Why are Establishments so Heterogeneous?

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ABSTRACT. Changes in the size of establishments – as opposed to the turnover of workers across a given set of jobs – account for a non-negligible component of gross worker flows. Based on a rich database of establishment-level employment records in western Germany, this paper analyses the magnitude and determinants of job turnover and its relation with labour turnover. Consistently with findings from other countries, it is shown that job turnover is mainly the byproduct of the dispersion of establishment-level outcomes within any industry rather than of job reallocation across different sectors. The role played by disturbances to consumer preferences over differentiated products is also assessed in an attempt to shed some light on the determinants of this tremendous heterogeneity of establishment-level employment changes within each industry.

Introduction

Each year the growth, decline, entry and exit of establishments results in large number of workers changing jobs or switching from employment to non-employment. A salient feature of these establishment-level employment changes is churning, that is, the simultaneous creation and destruction of thousands of jobs. Abstracting from cyclical movements, high rates of gross job creation coexist with high rates of gross job destruction.

The impressive magnitude of gross job turnover has been vividly documented by recent empirical work based on longitudinal data sets of establishments and firms. In all countries for which data are available the sum of gross job creation and destruction accounts for about 20 per cent of total employment, that is, each year about one in five jobs changes. Changes in the size of establishments – rather than the turnover of workers across a given set of jobs – seem therefore to account for a non-negligible component of gross worker flows. Put another way, labour demand factors appear to explain much of the labour turnover.

While several models have been developed which can account for high labour turnover rates, many questions raised by the magnitude and characteristics of job reallocation rates are still looking for satisfactory answers. What lies behind the heterogeneity of establishment-level outcomes? Does it reflect differential sectoral responses to cyclical fluctuations, asymmetric reactions of firms within any sector to industry-wide disturbances or firm-specific shocks? Which role does product differentiation play in job turnover?

The purpose of this paper is twofold. First, it aims at characterising the heterogeneity of establishment-level employment changes and its relation with labour turnover. Second, an assessment is made of the role played by product heterogeneity in the coexistence of high entry, exit, contraction and expansion rates within any industry.

The central empirical findings are as follows:

1) gross worker flows associated with changes in the size of establishments – rather than to the sorting and resorting of jobs across a given set of jobs – account for a significant component of labour turnover;
2) job turnover is mainly the byproduct of the dispersion of establishment-level employment changes within any industry rather than of job reallocation across different sectors;
3) product differentiation tends to increase the dispersion of establishment-level outcomes within any industry, provided that the technological differences across the various products are not too large.

We will first analyse the magnitude of job turnover in relation with aggregate employment growth and labour turnover. The focus will be then on the role played by industry effects in job turnover. Finally, we will investigate the relation...
between product differentiation and the dispersion of growth rates within any industry based on the empirical implications of a model where the heterogeneity of firms is the byproduct of endogenous product choices.

1. Definitions

Let \( x_{it} \) denote the number of employees of any establishment \( i \) at time \( t \). Then total gross job flows associated with establishment-level employment changes (or job turnover) is given by:

\[
JT_t(E) = \frac{\sum_{i \in E} (x_{it+1} - x_{it})}{\sum_{i \in E} x_{it}}
\]

where \( E \) denotes any aggregate (e.g., a sector, a region or a group of plants belonging to the same size cell in the base year) of establishments. Job turnover can be interpreted as a summary measure of the heterogeneity of establishment-level employment changes. In fact, let \( s_{it} \) be the employment share of any individual establishment \( i \) at \( t \) and \( g_{it} \) be its (employment) growth rate between \( t \) and \( t+1 \). Then for all establishments having some positive employment at \( t \), job turnover can also be rewritten as:

\[
JT_t(E) = \frac{\sum_{i \in E} |x_{it+1} - x_{it}|}{\sum_{i \in E} x_{it}}
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\[
JT_t(E) = \frac{\sum_{i \in E} |x_{it+1} - x_{it}|}{\sum_{i \in E} x_{it}}
\]

where \( E^- = \{ x_i \in E | x_{it+1} > x_{it} \} \).

POS\(_t\)(E) = \frac{\sum_{i \in E^+} (x_{it+1} - x_{it})}{\sum_{i \in E} x_{it}}

where \( E^+ = \{ x_i \in E | x_{it+1} > x_{it} \} \).

whereas gross job destruction (NEG), induced by shrinking units and exit processes, is given by:

\[
NEG_t(E) = \frac{\sum_{i \in E^-} (x_{it+1} - x_{it})}{\sum_{i \in E} x_{it}}
\]

where \( E^- = \{ x_i \in E | x_{it} > x_{it+1} \} \).

We can then rewrite job turnover as follows:

\[
JT_t = POS_t + NEG_t
\]

Finally, by subtracting NEG from POS one obtains net job creation or the employment growth rate (NET).

2. Job turnover, aggregate employment growth and labour turnover

Evidence on job turnover in all countries for which data are available is presented in Table I. As data come from a variety of sources (mainly from establishment surveys and administrative records, e.g., social security files), and provide a different coverage of total employment (e.g., in the US they cover only manufacturing employment, while in Germany all private employees), figures are not strictly comparable. Yet, they offer a broad indication of the order of magnitude of job turnover.

From Table I it would appear that job turnover ranges between 15 and 25 per cent, that is, each year about one in five jobs is created or destroyed. Moreover, job turnover is much larger than changes in aggregate employment (reported in the second column of the table). Job turnover in excess of net employment growth (third column) is no less than 14 per cent in all countries for which data are available. In other words, a salient feature of job turnover is the churn, the simultaneous creation and destruction of thousands of jobs.

Insofar as job turnover reflects changes in the allocation of employment opportunities across establishments, it also involves a reallocation of