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Following Your Job

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Abstract

Evolutionary economic geography has awoken an interest in the question how regions can attract new human capital. One method is to attract migration firms, who will bring (part of) their existing employees. These people can then attract or generate new jobs (Hoogstra, van Dijk, & Florax, 2005). In this paper, we study the mobility of employees when their firm decides to move: do they stick with their employer or not? And if they do, do they commute or not? Finally, we link the decision to commute longer distances to the availability of a company car.

We use microdata on individual firms and employees to test whether employees choose to follow their firm to another region. We control for personal and job characteristics. We find that having a company car is not correlated with the decision to stay with or to leave the current firm, but those who have one are less likely to move house, as long as the employee has a wage in the top quartile, or lives in the urban areas of the Randstad with their stressed housing market. Employees who already experienced long commutes before their employer moved are not influenced by the presence of a company car.

JEL codes

J61 (Geographic Labor Mobility • Immigrant Workers)
R23 (Regional Migration • Regional Labor Markets • Population • Neighborhood Characteristics)

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1. Introduction[1]

The regional labour market is an important resource for existing and new economic activities. It is not difficult to argue that for structural change in the regional economy, new sectors in particular need to find a firm basis in the local labour market. Employees who move across regions are thus an important avenue of research. Some employees will be held back by their family situation, or the housing market in their current region; some of them may still choose to commute to a region further away, even if they won't move their house. The current paper focuses in particular on these constraints employees experience.

We study these constraints in two steps. We furst study the moves of companies into a new region, and analyse which of its employees join it in this move. In a second step, we analyse which of the employees move to the new region rather than commute. In particular, we analyse the choices made by Dutch workers with and without a company car as a proxy for low and higher transportation cost, and we relate this to the option of moving house in order to 'follow your job', underlining the importance both of the housing market and of transportation cost.

The Netherlands since the twentieth century has a clear core-periphery structure, with the Randstad area functioning as the core, while the north and east are relative peripheries (Elhorst, Oosterhaven, Sijtsma, & Stelder, 1999); the south has a more mixed status due to its heavier urbanisation and industrialisation. Regional development policies have over the past decades striven to support the peripheral regions, among others by forcibly transplanting government agencies from the core to the periphery (de Smidt, 1985; van den Noord, 1984), but that strategy has petered out in the 1990s. Government subsidies on commercial moves, which had been succesful in transforming the regional pattern of industrialisation of the country in the 1950s and 1960s (Van Duijn, 1975), had been abolished as well. Their long-term success would be doubtful anyway: Devereux et al. (2007) showed such subsidies have difficulties to counteract traditional agglomeration forces, whereas Van Dijk and Pellenbarg (2000) show that internal factors are much more important in firm relocation decisions compared to external factors, such as subsidies. Still, with population shrinkage looming in the extreme peripheries of the Netherlands, a more active Dutch regional policy may in the future again be considered in order to temporarily alleviate the process (Haartsen & Venhorst, 2010).

Since there is a large degree of interdepence between job search, the housing market, and choices to commute (van Ommeren, Rietveld, & Nijkamp, 1999), we need to use some empirical limitations in order to ensure a tractable analysis. In particular, we remove all employees with multiple jobs at the same time, and we restrict ourselves to those cases where the firm moves over a relatively large distance. We then test which factors correlate with the choice of an employee to stay with her[2] firm, and with his choice to move house. We investigate whether employees in services and manufacturing behave differently, whether the actual distance plays a role, and whether the effects are different in large cities, which feature particularly stressed housing markets.

As expected, we will find that cheap transport allows workers to stay put and commute, and that the job of partner plays a statistically significant role. The presence of children, however, doesn't.

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[2] As the employee can be either male or female, we alternate freely between his and her.

2. Background

Paul Krugman's famous conversion[3] to regional economics, which led to him winning the Nobel Prize in 2008, put heavy emphasis on the importance of transportation cost for the concentration of economic activities (Krugman, 1991). In his basic model, lucidly discussed in Brakman et al. (2009), dynamics of wages intertwine with the location decisions of firms and workers. This model has been amply used in cost-benefit analysis for the wider benefits of transport infrastructure (Chen & Vickerman, 2017), even though it is based on an extremely stylized representation of our world. Still, the underlying question how regional disparities come into being, and how they can be overcome, remains highly relevant – and it rightly attracts most attention to the choices of employees, rather than those of firms. The firm literature, however, dominates the literature, including scores of studies into firm migration as in the demography of firms (van Wissen, 2000), their perception of distance and place (Meester & Pellenbarg, 2006), and their processes of clustering (Porter, 1998). These employees are in our opinion undervalued in most of the regional science literature; in the cluster literature, we see them surface as an agglomeration advantage of a region in location choice models – e.g., a Marshallian "thick labour market" (Head, Ries, & Swenson, 1995). Another particular strand of literature that focuses on employees consists of studies concerned with international migration, e.g. those of returning 'brain drain' migrants, who spark local development (Kenney, Breznitz, & Murphree, 2013). Faggian et al. (2017) discuss the literature that does focus on (interregional) employee migration. They point in particular to a lack of data, of which the current study does not suffer, having at its disposal the universe of Dutch employees and firms.

It should be noted that outside of regional science, labour economists in particular have already developed a much broader understanding of the motives for employees to move, in particular when they are looking for a new job (van Vuuren, 2002). However, this literature tends to take the location of firms for granted, focusing on the choice an employee makes between commuting and moving (White, 1988; Romaní, Suriñach, & Artiís, 2003; Eliasson, Lindgren, & Westerlund, 2003; Champion, Coombes, & Brown, 2009, and many others). In economic geography, some recent studies consider both to be flexible. For example, Koster and Venhorst (2014) discuss the simultaneous location choice of self-employed entrepreneurs, who are of course a special case in that they decide on both locations simultaneously, in some cases simply because these locations coincide. These authors conclude such self-employed entrepreneurs tend to relocate their firm in order "to resolve the locational puzzle" (Koster & Venhorst, 2014, p. 436).

Endogeneity

A key issue in analyses of the labour market is that of endogeneity (van der Klaauw, 2014). Decisions to switch jobs and to move residence are often closely related (van Ommeren, Rietveld, & Nijkamp, 2000). In order to counter this endogeneity, natural experiments (e.g., Card, 1990) have become popular in this field, as they have in that of transportation economics (e.g., Ahlfeldt, 2011) and regional economics (Redding & Sturm, 2008). In our case, we choose to focus on those cases where it is not the employee who chooses to relocate, but his firm. In most cases, the individual employee will not have an influence on such a move, and she is therefore faced with an exogenous factor. A similar approach was taken amongst others by Mulalic, Van Ommeren and Pilegaard (2014). They focus on the compensation employers may give their employees who commute from further away; such a compensation should not exist according to standard economic literature, as employees get paid for their productivity, not according to their cost of living. For the years 2003-2005, they are able to trace about 7500 employees who did not change

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[3] Actually, Krugman writes "I have spent my whole professional life as an international economist thinking and writing about economic geography, without being aware of it" (Krugman 1991b).

residence when their firm moved, yet they remained employed at that firm; and over 11,000 employees who did move in the same circumstances. In their dataset, most changes in commuting distance amounted to no more than a few kilometres.

The changing location of employment is thus a key trigger, in line with many findings of the so-called 'Dutch school' which Clark et al. (2003) identify. These papers systematically find that in the Netherlands, a change in the job location leads to a larger probability that the employee will accept another position; the residential location is less flexible, in part due to the Dutch housing market (van Ommeren, Rietveld, & Nijkamp, 1997). The other way around occurs much less often: an employee rarely decides to move first and then realizes a new job in a different location would fit her new location better.

3. Research design

We study the optional change in job and location of the employee given the fact that employer moves and therefore the commuting time adjusts. But the change in commute is certainly not the only factor influencing the decision process that it sets off, particularly when that change is large. We include five different factors, and discuss each of them below. The next section then describes the available data, followed by the results.

Firstly, the position the employee has at the firm will influence the decision, particularly in relation to his alternatives in the labour market he can reach from his current home. The sector will be an important factor here: specialized workers in the chemical sector may have fewer alternatives than anyone working in generic business services. Moreover, the size of his current firm may influence the opportunities of promotion, it may offer prestige, and large firms may offer jobs that focus on very specialized tasks. Specialized tasks can in turn give an employee a chance to excel, rewarding her with higher job satisfaction and/or pay. Finally, parttime work may also not be offered by all employers, and it may not be as easy to find as a full time position. We shall therefore control for these factors. We also drop the smallest firms (see Appendix A.1).

