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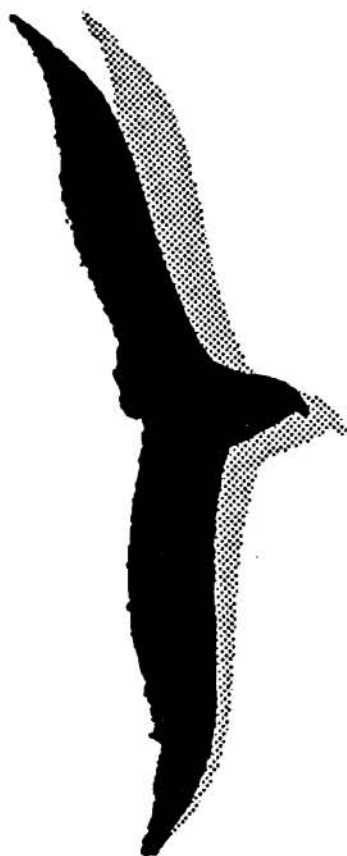
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An Empirical Note on Job Turnover and Internal Mobility of Workers

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# AN EMPIRICAL NOTE ON JOB TURNOVER AND INTERNAL MOBILITY OF WORKERS

by Wolter Hassink\*

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## Abstract

I find that large firms have a higher rate of job turnover in which internal mobility of workers is involved. These firms are able to reduce turnover costs, by making use of their ability to attain a higher internal mobility rate.

Keywords: labor demand, job flows, internal mobility, adjustment costs

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## 1. Introduction

A recent survey of the literature on labor demand demonstrates that there is a need for more information on the structure and sources of adjustment costs (Hamermesh and Pfann, 1994). These costs have a substantial impact on the structure of the adjustment of employment. It is very remarkable that studies on the role of internal mobility of workers in the adjustment process are hardly available (Lagarde *et al.*, 1995, Hamermesh *et al.*, 1996). This note investigates empirically whether large and small firms use internal mobility differently to create or destroy jobs.<sup>1</sup> A difference between firms in the relative size of this flow reveals different structures of the adjustment costs of job turnover.

## 2. Job turnover and internal mobility

Jobs may be reallocated within firms in various ways. Usually, studies on job turnover ignore the variety of possible job changes by focusing solely on net employment change at the firm level (*e.g.* Davis and Haltiwanger, 1992). A creation or destruction of a job results from job moves of workers at a firm. Various possibilities are available to obtain the same result. For instance, a job may be destroyed by firing a worker, but it can also take place by moving this worker internally to another job. The decision on these changes is based on the adjustment costs that underlay the possible worker flows. A certain flow will be used if the costs of its use are smaller than the costs of the alternative possibilities.

For the labor demand policy of firms the role of internal mobility is twofold. First, internal mobility results in careers of workers inside firms, so that their firm-specific human capital will be preserved. It leads to long-term relationships between the workers and the employer. Second, internal mobility may be used in a more mechanical way. As well as an appointment of an external worker for a new job or a dismissal of a worker for a redundant job, there may be job reallocation through internal mobility.

Basically, there are three possibilities for internal mobility. First, a job may

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<sup>1</sup> Some studies compare differences in net job turnover of large and small firms. It appears that small firms have a higher net job turnover rate, though this is mainly caused by the higher birth and death rate of these firms (Broersma and Gautier, 1995).

be created by moving an incumbent worker to the new job. For the vacant, existing job an external worker is hired. Second, a job may be destroyed by moving the worker from this job to a vacant, existing job within the firm. Third, there may be a creation and destruction of jobs at once, by moving a worker from the destroyed job to the newly-created job. The first two possibilities imply a change of the number of jobs. The last one gives job turnover, but the number of jobs is kept constant.

The use of internal mobility for job reallocation, as an alternative to direct hiring or firing of workers, also alters the adjustment costs because more than one worker is involved (except for the third possibility). Internal mobility may reduce total adjustment costs, because a firm can exploit the valuable firm-specific human capital of its workers. To create a job, there is an internal movement if its costs are low, as compared with the costs of an external hiring for that job. For instance, a firm may hire an incumbent worker if his (or her) firm-specific capacities are needed for that job. To destroy a job, a firm may evade expensive firing costs by having internal movements (either to an existing or to a newly-created job).

To attain a high rate of internal mobility, large firms may benefit from their size (Hamermesh et al., 1996). One reason is that large firms have more vacant jobs within a short time interval, ceteris paribus. Another reason is that their work force is more heterogeneous, which increases the availability of suitable internal job changes. Yet, it is not so obvious that large firms exploit their higher rate of internal mobility to create or destroy jobs. For a firm, it may be cheaper to reallocate jobs directly by hiring or firing, instead of using internal mobility. Internal mobility does not necessarily have to be aimed at job creation or destruction, since these workers may also move between existing jobs. Hence, a priori, it is unclear whether large and small firms use internal mobility differently to create or destroy jobs.

From a macro-perspective, it is important to examine any differences between large and small firms. A different use of internal mobility for job turnover reflects differences in easiness of firms to adjust to widespread external shocks.

### **3. Estimates**

The data set is collected by the Organization for Strategic Labor Market Research (The Hague). I use a subsample of these data, which contains information on 1158

Dutch organizations, observed in 1990. In the sequel I denote these organizations as firms. The firms have at least 10 workers, and they are from all economic sectors, including government and education.

For each firm the number of hires, separations and internal mobility of workers has been established. These worker flows (and also the corresponding employment measure) do not include temporary workers. To determine the number of hires (and separations) firms were asked "how many persons entered (left) the organization, workers with a temporary contract included, but workers with a temporary contract shorter than one year excluded." Internal mobility is measured as "the number of employees who changed function and/or changed department within the organization during the year."

