Hanson, 2003). Being embedded or rooted in place results in dense networks and local experiences (Hanson and Blake, 2009; Michelacci and Silva, 2007; Hanson, 2003), and localised networks (e.g. friends, neighbours) are found to be relevant for generating business ideas and realising business ideas successfully (Ekingsmyth, 2011; Davidsson and Honig, 2003). It is argued that residential rootedness is linked to the idea of indigenous start-ups in that people start their business in a place where they have lived for a long time (Hanson, 2003). In this sense starting a business may be a strategy to stay in a place/region longer (Scott, 1980). The literature also suggests that the high level of rootedness results in the fact that most entrepreneurs are found to be unwilling to move (Hanson, 2003).

Previous research has mainly focussed on the location behaviour of firms and not so much on the spatial behaviour of individual entrepreneurs. There is limited insight from empirical studies into the causal relationship between entrepreneurship and individuals' migration behaviour, mainly due to a lack of suitable data (data from, for example, the Global Entrepreneurship Monitor or the Panel Survey of Entrepreneurial Dynamics do not allow insights into individual entrepreneurs' geographical mobility behaviour). More insight in this relationship is important for our understanding of the dynamics of entrepreneurship and its local embeddedness. People who are more rooted in place could be more likely to start-up a business, which could lead to businesses which are strongly locally embedded. On the other hand, running a business might also cause people to be 'stuck' in place, reducing their spatial mobility and the mobility of their businesses.

The main objective of this paper is to test the residential rootedness–hypothesis of self-employment by investigating the effects of employment status on the probability to move over long distances (internal migration). The mobility behaviour of entrepreneurs might change during the entrepreneurial process (Stam, 2007; Reynolds et al., 2004). We therefore estimate effects of migration on self-employment at different stages: prior to the start-up and while running a business. By focussing on the residential location of the self-employed (as opposed to firm's location) and their migration behaviour (as opposed to the behaviour of firms) this paper aims to contribute to literatures on: entrepreneurship, labour studies and migration. We use the self-reported self-employment status in our data to identify transitions in employment status and to identify entrepreneurs.

To our knowledge, this is the first study to explicitly investigate the geographical mobility behaviour for a broad category of the self-employed. In line with occupational choice models applied in labour economics (Le, 1999) we compare the behaviour of the self-employed with workers in paid employment. We add to this an additional focus on transitions in employment status. Earlier labour studies which estimated effects of employment status on spatial mobility only looked at the employment status at one point in time (Böheim and Taylor, 1999). Specifically, we investigate whether those in continuous self-employment are more rooted in place to those in continuous paid employment.

While most studies in this field focus on one country, this paper draws on longitudinal micro data from household panel surveys for both Germany and the UK: the German Socio-Economic Panel (SOEP) and the British Household Panel Survey (BHPS). By choosing countries with different mobility regimes in terms of both geographical mobility and job mobility, this study aims to provide more general findings on the relationship between self-employment and geographical mobility behaviour. Both countries have distinct job mobility structures due to differing institutional settings in the labour market and the educational and vocational systems resulting in higher job turnover rates in the UK than in Germany

(Dustmann and Pereira, 2005; Sousa-Poza and Henneberger, 2004; Gangl, 2002). At the same time, national housing market conditions shape different preconditions for spatial mobility. In Germany it is widespread to build one's own family house for long-term residence, while in the UK buying and selling houses is common among the broader population (Behring and Helbrecht, 2002). This leads to a higher general level of geographical mobility in the UK than in Germany. These country-specific settings are likely to shape the way geographical mobility and self-employment are interrelated.

2. Background and research context

The meaning of place for entrepreneurship is widely discussed in economic geography and regional studies literatures. However, this literature is only of limited value for the present study as different concepts and measurements of entrepreneurship are applied (depending on the context of the studies), which are in part not congruent with common measurements of self-employment. Many studies focus on case studies for certain industries or industrial clusters (Feldman et al. 2005; Harrison et al., 2004; Stuart and Sorenson, 2003; Feldman, 2001), owners of fast growing businesses (Stam, 2007), or on firms and firm formation rather than on individual entrepreneurs (Andersson and Koster, 2011; Delgado et al., 2010; Bönnte et al., 2009; Armington and Acs, 2002; Fritsch, 1997; Reynolds, 1997).

Although the objectives, contexts and measurements of entrepreneurship vary across existing studies with an interest in place (e.g. industry, firm size, employment experience, gender), the prevailing view is that people who run their own business generally exhibit 'location inertia' (Dahl and Sorenson, 2012, 2009; Bönnte et al., 2009; Feldman, et al., 2005; Figueiredo et al., 2002; Feldman, 2001). This refers both to entrepreneurs' past and future location choices and migration behaviour. For example, entrepreneurs are found to have lived in the same region where they start-up their business for several years, or even their whole life (Audretsch et al., 2010; Michelacci and Silva, 2007; Hanson, 2003; Romanelli and Schoonhoven, 2001), and are unlikely to show a preference to move (Hanson, 2003).

In general two explanations are given for this rootedness of individual entrepreneurs. Firstly, agglomeration economies and cluster theory suggest that business owners and particularly founders accrue benefits from location-specific capital in terms of social networks established prior to the start-up, like access to information and resources (e.g. market contacts), access to financial resources through bank loan officers, and contacts to potential employees (Audretsch et al., 2010; Stam, 2007; Scott, 2006; Acs and Armington, 2004; Sorenson and Audia, 2000). Similarly, evolutionary geography points to the evolutionary process of networks and thus to the socio-economic embeddedness of start-up activities (Glückler, 2007). Secondly, the rootedness or embeddedness of entrepreneurship is found to be influenced by personal constraints and preferences of the business owner, for example the household and family context (Hanson, 2009; Feldman et al., 2005; Figueiredo et al., 2002; Feldman, 2001) or the desire to be close to family and friends (Dahl and Sorenson, 2009). Given all the location-specific capital of entrepreneurs, the benefits of moving often do not outweigh the costs (see Sjaastad, 1962 on migration theory). On the other hand, (would-be) entrepreneurs could benefit from internal migration if they have significant social capital in the destination area (e.g. place of birth or a place where close family members live) (Davidsson and Honig, 2003).