A second group of factors determining the choice to commute is formed by the family situation. Having young children to take care of means it is more opportune to have at least one parent working close to home – what Doorleever Fortuijn and Karsten called the 'new local' (1989, p. 371). Studies on the parents' allocation of child care time rarely take commuting into account (for example, Henly & Lyons, 2000 ignore it; Kalenkoski, Ribar, & Stratton, 2009 mention it only in a footnote), with as notable exception the strand of literature that focuses on boundaries beween work home, and other places (Kossek, Noe, & DeMarr, 1999): in that framework, commuting is one of the transitions of such boundaries, and a large distance between work and family is thus perceived as a large boundary between the two. We will be able to observe how the propensity to quit a job increases with an increasing commute: at some point, the commute apparently becomes unbearable.

A third group of factors is formed by the housing market. In the Dutch context, planning is strict, and thus the housing supply is heavily regulated (Vandevyvere & Zenthöfer, 2012). However, in particular in the larger cities in the Randstad area, viz. Amsterdam, Utrecht, The Hague, and to a lesser degree also Rotterdam, demand exceeds supply to such a degree that finding affordable housing can pose serious problems for those entering from another region, since they have not benefitted from a similar increase in value of their previous house. This problem also hurts those who left the Randstad area temporarily, and might thus convince those considering a move away from the Randstad to stay there. An additional argument to stay is of course formed by the

relatively large accessibility of other (suitable) jobs in the dense Randstad. The housing supply situation thus can play a major role; in fact, Vermeulen & van Ommeren (2009) conclude in more general terms that housing supply is a more important determinant of the regional distribution of economic activity than vice versa. However, Van Leuvensteijn & Koning (2004) concluded based on microdata that Dutch homeowners do not change jobs less often than tenants – but they study all of the Netherlands, without distinguishing the Randstad core from the periphery. Doing so will be our solution to these problems: we will run our regressions separately for those who currently live in the four largest cities, or in the most central city of Utrecht in particular.

Fourthly, commuting costs specific to the individual rarely figure in such models. Company car data may shed light on this individual commuting cost, as such cars provide a specific advantage to a subgroup of employees. Company cars are the subject of a slowly growing strand of literature. Some studies analyse their health aspects (Koornneef, Hendriksen, & Bernaards, 2014), others the welfare distortion of these cars as fringe benefits (Gutiérrez-i-Puigarnau & Van Ommeren, 2011). Cheap transportation can work in two ways on the commuting landscape: it can make central locations, such as Utrecht, extremely attractive; or it can result in a spreading equilibrium for residential choices, especially if there are amenities in certain residential areas (Ng, 2008). The latter of course offers opportunities for regional policy, where amenities are one of the key factors that can be influenced, e.g. by providing extra green space (Morancho, 2003; Waltert & Schläpfer, 2010) or investing in unique heritage (van Duijn, Rouwendal, & Boersema, 2014).

Finally, a key factor in the modern labour markets is the job of the partner (Rouwendal & Rietveld, 1994). In the Netherlands, like in most of Western Europe, dual earner households have become the norm (Dingeldey, 2001), including many so-called 'power couples' (Costa & Kahn, 2000). Statistics Netherlands calculates in fact that when looking at women aged 35 in 2015, 75% of the households involved had two working partners. Even among those aged 55, this number is 50%. Households with only one job are becoming rare (Centraal Bureau voor de Statistiek, 2015), even though they were prevalent up to 1960, when only 7% of married women had a paid job (Droogleever Fortuijn & Karsten, 1989). There is a particularly heavy strand of literature focusing on the unequal roles and choices of male and female partners when it comes to commuting and location choices, showing among others that men systematically commute more (Blumen & Kellerman, 1990; Plaut, 2006). Moreover, migration is often based upon the labour market choices of one partner, with negative effects for the career of the other (Mulder & Hooimeijer, 1999).

4. Data and descriptives

We employ data from Statistics Netherlands, starting with the Algemeen Bedrijfsregister (the General Registry of Firms), covering all establishments in the Netherlands with their location and the number of employees. This gives us all firms that moved between 2004 and 2008. We now use the Sociaal-Statistisch Bestand (Social Statistics Dataset; Houbiers, 2004) to link these firms to their employees. For each employee, we register whether his 2004 employer has moved, and whether he himself moved. Moreover, we calculate the distances of both moves, using a drive time matrix prepared by Geodan to get distances in minutes of travel time (in free flow). We then add some background data on the employee: the change in wage, age, sex, and her household composition.

A key variable is of course the possession of a company car. Since the tax office is the supplier of the data in the Social Statistics Dataset, we know whether an employee has paid taxation for the private us of his company car. Such a taxation is only exempt for those using their company car for fewer than 500 km a year, but a hefty administration is required for those who want to prove

so (de Rooij & Kanning, 2008). According to the publicly available data of Statistics Netherlands, over 500.000 (ca. 7%) of all Dutch employees have a company car (Drankier, 2013). In our dataset, we find a rather similar number of 7.5% among the subsample of 3.5 million employees in our dataset before the final step in the cleaning process.

To simplify the data, we impose some limitations on our sample. We use only employees who have one job in both 2004 and 2008, with permanent status in 2008,[4] and exclude extreme wages (below 10% of and above 10 times the average daily wage). That leaves us with 4.9 million observations for 2008, and 6.2 million for 2004. However, a large number of these employees is found in only one of those years, either because they dropped out of the labour market or had entered it between those two years, or because they did not satisfy one of our criteria in one of the two years. Combining the years left us with 3.9 million employees. We then remove those employees with administrative errors, in particular firms with unclear identifiers, those without residential or work location, as well as all those who moved their house within the year 2004 or 2008. Importantly, we also drop firms with fewer than 10 employees, since for very small firms, it becomes more and more likely that the individual employee did have an influence on the relocation choice of her firm, or at least that her individual locational preferences were considered in the process.

Then, for consistency's sake, we only look at those who have a working partner in the database, and restrict ourselves to those cases where the work place of the partner remained the same. Assuming the couple was living in a convenient location, given their other parameters – perhaps even in an optimal location – this will create an extra pull force for their current home; but the effect is the same for all couples in the data. Cases where the partner also had to move, or at least also chose to move are much more complicated to model, as both the choice to relocate and the actual location to relocate to then depend on the situation of the partner. We therefore choose to leave such intertwined choices to future research.

Finally, we exclude all employees with missing values. In particular the spatial data is an issue here, since there we need location data for both employee and firm for both years. This final cleaning leaves us with 730,458 observations.

Descriptives

Regional labour markets are often treated as self-contained and well-delimited, and in such a setting the move of workers from one region to another would be clear and unambiguous, as in Krugman's core-periphery model. Yet such an approach is blatant nonsense in a dense and polycentric country like the Netherlands – the subject matter of this paper – where some workers commute straight across the country. We therefore need to focus on the commuting time of individual workers, rather than rely on existing regional boundaries. We use time as the measure of (driving) distance. This implies we are not including public transport, nor are we controlling for the direction of the moves. Some employees will have had a long commute, but are happy to find the firm relocates towards their house; for others, it may 'skip over' their house, keeping the commute the same; or it may be that they choose to relocate in our second stage, but end up no nearer to their employer. We believe our straightforward commuting time will pick up the most important effect, and many of the other effects will cancel out.[5]

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[4] This data is not available for 2004.
[5] Table 4 (below) will show how actual changes are large only for small numbers of people.

Many employees move when their firm is not moving at all (10%), and as the distance over which the firm relocates increases, the share of employees moving decreases rather than increases. This poses interesting questions, as their motives can be related to their family (which we know about), their house and labour market perspectives (which we can only control for with regional effects), or their transportation cost (which we are about to test).

Table 1 Did the employee move?

	Distance firm moved				
employee...	0	1-30 mins.	31-60 mins.	>60 mins.	total
...did not move	1,362,638	48,416	23,255	12,198	1,446,507
	90%	92%	93%	93%	90%
...did move	150,445	4,045	1,834	864	157,188
	9.9%	7.7%	7.3%	6.6%	10%
total	1,513,083	52,461	25,089	13,062	1,603,695

Workers who stayed with their firm when it moved, saw their commuting time decrease by almost one minute on average (Table 2), which is probably the reason for many of them not to move; but even among those who did move, this decrease is the same, indicating they ended up slightly closer to the firm, compared to the situation before both moved. Note, however, that the standard deviation is very high, indicating there exists both a subgroup of immobile employees who accepted a much longer commute, as well as a subgroup of mobile employees who managed to decrease their commute.