If a firm experienced any hiring, separation or internal mobility of workers, it was asked to report whether the last worker in the flow separated from an existing or a destroyed job (for the separations and internal mobility). Also for the hires and the internal mobility it is asked whether the last worker in the flow went to a newly-created job or an existing job. For more details on these data I refer to Hamermesh *et al.* (1996), who use the same data set.

The firms are distinguished into categories of small firms ( $< 100$  workers) and of large firms ( $\geq 100$  workers). The worker flows, hires, separations and internal mobility, are measured as rates, in which the denominator is the number of workers in the firm at the start of the year. Table 1 presents for both categories of firms the average sizes of these worker flows. It appears that small and large firms have on average equal hire and separation rates. On the other hand, the internal mobility rate increases with firm size. The average internal mobility rate of the large firms is about twice as large as the average rate of the small firms.

For each of the three worker flows the information on the individual workers is used to calculate the fractions of job creation and destruction. Table 2 shows that the various components of hires and separations do not differ between both types of firms. About 35 percent of the hires is for the newly-created jobs. 17 percent of the separations is from the destroyed jobs.

Table 2 also shows that large firms have a higher fraction of internal mobility

between the existing jobs (60 percent against 47 percent for small firms). Or to put it differently, it appears that the fraction of internal mobility in which job turnover is involved decreases with firm size. The fraction of internal mobility from a destroyed job to a newly-created job is for small firms (11 percent) substantially higher than for large firms (6 percent).

I next distinguish the categories "internal mobility between existing jobs," and "internal mobility with job creation or job destruction." Table 3 combines Tables 1 and 2 by calculating the rates of both categories of internal mobility. It shows that large firms have a substantially higher rate of internal mobility for both categories. Internal mobility between existing jobs is 2.9 percent for large firms, against 1.1 percent for small firms. These fractions are significantly different, since the corresponding 95 percent confidence intervals do not overlap. Internal mobility in which job turnover is involved is 2.0 percent for large firms and 1.3 percent for small firms. Again, the fractions are significantly different.

#### **4. Conclusion**

A recently established fact is that large firms have a higher rate of internal mobility of workers than small firms. This note has added evidence that for large firms this rate dominates both for the category "internal mobility between existing jobs" and for the category "internal mobility in which job turnover is involved." It means that firms, if possible, prefer internal mobility to create or destroy jobs, instead of hiring or firing workers at once. Hence, internal mobility can be used to achieve lower adjustment costs. Large firms may benefit from their size to reduce the total costs of job reallocation.

From a macro-perspective, it implies that small firms have a natural disadvantage to adjust to external shocks. Their lack of internal mobility reduces the possibility for cheap employment adjustment. So far, the main macro-economic theoretical models on job turnover have concentrated on net job turnover (Mortensen and Pissarides, 1994, Caballero and Hammour, 1994). These models do not allow for job turnover through internal mobility. The empirical results of this note suggest that it may be worthwhile to incorporate this type of job turnover into these models.

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**Table 1 - Worker turnover versus firm size (L); (annual percentage of employment)<sup>a)</sup>**

	L < 100	L ≥ 100
H	11.7 (0.5)	12.3 (0.6)
S	9.7 (0.3)	10.9 (0.4)
IM	2.4 (0.1)	4.9 (0.4)
$\bar{L}$	48.6 (1.0)	283.5 (17.8)
N	726	432

a) Standard deviations of the means between parenthesis. H is the hire rate, S is the separation rate and IM is the internal mobility rate.  $\bar{L}$  is the average size of the firm. N is the number of firms.

**Table 2 - Job creation and destruction rates for hires, separations and internal mobility versus firm size (L)<sup>a)</sup>**

	L < 100	L ≥ 100
h1	0.64 (0.02)	0.66 (0.02)
h2	0.36 (0.02)	0.34 (0.02)
$N_h$	575	441
s1	0.17 (0.02)	0.17 (0.02)
s2	0.83 (0.02)	0.83 (0.02)
$N_s$	624	420
im1	0.47 (0.03)	0.60 (0.03)
im2	0.15 (0.01)	0.10 (0.02)
im3	0.27 (0.02)	0.24 (0.02)
im4	0.11 (0.01)	0.06 (0.01)
$N_{im}$	272	297
N	726	432

a) Standard deviations of the means between parenthesis. h1 is the fraction of hires for the existing jobs; h2 is the fraction of hires for the newly-created jobs; s1 is the fraction of separations from the destroyed jobs; s2 is the fraction of separations from the existing jobs; im1 is the fraction of internal mobility between the existing jobs; im2 is the fraction of internal mobility from the destroyed to the existing jobs; im3 is the fraction of internal mobility from the existing to the newly-created jobs; im4 is the fraction of internal mobility from the destroyed to the newly created-jobs. N is the number of firms.  $N_h$  is the number of firms with hires,  $N_s$  is the number of firms with separations and  $N_{im}$  is the number of firms with internal mobility.



**Table 3 - Internal mobility and job turnover versus firm size (L): (annual percentage of employment)<sup>a)</sup>**

	L < 100	L ≥ 100
Internal mobility between existing jobs	1.1 (0.1)	2.9 (0.3)
Internal mobility with job creation or job destruction	1.3 (0.1)	2.0 (0.2)
<b>Total internal mobility</b>	<b>2.4 (0.1)</b>	<b>4.9 (0.4)</b>

a) Standard deviations between parenthesis. The standard deviations in the cells are computed by means of the approximation  $\text{Var}(k \cdot \text{IM}) \approx k^2 \cdot \text{Var}(\text{IM}) + \text{IM}^2 \cdot \text{Var}(k)$ , where  $k = \text{iml}$ ,  $1 - \text{iml}$ .