Some entrepreneurship studies provide evidence that entrepreneurs have moved to the region where they run their business at some point in their life (Levie, 2007; Zook, 2005; Harrison et al., 2004). Thus, one reason why so many entrepreneurs are found to live in their place of birth or in the place where their parents live (Michelacci and Silva, 2007) might be that they moved 'back' to these places and then started a business. Other reasons for

geographical mobility prior to a start-up might relate to residential location preferences. For example, findings by Keeble and Tyler (1995) suggest that environmental attractiveness can pull would-be entrepreneurs to rural areas. On the other hand, following Florida's (2002) work on the geography of the creative class, one can hypothesise that members of the creative class move to urban areas and become self-employed there because of a preference for urban living.

The duration of spells of self-employment is often relatively short and there are few recent studies which have examined the reasons for this (Parker, 2004). Taylor (1999) used the British Household Panel Survey over the period 1991–1995 to show that less than 50% of the people who became self-employed in the early 1990s stayed in self-employment for longer than two years. According to Lohmann and Luber (2004) the survival rates of self-employment seems to be higher in Germany. They found in the Socio-economic Panel Study 1984–1998 that 42% of the women and 63% of the men remained in self-employment for at least five years. These results suggest that in the UK context, compared to the more regulated and occupationalised German labour market, self-employment is perceived by many as a transitional state (Taylor, 1999 for Britain). In the UK and presumably to a lesser extent in Germany, self-employment might be a strategy to avoid the need for inter-regional migration. This is a third possible explanation for the residential rootedness of the self-employed which to date has not received much attention in the literature. When people become unemployed, self-employment might be a temporary solution until a suitable local job is found. This would support the hypothesis that the self-employed tend to live longer in their place of residence than the population average (Hanson, 2003). This highlights in turn that changes in employment status, including switches into and out of self-employment, are important for understanding the residential rootedness of self-employment.

To be able to investigate the links between employment status transitions (into and out of self-employment) and internal migration, longitudinal data is needed. To our knowledge, there are only two empirical studies which provide evidence on the geographical mobility of the self-employed in a longitudinal context. These indicate complex relations between self-employment and internal migration. The first is a study by Fielding (1989, 1992) who investigated the link between migration and social mobility using linked Census data for 1971 and 1981 from the Longitudinal Study for England and Wales. In the context of this study, small employers and non-professional self-employed workers were considered as one separate group ('*Petite Bourgeoisie*'); the professional self-employed were not analysed separately. Results from mobility matrices indicated that those who were members of the *Petite Bourgeoisie* in 1971 and 1981 were rather spatially immobile whereas those who became small business owners and non-professional self-employed workers during that period were fairly inter-regionally mobile.

A second study by Böheim and Taylor (1999) used the BHPS for the period 1991 to 1997 and found that the self-employed—here measured as all workers who define themselves as self-employed including professional self-employed workers, own-account workers, small and large employers—are not less likely to move between two consecutive waves both in general and inter-regionally than those who are employed in the wage and salary sector when controlling for other socio-economic factors. However, transitions in employment status between two consecutive years were not accounted for in this study. Hence, no distinction was made between those who remained in self-employment and those who exit self-employment in the subsequent wave which could have biased the estimation results.

There is a large literature on internal migration and general employment. However, most studies investigate whether people are employed before and/or after a move while no distinction is made between self-employment and paid employment. Similarly, migration theory explains internal migration mainly on the basis of wage differentials and regional wage rates (Borjas, 2005; Treyz et al., 1993). In Germany 10.4% of the working population aged

15–64 were self-employed on average in 2009. In the UK, the total self-employment rate amounted to 12.8% in 2009 on average (Eurostat Labour Force Survey, own calculation). Given the considerable levels of self-employed people in the labour force in both countries, remarkably little is known about the links between self-employment and internal migration.

In summary, previous literature suggests that the self-employed are characterised by a strong rootedness in place. Based upon this prevailing view in the entrepreneurship literature, we test the hypothesis that German and UK self-employed workers are more rooted in place than workers in paid employment. We expect that the self-employed have a lower probability to migrate than workers in paid employment and also that the self-employed are more likely to have remained in the same place of residence for a certain period of time than workers in paid employment.

3. Data and methods

3.1 Data and measurement

This paper draws upon two panel surveys: the German Socio-Economic Panel Study (SOEP) and the British Household Panel Survey (BHPS). A total of 27 waves (1984–2010) are available for the SOEP and 18 waves (1991–2008) for the BHPS. Both surveys are nationally representative annual household panel surveys of private households which collect a broad range of socio-economic data both on the individual and household level. Since 2001 the BHPS is representative for the UK as a whole. The same individuals are re-interviewed each successive year after they were first contacted. If individuals move out from their original household they are captured as a new household in the samples, and with all household members in the new household unit aged 16 years and older are interviewed. The SOEP started in 1984, when more than 12,000 individuals aged 16 or older in West Germany were interviewed for the first time. The sample size has gradually grown since then due to, amongst others, the incorporation of a subsample for East Germany and non-German residents (see Frick et al., 2005, pages 25–28 for more information on the sample size). The BHPS is a sample of households recruited in 1991 alongside with additional subsamples at wave 9 (1999) for Scotland and Wales and at wave 11 (2001) for Northern Ireland (see Taylor, 2010, page 25–26), containing approximately 10,300 individuals of 16 years and older.

Unfortunately, in the SOEP data, a distance variable for moves is only available from 2001 onwards (i.e. not for the waves 1–17). Since the last available wave for the BHPS is 2008, we used data from 2001–2008 for both surveys for generating a cross-country sample, covering waves 18–25 for the SOEP and 11–18 for the BHPS.