Table 2 Changes in commute

	complete sample		non-moving firms		moving firms	
minutes	#	%	#	%	#	%
less than -60	8,330	1.1%	332	0.1%	7,998	4.8%
-60 to -30.1	17,014	2.3%	1,192	0.2%	15,822	9.5%
-30 to -0.1	71,888	9.8%	11,390	2.0%	60,498	36.4%
0	536,308	73.4%	532,906	94.4%	3,402	2.0%
+0.1 to +30	72,612	9.9%	16,820	3.0%	55,792	33.6%
+30.1 to +60	16,711	2.3%	1,522	0.3%	15,189	9.1%
more than +60	7,595	1.0%	261	0.0%	7,334	4.4%

Note: All distances are in minutes of free-flow travel time.

As for the other descriptives, the average daily commuting time observed in our dataset is just under 13 minutes for the non-movers, which is quite close to the 13.7 minutes travel time to and from work reported by Statistics Netherlands for 2010.[6] However, when the firm moves, commuting time increases to 27 minutes. In those cases where the employee moves as well, we observe a very similar average commuting time, albeit with a slightly larger spread. This indicates employees accept a very similar commuting time after their move. Moreover, Table 2 showed that

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[6] Although both numbers come from data gathered by Statistics Netherlands, the sources are different: the 13.7 minutes comes from the 2010 mobility survey (the earliest available: CBS Statline, 2015), and is accompanied by a 8.7 km average daily travel distance to and from work in 0.48 separate travel moments – indicating quite some people do not commute to work at all. Compared to other travel motives, the distance traveled is highest for work reasons; the second largest distance is for sports and other hobbies (11.4 km), followed by social calls (8.6 km).

the changes in commuting time from 2004 to 2008 are symmetric across the dataset, even when the firm moves.

The variables in our full dataset are as follows, with summary statistics available in Table 3 as well as in the appendix (Table A.2 and A.3, with a correlation matrix in Table A.4).

- five spatial variables:
    - to the distance the firm moved
    - the distance the employee moved
    - the commuting time in 2004 and 2008, and the change in commute
- six job variables:
    - the employee's wage in 2004 and 2008, and its change
    - her share of a full-time job in 2004 and 2008; on average the employees in our sample hold a position of 0.8 fte
    - the tax paid on the company car, which we convert into a dummy for our regressions
- two personal variables:
    - age and sex of the employee
- seven variables on the partner:
    - his share of a full time job in 2004
    - his commute in 2004 and 2008
    - his wage in 2004, plus a dummy for those cases where the subject earns less than his partner;
    - the partner's change in wage between 2004 and 2008, knowing his job is kept stable in our dataset
    - his sex, including a dummy for same-sex couples
- five variables at the household level, which are not reported in Table 3:
    - the number of people in the household
    - a dummy variable for households without children
    - a dummy variable for households where the youngest child is below 4 years old, since Dutch children start primary school on the day they turn 4 years old
    - a dummy variable for households where the youngest is in primary school
    - a dummy variable for households where the youngest child is in secondary school
    - a dummy variable for households where the youngest child is over 18, i.e. all children can assumed to be more footloose as they may leave the household soon to go studying or form a family of their own

Table 3 Descriptives

	neither moves		only firm moves		both move	
	mean	st.dev.	mean	st.dev.	mean	st.dev.
Number of observations	1,362,638		83,869		6,743	
Distance the firm moved	0.0	(0.0)	39.7	(29.7)	50.0	(37.8)
Distance the employee moved	0.0	(0.0)	0.0	(0.0)	43.5	(37.0)
Commuting time, 2004	12.6	(18.0)	27.1	(29.7)	25.9	(31.4)
Commuting time, 2008	12.6	(18.0)	28.0	(28.3)	25.6	(27.7)
Change in commuting time, 2004-2008	0.0	(0.0)	-0.9	(39.0)	-0.9	(38.8)
Daily wage, 2004	125.7	(69.5)	132.5	(82.1)	128.9	(87.2)
Daily wage, 2008	152.3	(90.5)	165.7	(111.6)	175.6	(125.3)
Change in wage, 2004-2008	26.6	(52.0)	33.2	(79.0)	46.7	(94.6)
Parttimer: share of a full-time job, 2004	0.8	(0.2)	0.8	(0.3)	0.8	(0.3)
Parttimer: share of a full-time job, 2008	0.8	(0.2)	0.8	(0.3)	0.9	(0.2)
Age, 2004	40.9	(10.5)	40.1	(11.2)	34.2	(10.6)
Sex (1: male, 2: female)	1.5	(0.5)	1.4	(0.5)	1.4	(0.5)
Tax paid on private use of car	589.3	(2348.8)	888.8	(2698.9)	991.1	(2774.6)
Parttime share of partner, 2004	0.8	(0.2)	0.8	(0.3)	0.9	(0.2)
Tax paid on private use of car by partner	711.9	(2536.6)	716.7	(2539.5)	1070.8	(2996.9)
Sex of partner (1: male, 2: female)	1.5	(0.5)	1.5	(0.5)	1.5	(0.5)
Commuting time of partner, 2004	16.8	(22.6)	18.4	(22.9)	22.6	(25.5)
Commuting time of partner, 2008	16.6	(22.0)	18.1	(22.1)	23.8	(23.9)
Change in wage of partner, 2004-2008	27.9	(57.9)	28.8	(60.8)	43.1	(77.6)

Note: All distances are in minutes of free-flow travel time.

Note that we observe a wage increase for those employees whose firm moved. This can be a question of compensation, analogous to that observed by Mulalic, Van Ommeren and Pilegaard (2014), or a sample selection issue – perhaps employees higher up in the company hierarchy chose to stay with the firm when it moves more often than receptionists, security staff, and blue collar workers. We will therefore splits the sample in our analysis by wage quartile to test for the latter effect.

We also observe slightly higher wages for employees with a longer commute, and display this in Figure 1. However, the difference in wages is not as stark as the increase in company cars across longer commutes. Average commuting times in 2008 are also plotted in the same figure, indicating a steady increase that tapers off slightly about halfway the graph. For reference, we have also plotted the share of individuals with a same sex partner. Notwithstanding the lower likelihood of such couples to have (young) children, the variation of this variable over different commuting distances seems to be rather random. Finally, we describe the changes the partner experienced in her/his commuting in Table 4. Since we chose to include only cases where the partner's work location remained in the same work location, changes in the partner's commute reflect the choices couples made when moving to new house. We see that in many cases, even where the firm of the individual did not move (top panel) they accepted a longer commute for both partners.
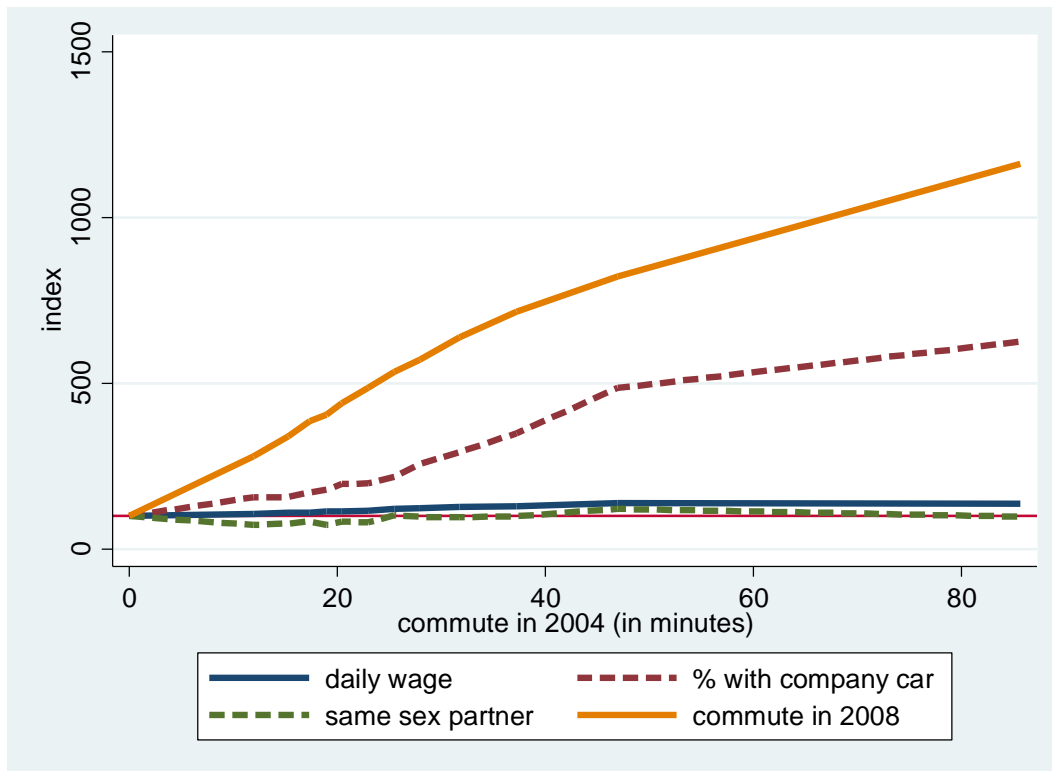
Figure 1 Four variables compared to commuting distance in 2004

Table 4 Commuting changes 2004-2008 compared to those of the partner; for non-moving firms (top panel, n=564,423), and for moving firms (bottom panel, n=166,035)

↓individual / partner →	less than -30	-30 to -0.1	0	+0.1 to +30	more than +30
less than -30	357	338	288	318	223
-30 to -0.1	747	4,723	1,413	3,916	591
0	21,741	54,827	385,079	50,762	20,497
+0.1 to +30	838	4,499	1,722	8,821	940
more than +30	263	323	235	438	524

↓individual / partner →	less than -30	-30 to -0.1	0	+0.1 to +30	more than +30
less than -30	169	601	22,203	714	133
-30 to -0.1	207	1,378	56,757	1,936	220
0	94	497	1,966	762	83
+0.1 to +30	203	1,358	51,622	2,335	274
more than +30	91	469	20,958	810	195

Note: All distances are in minutes of free-flow travel time.

5. Results

Our aim is to show which types of employees choose to follow their job – which ones stay with their firm when it moves away, and which ones subsequently move house. We therefore perform a two-step analysis, first predicting with a probit whether a person remains with her firm, then whether she will move to a different municipality. In both steps, we use a series of control variables on the level of the firm; a series of variables at the level of the employee and his partner;

and variables that relate to the combination of employee and firm, including the commuting distance and its change, and the wage. Of particular interest to us is the presence of a company car, which would lower commuting cost for the employee significantly, making it easier to stay with the firm when it moves away yet to continue commuting.

Does the employee stay with the firm?

Table 5 shows the results of the first probit analysis. It shows the correlations of different factors with the choice an employee makes to stay with the firm. Most important is of course the question whether the firm actually moved, and how far: therefore, Table 6 splits the same analysis out between firms that didn't move at all and firms that moved over larger distances. In Table 5, however, the total change in commute takes care of the possible moves of both firm and worker, and as such provides a baseline. Compared to the cases where the commute doesn't change at all, the probability that an employee stays with her firm is lower for *any* change in commute, including those where it becomes a lot *shorter*. This can of course be partly explained by employees who switch to a new employer, located closer to their home.

As for the other control variables, older employees are more likely to stay with their employer, and if the partner works part time or earns more, an employee is more likely to switch employers. The wage of the partner by itself, or its change, is not important, nor is the household situation as regards children.

Table 5 Probit: stay with firm?

	(1)		(2)		(3)	
Company car	-0.027	(-1.00)	-0.025	(-0.91)	-0.025	(-0.89)
Firm size: 10-19 employees	ref.cat.		ref.cat.		ref.cat.	
20-49 empl.	0.066***	(4.45)	0.065***	(4.40)	0.065***	(4.42)
50-99 empl.	0.085***	(3.71)	0.083***	(3.62)	0.083***	(3.64)
100-149 empl.	0.036	(1.08)	0.034	(1.01)	0.034	(1.02)
150-199 empl.	-0.045	(-0.98)	-0.047	(-1.02)	-0.046	(-1.00)
200-249 empl.	-0.033	(-0.64)	-0.035	(-0.69)	-0.035	(-0.68)
250-499 empl.	-0.130**	(-3.01)	-0.133**	(-3.09)	-0.133**	(-3.07)
500-999 empl.	0.048	(0.92)	0.043	(0.83)	0.045	(0.87)
1000-1999 empl.	-0.071	(-1.04)	-0.076	(-1.12)	-0.074	(-1.08)
over 2000 empl.	-0.117	(-1.35)	-0.123	(-1.41)	-0.120	(-1.37)
Change in commute: <-60 mins.	-0.825***	(-11.94)	-0.820***	(-11.86)	-0.803***	(-11.74)
-60 to -30.1	-0.766***	(-13.09)	-0.761***	(-12.91)	-0.745***	(-12.77)
-30 to -0.1	-0.518***	(-17.75)	-0.511***	(-17.36)	-0.502***	(-17.20)
0	ref.cat.		ref.cat.		ref.cat.	
0.1 to 30	-0.546***	(-18.90)	-0.539***	(-18.47)	-0.538***	(-18.32)
30.1 to 60	-0.756***	(-15.77)	-0.753***	(-15.71)	-0.740***	(-15.57)
>60	-0.884***	(-10.73)	-0.883***	(-10.78)	-0.867***	(-10.63)
Works parttime (2004)	0.154***	(4.58)	0.155***	(4.89)	0.138***	(4.25)
Daily wage (2004)	0.000	(1.88)	0.000	(1.09)	0.000	(0.64)
Change in wage	0.000	(0.18)	0.000	(0.45)	0.000	(0.36)
Age (2004)			0.004***	(8.35)	0.005***	(8.90)
Female			-0.013	(-0.71)	0.005	(0.29)
Persons in household			0.001	(0.13)	-0.000	(-0.06)
No children			ref.cat.		ref.cat.	
Youngest <=3			0.010	(1.05)	0.008	(0.78)
Youngest in primary school age			0.016	(1.68)	0.014	(1.45)
Youngest in sec. school age			0.008	(0.83)	0.008	(0.84)
Youngest >18			0.010	(1.17)	0.011	(1.29)
Homosexual couple					-0.034	(-1.50)
Earns less than partner					-0.030**	(-2.84)
Partner works parttime (2004)					-0.054***	(-3.95)
Partner's change in commute: <-60					ref.cat.	
-60 to -30.1					-0.032	(-1.48)
-30 to -0.1					-0.017	(-0.80)

	(1)		(2)		(3)	
0					-0.108***	(-5.47)
0.1 to 30					0.006	(0.27)
30.1 to 60					-0.011	(-0.51)
>60					-0.022	(-0.90)
Daily wage of partner (2004)					0.000	(0.24)
Change in partner's wage					0.000	(0.99)
Constant	0.468***	(7.88)	0.306***	(4.38)	0.431***	(5.65)
Firm sector dummies	Yes		Yes		Yes	
Observations	730,458		730,458		730,458	
Pseudo R^2	0.082		0.083		0.084	

Table 6 provides more details on the situation where the firm doesn't move at all (1), but the employee may move – hence the changes in commute reported – and those where the firm does move, over different distances (2-4). In none of these cases is an employee more likely to stay with her firm when she has a company car, reported at the top. However, for larger firms that don't move, the probability to stay there decreases with size; but when they do move, the probability increases with size, particularly for larger distances. Even though it can be expected that for very large firms the employee has no influence whatsoever on the move, the probability to stay at the firm and join in the move grows. Even more counterintuitive is the result that parttime employees are more likely to stay with the firm when it moves over a longer distance – but it should be noted that the estimated coefficient is larger, but the t-value is very small, particularly compared to the large number of observations.

Among the personal, partner and household variables, we note in particular that there is no difference between men and women, but that older employees as well as employees with a larger household are more likely to stay with a firm that moves over a longer distance. Finally, staying at a firm that moves over a longer distance goes hand in hand with a commute of the partner that does not increase by more than 30 minutes.