In both surveys, great effort goes into tracing sample individuals who move (within the country). Despite this effort, panel attrition is generally still higher among movers than among non-movers (Buck, 2000). Panel attrition due to a residential move may be problematic if the sample attrition of movers is non-random. However, previous research has found no clear evidence for the non-random attrition of movers in the BHPS (Rabe and Taylor, 2010; 538). Given the similar panel design and efforts taken to maintain the panel studies, the same can be expected for the SOEP.

Residential moves are defined as a change of an individual's address in the period between two survey points. Many studies define long distance moves as moves between administrative regions, but this method is inaccurate due to the different sizes of regions and the occurrence of moves across regional boundaries over relatively short distances. This problem is even more prominent in cross-country studies due to the unequal size of spatial units in different countries. We therefore measure migration through the distance between the residences at $t-1$ and t . We define internal migration (long distance moves) as a move over 50 km and more (Boyle et al., 2002). This includes many moves between German *Bundesländer*

and UK Government Office Regions. Moves out of the UK and Germany are not included in this study. Detailed information on the reasons of a move at individual level is only available in the BHPS. The reasons of a move are captured in the SOEP at the household level. Since members of a household might have different reasons for a move we cannot use this information in the context of this study.

We use the self-reported self-employment status, which allows us to differentiate between people who consider themselves as self-employed, i.e. a worker who does not receive wage or salary from an employer, or as employed and paid by an employer. For legal reasons most companies in the UK are run by ‘employed’ directors. In Germany, too, directors are often legally not self-employed. The SOEP questionnaire distinguishes, unlike the BHPS, between ‘self-employed workers’ and ‘employed directors’. In the BHPS, some directors may classify themselves as employed rather than self-employed. However, only 27.7% of all businesses in the UK were companies in 2011 (BIS, 2011). All other entrepreneurs who run their own business on own account or in partnership would classify themselves as self-employed in both surveys. These include the self-employed with and without employees (see Appendix Table A1). We only refer to peoples’ main job since it is this job that can be considered as most important for individuals’ geographical mobility decisions. The data used does not give any information on whether respondents inherited a family business. It can be assumed that the self-employed who inherited a family business are less spatially mobile than the self-employed who set-up their own business (Michelacci and Silva, 2007). An agricultural occupation could be used as a proxy for inheritance of a family business. However, the numbers of observations for the agricultural self-employed are too small to run separate models for them (see Table A1 in the appendix). The firm’s location is also not captured in the SOEP and BHPS. Hence, no (direct) information is available whether people have moved both residence and business or whether people moved residence and have kept their businesses in the same place. We have some limited information on simultaneous moves through information on commuting. Thanks to information on home-working we can distinguish between those self-employed workers who worked mainly from home pre move (home-based businesses) and who definitely have moved both residence and business. For all other self-employed migrants who worked mainly outside their home (which could mean that they commuted to their businesses or worked mainly at clients/customers premises) we do not know whether they have moved or kept their businesses when moving residence. This data limitation does not restrict our analysis since our focus is on residential rootedness and thus on the relationship between migration and individual’s location.

We distinguish empirically between four employment states: (a) employed in paid employment, (b) self-employed, (c) unemployed, and (d) inactive and others (in military service or sheltered workshops). Unpaid family members are defined as inactive in the context of this study. For Germany, people in apprenticeship trainings (*‘Berufsausbildung’*) are treated as being in full time education.

The SOEP questionnaire asks—in contrast to the BHPS—only for the employment situation at the time of the interview, thus, short episodes between survey points remain unknown (Solga, 2001). Therefore we measure employment transitions with respect to individuals’ current status at the time of the interview. This means that migrants could have changed employment status simultaneously to moving or shortly after moving (up to 12 months). Also note that our focus is on relationships between employment status (self-employed vs. employed in the wage and salary sector), including transitions between employment states, and geographic moves. Hence, it is not within the scope of the present study to investigate job mobility as such, i.e. including every change of job. We therefore compare the self-employed with workers in paid employment, irrespective of whether employees have changed jobs within the wage and salary sector or stayed in their job with the same employer between two consecutive waves.

3.2 Estimation methods

We test the residential rootedness–hypothesis of self-employment through two sets of models. A first set of models investigates individual propensities to migrate while a second set of models estimates the probability of a long distance move in the past. In the first set of models, we estimate the probability of a move between t and $t+1$ while accounting for transitions in employment status between t and $t+1$. This is a novel approach since earlier longitudinal studies estimated effects of the employment status on residential moves by looking only at the employment status at t (Böheim and Taylor, 1999). The transitions in employment status can be described by a 4 by 4 matrix. The 16 categories were collapsed into eight categories. The reference category consists of those who are in continuous paid employment (1). We distinguish those who are continuously self-employed by home workers (2) and non-home workers (3); the first being used as a proxy for a simultaneous move of residence and business. The transition into self-employment from unemployment is based on a different set of motivations than the transition from paid employment into self-employment (Parker, 2004). We therefore define two categories for an entry into self-employment: from unemployment/inactivity (4) and from paid employment (5). Likewise, we define two categories of exits from self-employment: towards unemployment/inactivity (6) and towards paid employment (7). The remaining combinations in employment status are collapsed into the final category (8).

For this first set of models we applied random effects logit models, which allow us to account for time-invariant individual-specific effects capturing unobservable (or unmeasured) traits in an error term. This is important in the current context as time-invariant psychological characteristics are likely to influence both mobility behaviour and self-employment choices. However, the main assumption of the model is that there is no correlation between the covariates and the unobserved features (Baum, 2006, page 220). Given that there is a correlation, the estimated betas may not be consistent. However, compared to fixed effects models, random effects models have two advantages. First, in random effects models the standard errors tend to be efficient. Second, time-invariant traits can be included as covariates (Allison, 2009). Since gender is relevant for both migration and self-employment, we need to include gender as a co-variate in our models. The problem of time constant variables in fixed effects models could be solved by running separate models for men and women. However, the numbers of migration events are too small in the BHPS and the SOEP to do so (see Table A2 in the appendix).

A second set of models estimates the likelihood of at least one move in the previous three years. Two periods were chosen that do not overlap: 2003–2005 and 2006–2008. We selected two periods of time and pooled the subsamples in order to boost migration events and to control for possible time effects. A time period of three years was chosen in order to follow the respondents over a certain period of time while ensuring that the sample contains a sufficient number of people in continuous self-employment. Here we consider both the employment status at t and transitions in employment states over $t-2$ to t . In order to compare the geographical mobility behaviour of those in continuous self-employment and those in continuous paid employment it is identified who remained in the respective employment status at every survey point over the period $t-2$ to t . In addition, we created dummy variables for those who are unemployed and inactive/others over the 3-year period respectively; the remaining observations with changes in employment status over that period were collapsed into another dummy. For this second set of models, OLS logit regressions are used. Since respondents could be captured in both of the two pooled subsamples (years 2003–2005 and 2006–2008) clustering—i.e. multiple observations from the same individual—is accounted for by corrected standard errors.

In order to conduct an integrated cross-country analysis we pooled SOEP and BHPS data. Since we are only interested in an indicator for subgroup differences and not in accounting for causal heterogeneity, we apply a single level modelling approach using a survey dummy. In addition, we run the models for each country (i.e. SOEP and BHPS separately). The results are similar to the findings using the pooled sample (these are not shown but can be obtained from the authors on request).

3.3 Sample description

The extracted subsamples contain persons aged 18 to 64 excluding those in full time education and retired people. The first set of models, which estimates the probability of moving between t and $t+1$, contains observations for which information on both moving and employment status are available for adjacent waves covering the years 2001–2008. The set of observations are person-years, i.e. persons observed in each wave over the period 2001–2008. Hence, the same person may be included in the sample several times but only if information about both their moving and employment status is available for two consecutive years. The above criteria result in a sample size of 150,063 person-years, including 1,271 moves over 50 km or more (SOEP: 86,967 observations and 692 long distance moves; BHPS: 63,096 observations and 579 long distance moves). A description of the subsample of self-employed workers with information on employment and moving status for two adjacent years across all waves disaggregated by survey (country) and sex can be found in the appendix (Table A1). The numbers of moves in the subsample between t to $t+1$ are displayed disaggregated by changes in employment status and survey (country) in the Appendix in Table A2.

The second set of observations for modelling the probability of past moves, is restricted to individuals for whom information on both moving and employment status is available for 3 consecutive waves. The sample contains 38,172 observations of 23,659 individuals (SOEP: 22,375 observations and 14,039 persons; BHPS: 15,797 observations and 9,620 persons). Out of those, 562 persons had moved 50 km and more over a 3-year period (SOEP: 314 and BHPS: 248). The number of persons who moved residence over $t-2$ to t is displayed for the pooled subsamples in the Appendix in Table A3 by both employment status at t and categories of employment status change/non-change over $t-2$ to t .

4. Self-employment and internal migration: empirical results

Table 1 presents the average percentage of movers and non-movers across 2001–08 among the self-employed and workers in paid employment by survey (country). In the raw data, in each country on average about seven per cent of the self-employed moves residence every year. This seems to be significantly less than among workers in paid employment. However, no difference can be observed in the raw data with respect to moves over 50 km and more. This is particularly true for Germany.

Table 1. Moves between t and $t+1$ by employment status at t , SOEP and BHPS 2001–2008 (column percentages)

Moves t to $t+1$	SOEP			BHPS		
	Self-employed	In paid employment	p-value	Self-employed	In paid employment	p-value
No move	92.8	91.8		92.6	90.3	
Move (all)	7.2	8.2	0.001	7.4	9.7	0.000
Move ≥ 50 km	0.7	0.7	0.994	0.8	0.9	0.240
N(Person-Year Observations)	7,371	64,201		6,440	47,561	
N(moves)	528	5,293		475	4,607	
N(moves ≥ 50 km)	53	460		49	430	

Note: pooled data 2001–08, unweighted data. People aged 18–64, un-paid family workers are excluded.
Moves are defined on a year-on-year basis.
Source: own calculation

Table 2 presents estimation results for the probability of a long distance move (≥ 50 km) between t and $t+1$. The figures displayed are odds ratios. The first set of variables included in the models indicates (a change in) employment status at two adjacent waves. Those who are self-employed at t and $t+1$ (the continuous self-employed) are separated in two groups: those who worked mainly from home pre move ('home worker') and those who worked mainly outside their home ('non-home worker'). For the first group, it can be assumed that these people moved both residence and business. The second group might have moved or kept their business in the former location. The reference category consists of those who are in paid employment at two consecutive waves ('continuous paid employment'). Also included in the models are socio-economic characteristics which are known from the literature to influence individuals' migration behaviour (sex, age, housing tenure, education/qualification), a survey (country) dummy as well as interaction terms between the survey dummy and variables signifying changes in employment status. Instead of the household composition (which is often used in migration research as an explanatory variable), we include a categorical variable indicating the presence of a partner and the partner employment status since recent entrepreneurship research has shown the importance of the spouse's employment status for self-employment decisions (Parker, 2008). In Model 2 we add interaction terms between sex and changes in employment status in order to test for differences between women and men in relation to employment status pre and post move.