Table 6 Probit: stay with firm?, depending on the distance the firm moved

	(1)		(2)		(3)		(4)	
	Firm didn't move		Firm moved 1-30 minutes		Firm moved 31-60 minutes		Firm moved >60 minutes	
Company car	0.010	(0.31)	0.024	(0.64)	0.004	(0.11)	0.019	(0.45)
Firm size: 10-19 employees	ref.cat.		ref.cat.		ref.cat.		ref.cat.	
20-49 empl.	0.064***	(3.67)	0.152***	(3.31)	0.205***	(3.85)	0.142	(1.86)
50-99 empl.	0.064*	(2.41)	0.252***	(3.49)	0.273***	(4.43)	0.453***	(5.37)
100-149 empl.	-0.016	(-0.41)	0.307***	(4.31)	0.353***	(4.48)	0.387***	(3.97)
150-199 empl.	-0.107*	(-2.09)	0.211*	(2.54)	0.389***	(3.66)	0.489***	(3.87)
200-249 empl.	-0.130*	(-2.26)	0.490***	(5.38)	0.390***	(4.01)	0.593***	(4.74)
250-499 empl.	-0.224***	(-4.83)	0.370***	(5.13)	0.418***	(5.09)	0.455***	(4.75)
500-999 empl.	-0.091	(-1.59)	0.655***	(8.20)	0.819***	(10.47)	0.825***	(8.09)
1000-1999 empl.	-0.249***	(-3.44)	0.629***	(6.49)	0.883***	(8.62)	0.710***	(5.11)
over 2000 empl.	-0.335***	(-3.66)	0.515***	(5.33)	0.806***	(7.35)	0.808***	(5.98)
Change in commute: <-60 mins.	0.048	(0.62)	-0.743***	(-3.56)	0.337	(1.80)	0.249	(1.88)
-60 to -30.1	-0.066	(-1.64)	-0.237*	(-2.24)	-0.034	(-0.34)	0.276*	(2.26)
-30 to -0.1	0.013	(0.91)	-0.031	(-0.76)	0.125	(1.41)	0.365**	(3.06)
0	ref.cat.		ref.cat.		ref.cat.		ref.cat.	
0.1 to 30	-0.028	(-1.59)	-0.071	(-1.67)	0.067	(0.77)	0.287*	(2.32)
30.1 to 60	-0.047	(-1.12)	-0.018	(-0.19)	0.023	(0.26)	0.288*	(2.16)
>60	-0.097	(-1.11)	-0.349	(-1.11)	0.160	(0.74)	0.156	(1.14)
Works parttime (2004)	0.102**	(3.05)	0.138**	(2.77)	0.117	(1.56)	0.180*	(2.02)
Daily wage (2004)	0.000	(1.29)	0.000	(1.18)	-0.000	(-1.79)	-0.001**	(-2.96)
Change in wage	0.000	(0.43)	0.000	(0.88)	-0.000	(-0.28)	-0.001*	(-2.37)
Age (2004)	0.002***	(4.65)	0.013***	(14.13)	0.015***	(12.33)	0.014***	(9.47)
Female	0.002	(0.38)	-0.007	(-0.89)	-0.001	(-0.07)	0.013	(1.00)
Persons in household	-0.027	(-1.52)	0.059*	(2.14)	0.115***	(3.34)	0.137**	(3.00)
No children	ref.cat.		ref.cat.		ref.cat.		ref.cat.	
Youngest <=3	0.011	(1.02)	0.038	(1.69)	-0.035	(-1.22)	-0.060	(-1.51)

Youngest in primary sch. age	0.026*	(2.36)	0.035	(1.53)	-0.003	(-0.11)	-0.014	(-0.40)
Youngest in sec. school age	0.006	(0.54)	0.043*	(2.05)	0.057*	(2.07)	-0.010	(-0.30)
Youngest >18	0.000	(0.04)	0.035	(1.81)	0.067**	(2.66)	0.058	(1.75)
Homosexual couple	-0.028	(-1.12)	-0.008	(-0.16)	-0.113	(-1.69)	-0.154	(-1.40)
Earns less than partner	-0.024*	(-2.30)	-0.043*	(-2.38)	-0.034	(-1.29)	-0.058	(-1.80)
Partner works parttime (2004)	-0.048**	(-3.13)	-0.055*	(-2.06)	-0.100**	(-2.90)	-0.059	(-1.30)
P.'s change in commute: <-60	ref.cat.		ref.cat.		ref.cat.		ref.cat.	
-60 to -30.1	-0.050*	(-2.26)	-0.007	(-0.03)	-0.049	(-0.21)	0.417*	(2.16)
-30 to -0.1	-0.053*	(-2.40)	-0.142	(-0.64)	0.059	(0.27)	0.539**	(2.98)
0	-0.048*	(-2.35)	-0.097	(-0.43)	0.180	(0.82)	0.665***	(3.96)
0.1 to 30	-0.050*	(-2.23)	-0.092	(-0.41)	0.046	(0.21)	0.590***	(3.34)
30.1 to 60	-0.032	(-1.44)	-0.112	(-0.47)	0.113	(0.49)	0.326	(1.75)
>60	-0.024	(-0.96)	0.004	(0.01)	0.257	(0.73)	0.194	(0.80)
Daily wage of partner (2004)	0.000	(1.85)	-0.000*	(-2.12)	-0.000	(-1.42)	-0.000	(-1.64)
Change in partner's wage	0.000	(1.60)	-0.000	(-1.67)	-0.000*	(-2.18)	-0.000	(-1.51)
Constant	0.619***	(7.50)	-1.156***	(-4.27)	-1.683***	(-5.85)	-2.831***	(-7.09)
Firm sector dummies	Yes		Yes		Yes		Yes	
Observations	564,423		87,427		51,080		27,485	
Pseudo R^2	0.071		0.078		0.098		0.092	

We also separate out the employee's wage in four quartiles, reported in Table 7. The presence of a company car in the second quartile renders a negative coefficient, indicating employees with a company car but a wage just below the average are less likely to stay with their firm. This effect is difficult to explain, yet it is not statistically significant from the coefficient found for the employees with the lowest wage, where having a company car is of course less common; so we can generalize it to a general hypothesis that the presence of cheap transport may decrease the probability to stay with the current firm for those with an income below the average. This can be attributed to the larger search range affordable transportation allows these employees; the range is also enhanced by their lower value of time, allowing them to commute longer distances than those with a higher wage, even though in practice, the latter groups commute further because they (and their partners) have to travel to more specialized jobs.

Employees with wages above average in smaller firms, up to 99 employees, are more likely to stay with their firm; it is not unlikely they have had a more active say in the move itself. The change in commute, however, does not seem to differ across the four wage groups. We do see interesting effectfor the household composition: if the youngest child is in the preschool age, the employees in the lowest wage quartile are *more* likely to stay at their employer, while those in the higest wage quartile are *less* likely to do so. This can perhaps be linked to a desire for greater security among those with a lower wage, versus a more optimistic position on the labour market of those in the top quartile, who can use this particular moment when their child is not yet in school for a last move before doing so becomes less opportune.[7]

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[7] We have repeated the analysis for several specific sectors as well as based on the gender of the worker. These results are available in the appendix, table A5.