Table 2: Probability of a move over 50 km and more between t and $t+1$, SOEP and BHPS, 2001–08, random effects, odds ratios

	Model 1		Model 2	
	OR	S.E.	OR	S.E.
Change in employment status t to $t+1$ (omitted: continuous paid employment jobch1)				
Continuously s/emp, home worker (jobch2)	1.353	0.318	1.407	0.337
Continuously s/emp, non-home worker (jobch3)	0.737	0.149	0.660*	0.153
Entry: unempl./inactivity into self-employment (jobch4)	3.400***	1.066	3.257***	1.057
Entry: paid employment into self-employment (jobch5)	2.297***	0.558	2.444***	0.599
Exit: from s/employment to unempl./inactivity (jobch6)	4.324***	1.466	4.194***	1.482
Exit: from s/employment to paid employment (jobch7)	4.038***	0.925	3.912***	0.938
Others (jobch8)	2.045***	0.168	2.026***	0.171
Sex (women)	0.889	0.065	4.129**	3.006
Interaction terms: Change in employment status & sex (omitted: jobch1*sex)				
jobch2*sex	-	-	1.804**	0.428
jobch3*sex	-	-	0.812	0.183
jobch4*sex	-	-	1.493	0.483
jobch5*sex	-	-	1.799**	0.439
jobch6*sex	-	-	1.287	0.451
jobch7*sex	-	-	0.928	0.220
jobch8*sex	-	-	1.077	0.085
Survey (SOEP)	0.967	0.682	0.882	0.625
Interaction terms: Change in employment status & survey (omitted: jobch1*SOEP)				
jobch2*SOEP	1.015	0.237	0.986	0.233
jobch3*SOEP	1.115	0.224	1.125	0.227
jobch4*SOEP	0.692	0.216	0.677	0.213
jobch5*SOEP	1.347	0.327	1.299	0.318
jobch6*SOEP	1.002	0.339	0.987	0.335
jobch7*SOEP	0.970	0.222	0.974	0.223
jobch8*SOEP	1.199**	0.094	1.204**	0.094
Age (years)	0.941***	0.003	0.941***	0.003
Owner occupation (yes)	0.410***	0.031	0.409***	0.031
CASMIN levels (omitted: higher tertiary) ¹				
No completed general education	0.119***	0.024	0.119***	0.024
Elementary	0.101***	0.021	0.101***	0.021
Basic vocational	0.147***	0.021	0.147***	0.021
Middle general	0.2069***	0.030	0.206***	0.030
Middle vocational	0.290***	0.032	0.290***	0.032
High general	0.670***	0.093	0.668***	0.093
High vocational	0.340***	0.049	0.341***	0.049
Lower tertiary	0.562***	0.066	0.561***	0.066
Employment status partner (omitted: worker in paid employment)				
Self-employed	1.522***	0.238	1.510***	0.237
Unemployed	2.468***	0.428	2.476***	0.430
Other inactive	1.375**	0.196	1.379**	0.196
No information/missing	2.522***	0.214	2.546***	0.217
No partner	1.779***	0.190	1.788***	0.191
N person-year observations (persons)	150,063	(31,853)	150,063	(31,853)
N(moves)	1,271		1,271	
Log likelihood	-6,193.629		-6,185.973	
Rho (within subject correlation)	0.420		0.420	
Pseudo R ²	0.111		0.113	

Notes: Pooled data, SOEP and BHPS 2001–2008. Moves and employment status are measured on a wave-to-wave basis. Significance: *** $p \leq 0.01$, ** $p \leq 0.05$, * $p \leq 0.1$

¹International educational classification which considers the level of education in terms of length of educational experience and required abilities (elementary, secondary, higher) together with the vocational oriented qualification.

Source: own calculation

The estimation results in Model 1 demonstrate that the ‘continuously self-employed’ (those who are self-employed at t and $t+1$) are not more or less likely to move over long distances regardless whether they had a home-based business pre move or not. However, there is a difference between the self-employed with home-based businesses and self-employed workers who mainly worked outside their home pre move. The odds ratios for home workers are noticeably greater than 1 while the odds for non-home workers are lower than 1. The effects are significantly different at the 5% level (not shown). This means that the self-employed who work from home (home-based businesses) are fairly geographically mobile.

Compared to those in continuous paid employment any changes in employment status are associated with a greater likelihood to migrate. It is important to remember that the reference category ‘continuous paid employment’ includes those who changed jobs within the wage and salary sector. An entry into self-employment both from unemployment/inactivity and paid employment increases the odds of migrating by 3.4 and 2.3 times respectively, all other factors equal. This finding suggests that many migrate and set-up a business in the new place. This contradicts the notions of indigenous start-ups and rooted business founders (Hanson, 2003). However, it could be that business founders moved to a former place of significance and dense networks which would explain why some research found a close geographical proximity of entrepreneurs to close family members (Dahl and Sorenson, 2009; Michelacci and Silva, 2007). Moreover, an exit from self-employment (both to unemployment/inactivity and paid employment) is most likely to be associated with a long distance move: the odds of migration are around 4 times higher for those who terminate self-employment compared to those who stay in continuous paid employment. The reasons for a positive association between the transition from self-employment to paid employment and migration cannot be explored further with our data. It is possible that those self-employed workers who might consider their self-employment as temporary, for example to overcome a shortage of jobs in their region of residence, move over long distances to secure a job in another region.

In Model 1, sex does not have the expected negative effect on migration. However, Model 2, which includes an interaction effect between sex and employment status, reveals that the relationship between self-employment and internal migration is shaped by gender. First of all, after including the interaction effect, the main effect for gender is now positive and significant. Thus after including the interaction effect in the model, women are more likely than men to migrate over longer distance. The interaction effect further shows that women who are continuously self-employed home-workers at two adjacent waves are more likely to migrate than women who are in continuous paid employment. This is also the case for women who switch from paid employment to self-employment. At the same time, the main effect for continuously self-employed workers who mainly worked outside their home at t —which can be interpreted as the effect for men only—drops somewhat when controlled for interaction effects with sex and all other factors equal. The models do not reveal any gendered effects on migration for an exit from self-employment. How can the gendered effects be understood? These are most likely the result of tied migration effects. It is well known from the literature that tied migration has negative impacts on women’s post-move employment situation. Many studies show that females who moved with their partner/family are more likely to be inactive or unemployed after the move than their male partners (e.g. Boyle et al. 2009; Cooke 2008). Hence, our results suggest that many self-employed women who have moved over long distances are likely to have experienced a tied move with their male partner. For these women, self-employment might be a strategy to be more mobile for the sake of the household as a whole. Being self-employed and working from home might not only be a solution to juggle work and family responsibilities as some research suggests (Ekingmyth, 2011, Mason et al., 2011; Hanson, 2003), but may also be a strategy to facilitate spatial mobility when living in a couple or family household.

The effect of the survey (country) dummy shows that there are no significant country differences in the likelihood to migrate when controlling for other factors. Most important in the context of the present study is that there are no country differences in the propensity to migrate between the continuous self-employed (both home workers and non-home workers) and workers in continuous paid employment (see interaction effect between survey and employment status). The remaining socio-economic control variables confirm results from previous research: young people are more likely to move over long distances than older people, homeowners are less likely to migrate than renters, and persons with a higher tertiary degree are most likely to migrate. Moreover, the partner's employment status is influential. Compared to those with a partner in paid employment, people are more likely to migrate when their partner is self-employed, unemployed or inactive or if they don't have a partner.

Table 3 presents estimation results for the likelihood of migrating over the period $t-2$ to t . If the respondents have moved residence over 50 km and more over the years 2003–2005 or 2006–2008, the outcome variable takes the value 1 and 0 if the respondents have not migrated. Four models are shown: one including employment status at t (Models 1); another one with employment status transitions between $t-2$ and t (Model 3); and for each of these models we also included interaction effects between employment status/transitions in employment status and sex (Models 2 and 4). We distinguish the currently self-employed again by home workers and those who mainly work outside their home (non-home worker) since we can expect differences in the migration behaviour among these groups of self-employed workers as earlier results suggested. Unfortunately, the numbers of migration events are too small to apply this distinction to the continuous self-employed over the period $t-2$ to t . With respect to employment status (changes) over the past three years we therefore compare those in continuous self-employment with those in continuous paid employment. We again include a range of control variables, including a survey dummy, interaction terms between the current employment status/transitions in employment status and the survey dummy and a set of socio-economic features.

Table 3: Probability of a move over 50 km and more between $t-2$ and t , SOEP and BHPS pooled, odd ratios

	Model 1		Model 2		Model 3		Model 4	
	OR	S.E.	OR	S.E.	OR	S.E.	OR	S.E.
Employment status at t (omitted: paid employment, lstat1)								
Self-employed, home worker (lstat2)	1.235	0.496	0.807	0.433	-	-	-	-
Self-employed, non-home worker (lstat3)	0.632	0.249	0.395*	0.192	-	-	-	-
Unemployed (lstat4)	2.333***	0.734	1.964**	0.676	-	-	-	-
Inactive (lstat5)	1.175	0.245	0.915	0.329	-	-	-	-
Sex (women)	0.823**	0.079	0.712***	0.076	0.796**	0.085	0.732***	0.089
Interaction terms: Employment status at t *sex (omitted:lstat1*sex)								
lstat2*sex(women)	-	-	2.577*	1.452	-	-	-	-
lstat3*sex(women)	-	-	3.222***	1.329	-	-	-	-
lstat4*sex(women)	-	-	1.444	0.495	-	-	-	-
lstat5*sex(women)	-	-	1.858	0.524	-	-	-	-
Employment status $t-2$ to t (omitted: continuous paid employment jobch1)								
Continuously self-employed (jobch2)	-	-	-	-	0.944	0.319	0.692	0.278
Continuously unemployed (jobch3)	-	-	-	-	#	#	#	#
Continuously inactive (jobch4)	-	-	-	-	0.996	0.266	0.989	0.460
Any transition (jobch5)	-	-	-	-	2.123***	0.344	1.976***	0.375
Interaction terms: Employment status $t-2$ to t *sex (omitted:jobch1*sex)								
jobch2*sex(women)	-	-	-	-	-	-	2.346*	1.091
jobch3*sex(women)	-	-	-	-	-	-	#	#
jobch4*sex(women)	-	-	-	-	-	-	1.037	0.506
jobch5*sex(women)	-	-	-	-	-	-	1.152	0.228
Survey (SOEP)	0.900	0.113	0.893	0.112	0.876	0.120	0.872	0.119
Interaction terms: Employment status at t *survey (omitted:lstat1*survey)								
lstat2*SOEP	0.930	0.527	0.892	0.499	-	-	-	-
lstat3*SOEP	1.564	0.724	1.492	0.695	-	-	-	-
lstat4*SOEP	0.673	0.257	0.667	0.256	-	-	-	-
lstat5*SOEP	1.030	0.304	1.013	0.297	-	-	-	-
Interaction terms: Employment status $t-2$ to t *survey (omitted: jobch1*SOEP)								
jobch2*SOEP	-	-	-	-	0.686	0.3181	0.658	0.306
jobch3*SOEP	-	-	-	-	#	#	#	#
jobch4*SOEP	-	-	-	-	1.120	0.460	1.135	0.459
jobch5*SOEP	-	-	-	-	1.027	0.211	1.028	0.211
Age (years)	0.943***	0.005	0.943***	0.005	0.947***	0.005	0.947***	0.005
Owner occupation (yes)	0.307***	0.032	0.306***	0.031	0.315***	0.032	0.316***	0.033
CASMIN levels (omitted: higher tertiary) ¹								
No completed general education	0.127***	0.039	0.129***	0.040	0.128***	0.039	0.129***	0.040
Elementary	0.127***	0.036	0.128***	0.036	0.125***	0.035	0.126***	0.035
Basic vocational	0.174***	0.032	0.176***	0.032	0.170***	0.031	0.170***	0.031
Middle general	0.249***	0.049	0.252***	0.050	0.250***	0.049	0.251***	0.050
Middle vocational	0.325***	0.046	0.327***	0.047	0.315***	0.044	0.317***	0.045
High general	0.612***	0.117	0.619**	0.118	0.605**	0.116	0.609**	0.117
High vocational	0.302***	0.058	0.306***	0.059	0.303***	0.058	0.304***	0.059
Lower tertiary	0.662***	0.096	0.665**	0.096	0.658***	0.095	0.657***	0.095