Table 7 Probit: stay with firm? , depending on worker's wage

	(1)		(2)		(3)		(4)	
	Wages: bottom quartile		*Wages: second quartile*		*Wages: third quartile*		*Wages: top quartile*	
Company car	-0.075	(-1.23)	-0.087**	(-2.66)	-0.039	(-1.48)	0.048	(1.33)
Firm size: 10-19 employees	ref.cat.		ref.cat.		ref.cat.		ref.cat.	
20-49 empl.	0.043	(1.67)	0.033	(1.69)	0.115***	(5.59)	0.088***	(3.48)
50-99 empl.	0.084*	(2.01)	0.067*	(2.54)	0.115***	(4.14)	0.091**	(2.88)
100-149 empl.	0.033	(0.60)	-0.003	(-0.08)	0.063	(1.66)	0.073	(1.65)
150-199 empl.	-0.031	(-0.42)	-0.078	(-1.57)	-0.044	(-0.89)	0.017	(0.28)
200-249 empl.	-0.124	(-1.57)	-0.012	(-0.21)	-0.009	(-0.17)	0.017	(0.27)
250-499 empl.	-0.129*	(-1.99)	-0.172***	(-3.72)	-0.104*	(-2.15)	-0.077	(-1.43)
500-999 empl.	0.183*	(2.44)	-0.024	(-0.43)	-0.012	(-0.19)	0.090	(1.40)
1000-1999 empl.	-0.075	(-0.82)	-0.093	(-1.28)	-0.079	(-0.99)	-0.006	(-0.07)
over 2000 empl.	-0.188	(-1.70)	-0.190*	(-2.01)	-0.118	(-1.11)	0.011	(0.11)
Change in commute: <-60 mins.	-0.731***	(-7.54)	-0.834***	(-10.70)	-0.843***	(-10.17)	-0.778***	(-9.83)
-60 to -31	-0.758***	(-10.52)	-0.794***	(-14.17)	-0.796***	(-11.91)	-0.658***	(-8.59)
-30 to 0	-0.477***	(-15.10)	-0.521***	(-18.44)	-0.527***	(-15.81)	-0.479***	(-11.15)
0	ref.cat.		ref.cat.		ref.cat.		ref.cat.	
1 to 30	-0.558***	(-14.16)	-0.560***	(-20.86)	-0.529***	(-14.97)	-0.491***	(-11.94)
31 to 60	-0.695***	(-12.52)	-0.755***	(-15.03)	-0.718***	(-12.13)	-0.769***	(-11.92)
>60	-0.826***	(-9.55)	-0.893***	(-6.73)	-0.866***	(-9.03)	-0.871***	(-11.34)
Works parttime (2004)	0.080	(1.61)	0.085	(1.89)	-0.033	(-0.69)	-0.072	(-1.30)
Daily wage (2004)	0.003**	(3.16)	0.002*	(2.43)	0.001	(1.72)	-0.000*	(-2.25)
Change in wage	-0.002***	(-3.55)	-0.000	(-0.87)	-0.000	(-0.78)	0.000***	(3.73)
Age (2004)	0.006***	(7.99)	0.005***	(5.82)	0.002	(1.88)	0.006***	(7.15)
Persons in household	0.001	(0.11)	0.005	(0.86)	0.005	(0.84)	-0.007	(-1.10)
Female	0.142***	(6.74)	-0.005	(-0.23)	-0.064*	(-2.37)	-0.059*	(-2.01)
No children	ref.cat.		ref.cat.		ref.cat.		ref.cat.	
Youngest <=3	0.057**	(3.08)	0.022	(1.58)	-0.034	(-1.91)	-0.063**	(-3.06)
Youngest in primary school age	0.042*	(2.04)	-0.012	(-0.81)	-0.006	(-0.38)	-0.018	(-0.92)
Youngest in sec. school age	0.015	(0.87)	-0.027	(-1.87)	0.017	(1.06)	0.009	(0.53)
Youngest >18	0.018	(1.23)	-0.027	(-1.90)	0.027	(1.81)	0.015	(0.98)
Homosexual couple	0.023	(0.46)	0.015	(0.39)	-0.078*	(-2.15)	-0.093*	(-2.49)
Earns less than partner	-0.001	(-0.06)	-0.007	(-0.79)	-0.004	(-0.39)	-0.011	(-0.71)
Partner works parttime (2004)	-0.055	(-1.79)	-0.039	(-1.92)	-0.065**	(-2.92)	-0.057**	(-2.62)
P.'s change in commute: <-60	ref.cat.		ref.cat.		ref.cat.		ref.cat.	
-60 to -31	-0.053	(-1.42)	-0.014	(-0.36)	-0.028	(-0.75)	-0.039	(-0.86)
-30 to 0	-0.017	(-0.47)	0.012	(0.35)	-0.057	(-1.63)	-0.016	(-0.41)
0	-0.086**	(-2.67)	-0.110**	(-3.22)	-0.148***	(-4.47)	-0.095*	(-2.52)
1 to 30	-0.009	(-0.26)	0.038	(1.05)	-0.032	(-0.89)	0.015	(0.38)
31 to 60	-0.037	(-0.93)	0.019	(0.49)	-0.069	(-1.81)	0.035	(0.82)
>60	0.002	(0.06)	-0.005	(-0.12)	-0.129**	(-2.89)	0.072	(1.39)
Daily wage of partner (2004)	0.000	(1.49)	0.000	(0.51)	-0.000	(-1.68)	-0.000	(-1.51)
Change in partner's wage	0.000	(1.46)	-0.000	(-0.06)	0.000	(0.02)	0.000	(0.26)
Constant	-0.059	(-0.54)	0.330**	(3.00)	0.707***	(4.53)	0.756***	(5.01)
Firm sector dummies	Yes		Yes		Yes		Yes	
Observations	168,575		188,655		191,552		181,622	
Pseudo R^2	0.075		0.090		0.096		0.098	

Does the employee move?

We then move on to the second stage, displayed in Table 8. We include only those cases where the employee decided to stay with his firm, leaving us with just below half a million employees.The question now is whether they chose to move house. Our variable of interest performs completely intuitively here: in the presence of a company car, an employee is less likely to move house. Instead, she may commute longer distances with the affordable transportation offered.

The change in commute reported in the table shows an endogenous result: employees who don't move house are of course quite likely to have an unchanged commute. Hence, the cases where the commute did change go together with significantly more cases where the employee moved house. Of more interest are the other variables. It is shown here that parttime workers are much more

likely to move hous, but those with larger families are not. Gender also plays a role, but as we control for more variables related to the (relative) characteristics of both partners, the effect changes sign: model (2) in Table 8 showed that females are more likely to move, but model (3) indicates they are *less* likely to move, given that we there are positive effects for homosexual couples, for partners working parttime, for partners with a longer commute or an increase in their commute, as well as for partners with a higher wage or a higher increase in their wage.

Table 8 Probit: move house?

	(1)		(2)		(3)	
Company car	-0.146***	(-9.80)	-0.114***	(-7.50)	-0.108***	(-6.99)
Change in commute: <-60 mins.	1.639***	(52.21)	1.676***	(52.24)	1.743***	(52.89)
−60 to −31	1.845***	(84.29)	1.871***	(83.82)	1.927***	(83.40)
−30 to 0	2.184***	(163.63)	2.212***	(159.87)	2.278***	(152.38)
0	ref.cat.		ref.cat.		ref.cat.	
1 to 30	2.497***	(188.71)	2.525***	(183.84)	2.584***	(173.96)
31 to 60	2.033***	(96.64)	2.064***	(96.25)	2.106***	(95.36)
>60	1.694***	(50.30)	1.740***	(50.76)	1.771***	(50.76)
Works parttime (2004)	0.425***	(19.83)	0.391***	(14.30)	0.524***	(18.45)
Daily wage (2004)	0.000***	(4.75)	0.001***	(10.91)	0.000***	(4.94)
Change in wage	0.001***	(16.49)	0.001***	(18.08)	0.001***	(14.06)
Age (2004)	-0.037***	(-72.07)	-0.029***	(-50.84)	-0.029***	(-48.12)
Persons in household			-0.111***	(-15.17)	-0.099***	(-13.26)
Female			0.155***	(13.68)	-0.049***	(-3.75)
No children			ref.cat.		ref.cat.	
Youngest <=3			0.188***	(10.50)	0.170***	(9.38)
Youngest in primary school age			-0.209***	(-10.75)	-0.182***	(-9.19)
Youngest in sec. school age			-0.350***	(-17.27)	-0.314***	(-15.25)
Youngest >18			-0.319***	(-15.32)	-0.281***	(-13.34)
Homosexual couple					0.183***	(4.32)
Earns less than partner					-0.017	(-1.32)
Partner works parttime (2004)					0.376***	(14.55)
P.'s commuting time (2004)					0.009***	(43.09)
P.'s change in commute					0.008***	(35.29)
Daily wage of partner (2004)					0.001***	(12.35)
Change in partner's wage					0.001***	(13.74)
Constant	-1.797***	(-69.61)	-1.962***	(-39.15)	-2.472***	(-43.96)
Observations	468,956		468,956		468,956	
Pseudo R^2	0.452		0.469		0.484	

Finally, we split the results from Table 8 by wages, reporting in Table 9 the bottom versus the top quartile, as well as spatially, with separate regressions (3) for the four largest cities, all of them in the Randstad area, and (4) for the centrally located city of Utrecht. Separate regressions for these cities allow us to check in particular whether a stressed housing market influences the decisions. Model (5) in Table 9 includes only those employees who had a longer commute at the start of our observation. They may be more likely to stay with a moving firm even if the commute increases.

As for the wage categories, differences are small. As expected, employees with a company car and a top wage are less likely to move house – they can face a longer commute. Employees in the bottom quartile are not sensitive to this effect, even if they have a company car at all. Note however that the effect of the company car is much stronger for the Utrecht sample; yet it disappears among the employees who had a long commute to start with. Parttime work is not important in the top wage group, nor is it important in the cities: perhaps parttime work is so common in these environments it no longer makes a difference. Being female is also not a significant factor in the largest cities nor in Utrecht in particular; it has the negative sign reported in the last model of Table 8 for the other models in Table 9. Having a very young child in the household is not a factor for employees in the lowest wage group. Surprisingly, the dummy

for gay couples doesn't show any significant result for the lowest or highest wage groups, nor for the two urban regressions.

Table 9 Probit: move house?

	(1)	(2)	(3)	(4)	(5)
	Wages: bottom quartile	Wages: top quartile	Largest cities	Utrecht	Commute was at least 30 mins.
Company car	0.019	-0.105***	-0.144**	-0.313**	-0.047
Change in commute: <-60 mins.	1.473***	2.026***	1.968***	2.290***	1.892***
-60 to -31	1.718***	2.024***	1.706***	1.820***	2.081***
-30 to 0	2.067***	2.322***	2.327***	2.520***	2.237***
0	ref.cat.	ref.cat.	ref.cat.	ref.cat.	ref.cat.
1 to 30	2.298***	2.676***	3.119***	3.302***	2.643***
31 to 60	1.840***	2.227***	2.782***	2.731***	1.994***
>60	1.509***	2.013***	2.501***	2.895***	1.796***
Works parttime (2004)	0.480***	0.196*	0.165	0.269	0.492***
Daily wage (2004)	0.005***	0.000	-0.000	-0.001	0.001***
Change in wage	0.002***	0.001***	0.001*	0.001*	0.001***
Age (2004)	-0.026***	-0.022***	-0.025***	-0.026***	-0.029***
Persons in household	-0.082***	-0.107***	-0.087***	-0.095	-0.067***
Female	-0.107**	-0.085**	-0.007	0.139	-0.053*
No children	ref.cat.	ref.cat.	ref.cat.	ref.cat.	ref.cat.
Youngest <=3	0.039	0.349***	0.388***	0.548***	0.125***
Youngest in primary school age	-0.215***	-0.106**	-0.036	0.067	-0.258***
Youngest in sec. school age	-0.283***	-0.310***	-0.235***	-0.256	-0.368***
Youngest >18	-0.263***	-0.269***	-0.209**	0.124	-0.265*
Homosexual couple	0.123	0.159	0.054	-0.014	0.204*
Earns less than partner	0.007	0.062	-0.084*	-0.178	-0.014
Partner works parttime (2004)	-0.019	0.468***	0.347***	0.385	0.395***
P.'s commuting time (2004)	0.007***	0.011***	0.022***	0.022***	0.012***
P.'s change in commute	0.006***	0.011***	0.026***	0.021***	0.007***
Daily wage of partner (2004)	0.001***	0.000*	0.001**	0.000	0.001***
Change in partner's wage	0.002***	0.001***	0.001***	0.001	0.001***
Constant	-2.145***	-2.486***	-2.215***	-2.487***	-2.768***
Observations	108,477	111,923	33,544	5,517	79,225
Pseudo R^2	0.449	0.471	0.629	0.642	0.390

6. Conclusions

The presence of a company car seems to play a role in the decision process an employee faces when their employing firm changes its location. However, it does not do so in all circumstances. In general, the decision to stay or leave the current firm has no statistically significant correlation, no matter the distance the firm moved, or indeed whether it moved at all. But once we zoom in on wage groups below the average, the presence of a company car is correlated with a lower tendency to stay with the current firm. Even though the car is a benefit that is normally tied to the current position, it is possible these employees are in jobs that will regularly come with a company car at any position, e.g. a travelling salesman, and the employee is not particularly attached to her current employer. Once the decision to stay with the current firm has been made, the presence of a company car is a significant factor in the next decision, whether to stay at the current house or to move to another place.

Age matters for both decisions, as was to be expected. Gender doesn't: in particular, the gender of the worker has no statistically significant correlation with the decision to move when the current house is in the urban areas of the Randstad; apparently, men and women take the same decision there. Parttime workers likewise do not differ from full time workers in these most urban areas.

These insights possibly point to a more modern or at least less traditional labour market in the core of the country.

From an evolutionary perspective, the current study throws light on the stability of regional markets. Employees are moving much more often than their firms move, but when the firm does so, a sizeable part of the employees sticks to the firm and thus moves to a different labour market area. Either this employee, when he is ready to switch jobs, or his partner, may then bring new skills to that area, perhaps enabling a branching process (Frenken & Boschma, 2007).
The current study points out several avenues for further research. If the situation in the four largest cities differs indeed from that in the rest of the country, it would be interesting to know more of the housing situation of the individual employees, i.e. at the microlevel. Moreover, it would be interesting to have more data on the other transportation alternatives households have, including public transport cards which are partly paid for by the employer.

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Appendix

Table A.1 Number of observed jobs by firm size

firm size in employees	employees observed	% of total	
0	3,079	0	removed from sample
1	23,201	2	
2	18,936	1	
3-4	35,171	3	
5-9	64,556	5	
10-19	84,450	6	in sample
20-49	119,111	9	
50-99	94,983	7	
100-149	60,844	4	
150-199	47,075	3	
200-249	40,899	3	
250-499	129,644	9	
500-999	143,252	10	
1000-1999	153,726	11	
2000 and more	349,579	26	

Table A.2 Overall descriptives

(n = 730,458)

	mean	st.dev.
Did the employee stay at the firm?	0.642	(0.48)
Distance the firm moved	9.035	(21.83)
Distance the employee moved	-0.027	(18.80)
Commuting time, 2004	0.062	(0.24)
Commuting time, 2008	0.083	(0.28)
Change in commuting time, 2004-2008	0.818	(0.24)
Daily wage, 2004	130.042	(65.35)
Daily wage, 2008	28.030	(50.18)
Change in wage, 2004-2008	41.242	(8.87)
Share working parttime, 2004	1.494	(0.50)
Share working parttime, 2008	3.318	(1.08)
Age, 2004	36.428	(41.04)
Sex (1: male, 2: female)	38.171	(39.92)
Tax paid on private use of car	0.007	(0.09)
Share of partners working parttime, 2004	0.488	(0.50)
Tax paid on private use of car by partner	0.809	(0.24)
Sex of partner (1: male, 2: female)	10.000	(2.46)
Commuting time of partner, 2004	127.964	(66.20)
Commuting time of partner, 2008	27.184	(51.21)
Change in wage of partner, 2004-2008	0.642	(0.48)

Table A.3 Descriptives for the sample where the individual stays working at the same firm

(n = 468,956)	neither moves		only firm moves		both move	
	mean	st.dev.	mean	st.dev.	mean	st.dev.

Distance the firm moved	0.0	(0.0)	37.3	(28.5)	35.8	(27.3)
Distance the employee moved	0.0	(0.0)	0.0	(0.0)	26.8	(18.8)
Commuting time, 2004	14.4	(18.5)	28.6	(28.3)	24.3	(27.9)
Commuting time, 2008	14.4	(18.5)	27.9	(27.2)	26.0	(26.3)
Change in commuting time, 2004-2008	0.0	(0.0)	-0.7	(36.0)	1.8	(33.4)
Daily wage, 2004	127.3	(62.1)	135.2	(68.3)	133.1	(66.3)
Daily wage, 2008	153.9	(83.2)	163.1	(90.4)	168.3	(94.4)
Change in wage, 2004-2008	26.7	(45.4)	27.9	(47.6)	35.2	(51.8)
Share working parttime, 2004	0.8	(0.2)	0.8	(0.2)	0.9	(0.2)
Share working parttime, 2008	0.8	(0.2)	0.8	(0.2)	0.8	(0.2)
Age, 2004	41.7	(8.8)	42.3	(8.7)	37.5	(9.3)
Sex (1: male, 2: female)	1.5	(0.5)	1.4	(0.5)	1.5	(0.5)
Tax paid on private use of car	544.2	(2078.1)	842.7	(2506.5)	959.3	(2611.5)
Share of partners working parttime, 2004	0.8	(0.2)	0.8	(0.3)	0.9	(0.2)
Tax paid on private use of car by partner	617.3	(2239.3)	463.6	(1963.2)	731.8	(2400.4)
Sex of partner (1: male, 2: female)	1.5	(0.5)	1.6	(0.5)	1.5	(0.5)
Commuting time of partner, 2004	17.5	(22.9)	14.0	(17.8)	19.1	(19.9)
Commuting time of partner, 2008	17.3	(22.4)	14.0	(17.8)	22.6	(19.7)
Change in wage of partner, 2004-2008	26.2	(51.0)	25.0	(45.7)	35.3	(52.0)

All distances are in minutes of free-flow travel time.