	Model 1		Model 2		Model 3		Model 4	
	OR	S.E.	OR	S.E.	OR	S.E.	OR	S.E.
Employment status partner (omitted: worker in paid employment)								
Self-employed	1.070	0.241	1.044	0.237	1.061	0.238	1.050	0.237
Unemployed	1.710*	0.474	1.716**	0.475	1.728**	0.466	1.733**	0.467
Other inactive	1.219	0.235	1.223	0.235	1.226**	0.238	1.228	0.238
No information/missing	1.604***	0.180	1.604***	0.181	1.637***	0.184	1.639***	0.184
No partner	1.813***	0.248	1.819***	0.249	1.824***	0.249	1.824***	0.249
Pooled waves 2005–03 (yes)	0.907	0.079	0.909	0.079	0.896	0.078	0.898	0.078
N person-year observations (persons)	38,172	(23,659)	38,172	(23,659)	38,172	(23,659)	38,172	
N(moves)	562		562		562		562	
Log likelihood	-2,460.830		-2,454.982		-2,433.926		-2,432.130	
Pseudo R ²	0.116		0.118		0.126		0.127	

Notes: Pooled data for waves 2008–06 and 2005–03. Features refer to 2008 and 2005 respectively. Standard errors are corrected for multiple observations. # Not shown because of few Migration events and corresponding large standard errors. Significance: *** p≤0.01, ** p≤0.05, * p≤0.1.

Source: own calculation

If we first look at effects of the current employment status and transitions in employment status on migration, without controlling for interactions with sex (Models 1 and 3), the estimation results confirm the earlier finding that the self-employed are not distinct from workers in paid employment in terms of their propensity to migrate. Both those who are in continuous self-employment over a 3-year period and those who are currently self-employed (either as home worker or non-home worker) are not less likely to have migrated recently than those in continuous paid employment and those who are currently employed respectively. As in Table 2, the odds ratio for a move of 50 km and more (Model 1) is lower for those who are currently self-employed working mainly outside their home (non-home workers) than for those who are currently working in paid employment, while the odds for self-employed home workers is higher. However, both effects are not significantly different from zero at the 10% level, and also the effects of self-employed home workers and self-employed non-home workers do not significantly differ (not shown).

The main effects for sex in the four models show that in general, women are less likely than men to migrate over long distance. The interaction effects between both the current employment status and transitions in employment status over $t-2$ and t and sex, shows that female self-employment is positively associated with migration (Models 2 and 4), as was found in Table 2. The female self-employed are around 2.5 times more likely to have migrated over the past two years than men in paid employment. Women who were continuously self-employed over $t-2$ to t are the most likely to have migrated. This supports our hypothesis that for women self-employment is a strategy to be spatially flexible (see also Büchel and van Ham, 2003). At the same time, the main effects of both the current self-employment status and continuous self-employment over $t-2$ to t —which in these models show the effect for men only—decrease when controlled for the interaction effects with sex (Model 2 and 4). Unfortunately, the number of migration events of couple/family households in either survey is too small to investigate the links between tied migration, self-employment and gender issues.

The survey dummy is again not significant indicating that there are no substantial differences in the relationship between migration and employment status between the two countries when controlled for other factors. The socio-economic features have again the expected effects on the likelihood of a past move over long distances as found in Table 2 (age, owner occupation, qualification, no partner). The effect of the period dummy is not significant which indicates that the probability to migrate has not changed between 2003–05 and 2006–08.

5. Discussion and conclusion

The entrepreneurship literature suggests that the self-employed are strongly rooted in place and are less likely to migrate than workers in paid employment. In the introduction and literature review we discussed several potential reasons why the self-employed could be less geographically mobile than workers in paid employment. Our analyses of German and UK data, however, find little evidence that confirms the residential rootedness–hypothesis of self-employment, when controlled for many observed and unobserved characteristics. The four most important findings are: First, the self-employed are not less likely to migrate than workers in paid employment over the period 2001–08. Second, those who are currently self-employed are also not less likely to have remained in place over a period of three years (2003–2005 and 2006–2008) as compared to those who are currently in paid employment. Third, those who are continuously self-employed over a 3-year period are not less likely to have migrated than those in continuous paid employment including those who changed jobs within the wage and salary sector. Fourth, in contrast to the residential rootedness–hypothesis

we found that an entry into self-employment and female self-employment are associated with internal migration. The self-employed with a home-based business also proved to be fairly geographical mobile. To sum up, our findings suggest that many people do *not* simply launch their business in the place where they live, and that many people move somewhere new to start a business (cf. Hanson, 2003). At the same time, self-employment does not necessarily ‘make’ people more ‘stuck’ in place than paid employment.

We expect that some people have the intention to become self-employed after moving, for example, to live in residentially attractive rural areas (Keeble and Tyler, 1995; Fielding, 1992), or in a favoured urban location such as London (Florida, 2002). For others, however, becoming self-employed after moving might be necessity-driven, and this might hold especially true for females. Recent literature on female entrepreneurship, shows that across Western countries, females have much lower self-employment rates and business survival rates than males (Wagner, 2007). There are still significant gaps in explaining the relevance of gender for self-employment and firm formation. Parker (2008) shows that the spouse’s occupational choice is important in understanding female self-employment choice. In accordance with the bulk of literature on family migration our results provide some valuable new insights: One reason for the transitory nature of female self-employment might be migration. The findings suggest that women rather than men are more likely to enter self-employment after moving inter-regionally with the couple/family household, for example to stay in the workforce until they find a job in the more secure wage and salary sector. This finding is surprising and confounds previous empirical results and theory. Future research should focus on these gender dimensions of both (tied) migration and the nature of self-employment (e.g. motivation, survival rates).