Table A.4 Correlations

		a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s
a	Stay with the firm?	1.00																		
b	Distance the firm moved	-0.21	1.00																	
c	Change in commuting time, 2004-2008	0.01	-0.02	1.00																
d	Distance the employee moved	-0.02	0.03	0.03	1.00															
e	Has company car	-0.01	0.11	-0.01	0.04	1.00														
f	Share working parttime, 2004	0.01	0.07	-0.01	0.05	0.20	1.00													
g	Daily wage, 2004	-0.03	0.08	-0.03	0.02	0.31	0.39	1.00												
h	Change in wage, 2004-2008	-0.02	0.04	0.00	0.05	0.34	0.16	0.11	1.00											
i	Age, 2004	0.04	-0.02	0.01	-0.14	-0.03	0.00	0.14	-0.07	1.00										
j	Sex (1: male, 2: female)	-0.02	-0.09	0.01	0.00	-0.24	-0.65	-0.39	-0.13	-0.13	1.00									
k	Household size	0.00	0.00	0.00	-0.05	0.03	-0.14	0.02	0.04	-0.21	0.00	1.00								
l	Age of youngest child (2008)	0.01	-0.01	0.00	0.03	-0.03	0.11	0.00	-0.05	0.32	0.00	-0.81	1.00							
m	Age of eldest child (2008)	0.01	-0.01	0.00	0.02	-0.03	0.10	0.00	-0.05	0.32	0.00	-0.78	1.00	1.00						
n	Homosexual couple?	-0.01	0.00	0.00	0.01	-0.01	0.03	0.01	0.00	0.00	0.00	-0.09	0.10	0.10	1.00					
o	Earns less than partner?	-0.01	-0.07	0.01	0.00	-0.20	-0.52	-0.49	-0.09	-0.08	0.61	0.00	0.00	0.00	0.00	1.00				
p	Partner's share working parttime, 2004	-0.03	-0.06	0.00	0.06	-0.16	-0.45	-0.31	-0.08	-0.16	0.65	-0.13	0.10	0.09	0.03	0.52	1.00			
q	Change in wage of partner, 2004-2008	0.00	0.01	0.02	0.06	0.00	0.01	0.00	0.00	0.01	-0.01	0.00	0.00	0.00	0.00	-0.02	-0.02	1.00		
r	Daily wage of partner, 2004	-0.02	-0.04	0.00	0.03	-0.05	-0.32	0.00	0.02	0.03	0.39	0.02	0.00	0.00	0.01	0.50	0.39	-0.03	1.00	
s	Change in partner's wage, 2004-2008	-0.01	-0.01	0.00	0.05	-0.01	-0.09	0.02	0.03	-0.09	0.14	0.04	-0.05	-0.05	0.00	0.09	0.16	0.00	0.08	1.00

Table A.5 Probit: stay with the firm? Depending on the sector or the sex of the worker

	(1)		(2)		(1)		(2)	
	manufacturing		*services*		*Men*		*Women*	
Company car	0.075	(1.87)	-0.048	(-1.57)	0.022	(0.83)	-0.088*	(-1.97)
firm of 10-19 empl.	ref.cat.		ref.cat.		ref.cat.		ref.cat.	
firm of 20-49 empl.	0.083***	(3.44)	0.056**	(3.03)	0.067***	(4.33)	0.063**	(2.73)
firm of 50-99 empl.	0.106**	(3.01)	0.075**	(2.61)	0.078***	(3.51)	0.098**	(2.75)
firm of 100-149 empl.	0.029	(0.59)	0.039	(0.93)	0.016	(0.51)	0.070	(1.42)
firm of 150-199 empl.	-0.010	(-0.15)	-0.045	(-0.77)	-0.038	(-0.81)	-0.039	(-0.63)
firm of 200-249 empl.	0.014	(0.15)	-0.034	(-0.56)	-0.047	(-0.86)	-0.004	(-0.06)
firm of 250-499 empl.	-0.060	(-0.87)	-0.131*	(-2.53)	-0.124**	(-2.68)	-0.124*	(-2.27)
firm of 500-999 empl.	-0.004	(-0.04)	0.078	(1.33)	-0.054	(-0.91)	0.144*	(2.30)
firm of 1000-1999 empl.	-0.267	(-1.92)	-0.013	(-0.18)	-0.132	(-1.56)	-0.018	(-0.23)
firm of over 2000 empl.	-0.759**	(-2.92)	-0.042	(-0.48)	-0.094	(-0.86)	-0.129	(-1.39)
<-60	-1.094***	(-10.97)	-0.727***	(-8.99)	-0.864***	(-12.76)	-0.710***	(-6.78)
-60 to -31	-0.991***	(-14.19)	-0.691***	(-10.34)	-0.744***	(-11.59)	-0.763***	(-11.40)
-30 to 0	-0.841***	(-21.70)	-0.437***	(-13.36)	-0.549***	(-14.98)	-0.455***	(-16.02)
0	ref.cat.		ref.cat.		ref.cat.		ref.cat.	
1 to 30	-0.930***	(-23.90)	-0.459***	(-14.09)	-0.597***	(-18.04)	-0.481***	(-13.92)
31 to 60	-1.234***	(-17.63)	-0.617***	(-12.06)	-0.861***	(-16.01)	-0.573***	(-10.82)
>60	-1.317***	(-11.21)	-0.740***	(-8.44)	-0.942***	(-10.15)	-0.755***	(-8.96)
Works parttime (2004)	0.240***	(4.65)	0.106**	(3.04)	0.279***	(5.32)	0.075*	(2.17)
Daily wage (2004)	-0.000	(-1.71)	0.000	(1.54)	-0.000	(-0.80)	0.001*	(2.21)
Change in wage	-0.000	(-1.74)	0.000	(1.20)	-0.000	(-0.40)	0.000*	(2.09)
Age (2004)	0.006***	(7.52)	0.004***	(7.17)	0.005***	(7.89)	0.004***	(6.25)
Persons in household	-0.008	(-1.15)	0.001	(0.19)	0.002	(0.36)	-0.003	(-0.59)
Sex	0.041	(1.46)	0.005	(0.24)				
no children	ref.cat.		ref.cat.		ref.cat.		ref.cat.	
Youngest <=3	-0.007	(-0.38)	0.011	(0.99)	-0.052***	(-4.23)	0.070***	(5.49)
Youngest in primary school age	-0.008	(-0.47)	0.017	(1.54)	-0.025*	(-2.01)	0.051***	(3.57)
Youngest in sec. school age	0.015	(0.89)	0.006	(0.53)	0.021	(1.78)	-0.003	(-0.26)
Youngest >18	0.009	(0.57)	0.012	(1.22)	0.022*	(2.01)	-0.001	(-0.06)
Homosexual couple	-0.054	(-0.82)	-0.036	(-1.52)	-0.049	(-1.63)	-0.015	(-0.52)
Earns less than partner	0.003	(0.19)	-0.034**	(-3.03)	-0.012	(-1.04)	-0.025*	(-2.00)
Partner works parttime (2004)	-0.009	(-0.46)	-0.068***	(-3.96)	-0.059***	(-3.97)	0.023	(0.85)
P.'s change in commute: <-60	ref.cat.		ref.cat.		ref.cat.		ref.cat.	
-60 to -31	-0.009	(-0.19)	-0.036	(-1.49)	-0.005	(-0.15)	-0.048	(-1.79)
-30 to 0	0.038	(0.90)	-0.028	(-1.16)	-0.020	(-0.67)	-0.020	(-0.76)
0	-0.107**	(-2.64)	-0.111***	(-5.02)	-0.129***	(-4.69)	-0.097***	(-3.94)
1 to 30	0.065	(1.49)	-0.008	(-0.30)	0.007	(0.23)	-0.006	(-0.22)
31 to 60	0.077	(1.60)	-0.029	(-1.17)	0.010	(0.30)	-0.027	(-0.99)
>60	-0.003	(-0.05)	-0.023	(-0.85)	-0.023	(-0.61)	-0.016	(-0.53)
Daily wage of partner (2004)	-0.000*	(-2.03)	0.000	(0.64)	-0.000	(-1.17)	0.000	(1.60)
Change in partner's wage	-0.000*	(-2.03)	0.000	(1.59)	-0.000	(-0.77)	-0.000	(-0.27)
Constant	0.366***	(3.53)	0.493***	(6.00)	0.364***	(4.28)	0.343***	(3.60)
Firm sector dummies	Yes		No		Yes		Yes	
Observations	151,069		579,389		369,730		360,719	
Pseudo R^2	0.142		0.072		0.104		0.069	