Although the SOEP and BHPS are the best available data sources for this research, the data had some limitations which affected our analyses. The small number of migration events in the data did not allow us to investigate further gender differences in geographic mobility behaviour. We could also not investigate in greater depth the relationship between migrating and the relocation of firms. Due to data limitations, we also did not distinguish between different types of self-employment. It can be assumed that self-employed workers who inherited a family business are more reluctant to move inter-regionally than, for example, professional sole proprietors in media and consultancy. Since our emphasis was on an integrated comparative study for Germany and the UK, we did not investigate within country regional differences in the relationship between migration and self-employment. Some regions might be more likely to attract would-be entrepreneurs than others, affecting the relationship between migration and self-employment. In the UK, future research will be able to investigate individual geographical mobility behaviour and the people–place relationship of self-employment on a more disaggregated level by using the household panel survey ‘Understanding Society’—the successor of the BHPS—thanks to its large sample size.

The findings presented in this paper contribute to a better understanding of self-employment and of the role of self-employment in regional labour markets. The results indicate that in both Germany and the UK people become self-employed after moving inter-regionally. At the same time, we found that people terminate their self-employment and then move inter-regionally. These findings have not been recorded before and point to the need for future research to account for transitions in employment status in order to better understand internal migration flows. Economic theory of migration considers mainly migration of workers in the wage and salary sector and the unemployed, however, the present study suggest that in Germany and the UK flows in and out of self-employment can also play a significant role in rebalancing regional labour markets.

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Appendix

Table A1. Sample description of self-employed workers, SOEP and BHPS, 2001–2008

	SOEP		BHPS	
	Males	Females	Males	Females
Sex (%)	66.3	33.7	71.1	28.9
Age, mean (std. dev.)	45.2 (9.5)	44.5 (9.2)	44.2 (10.8)	43.6 (10.1)
Marital status (%)				
Married/civil partnership	68.5	69.4	66.8	66.0
Separated, married/civil partnership	2.9	2.7	2.7	2.4
Never married	19.0	14.1	21.9	17.3
Divorced	8.8	11.5	8.4	13.1
Widowed	0.8	2.4	0.3	1.2
Housing Tenure (%)				
Homeowner	63.6	62.5	86.0	85.6
Renter (private and social)	36.2	37.1	12.9	13.3
Household type (%)				
One-person-household	13.3	11.9	10.5	9.8
Couple no children	26.1	26.8	25.4	24.9
Couple with children	56.1	51.9	58.4	55.8
Single Parent	1.9	6.9	3.6	8.5
Others	2.6	2.5	2.1	1.1
CASMIN Levels ¹ (%)				
No completed general education	0.3	0.5	16.0	9.4
Elementary	2.5	2.0	3.8	1.8
Basic vocational	24.2	14.1	10.3	8.2
Middle general	1.5	2.2	15.5	14.0
Middle vocational	24.1	28.9	7.0	7.0
High general	4.0	2.9	5.1	8.1
High vocational	7.0	9.3	8.2	4.0
Lower tertiary	10.8	7.8	19.4	25.3
Higher tertiary	25.6	32.3	14.8	22.2
Vocational qualification (CASMIN)				
None	8.3	7.6	40.3	33.2
General and middle qualification	55.3	52.3	25.5	19.2
High qualification (tertiary degree)	36.5	40.1	34.2	47.6
Types of self-employment (%)				
Agricultural self-employed	4.8	2.6	9.8	5.5
Non-agricultural solo self-employed	39.9	62.2	63.9	70.3
Professionals (incl. freelance)	28.1	36.9	17.8	24.4
Self-employed without employees (%)	42.4	63.6	71.4	74.5
Employment status of partner/spouse ²				
In paid employment	46.9	46.0	44.5	34.9
Self-employed	8.8	17.6	10.4	25.8
Unemployed	2.3	2.8	0.7	0.5
Other inactive	16.7	1.4	18.0	0.7
No information/missing	7.3	11.9	11.6	19.1
No partner	18.0	20.4	14.8	19.0
N (person-year observations)	5,010	2,552	4,739	1,909

Note: Pooled data 2001–2008 (unweighted). Persons aged 18–64 with information on employment and moving status for two adjacent waves.

¹International educational classification which considers the level of education in terms of length of educational experience and required abilities (elementary, secondary, higher) together with the vocational oriented qualification.

²This was derived from matching partners' information in the surveys. This was possible only when the partners were living in one household together (co-habiting or married). No information is available for partners living in separate household.

Source: own calculation

Table A2. Numbers of moves over 50 km and more in the SOEP and BHPS 2001–08 by transitions in employment status t to $t+1$

Changes in employment status t to $t+1$	Move \geq 50km		
	Total	SOEP	BHPS
Continuously in paid employment	745	373	372
Continuously self-employed, home worker	24	11	13
Continuously self-employed, non-home worker	37	23	14
Entry: unemployment into self-employment	15	7	8
Entry: paid employment into self-employment	25	14	11
Exit: self-employment to unemployment/inactivity	12	7	5
Exit: self-employment to paid employment	29	12	17
Others	384	245	139
Total	1,271	692	579

Note: Pooled data 2001–08, unweighted data. Moves and employment status are defined on a year-on-year basis.
Source: own calculation

Table A3. Number of persons who moved residence over 50 km and more between $t-2$ to t by employment status at t and employment status $t-2$ through t , pooled subsamples 2008–06 and 2005–03

	Total	SOEP	BHPS
Employment status at t			
In paid employment	405	224	181
Self-employed, homemaker	14	7	7
Self-employed, non-homemaker	30	20	10
Unemployed	46	33	13
Inactive	67	30	37
Employment status $t-2$ to t			
Continuously in paid employment	311	168	143
Continuously self-employed	23	11	12
Continuously unemployed	2	2	0
Continuously inactive/others	30	11	19
Any transitions	196	122	74
Total	562	314	248

Note: SOEP and BHPS, 39,310 observations of 24,410 persons.
Source: own calculation