Matching skills of individuals and firms along the career path

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Motivation

How do workers build careers across firms?

It is well established that firm-specific knowledge increases with firm tenure and that it is lost when employees switch employers (Becker, 1964). The question remains, however, as to what exactly this knowledge is and whether all firm knowledge is specific and, thus, not transferable. The *skill-weights approach* (Lazear, 2009) uses a new method for modeling firm-specific knowledge by letting firms place different emphasis on general skills. The weights generate firm-specific skill portfolios that can be compared to each other. This assumes that a certain amount of all knowledge is transferable across firms.

To date, there has been no investigation of the degree to which firm knowledge is portable across establishments. Specifically, in the case of firm switches, it is not known *(1)* if the distance of a move varies along the career path or *(2)* how it relates to wages. For joint occupational and firm switches, it is unknown whether the loss of occupation- or firm-specific human capital (HC) is more costly for workers.

Conceptual framework

Modeling firm and occupational knowledge

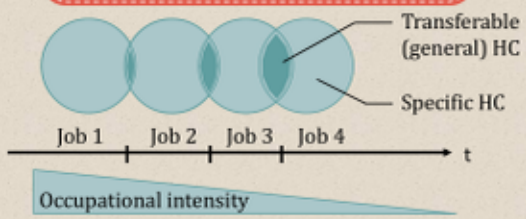
The specificity of knowledge is determined by the relative importance (weights, β) of tasks t (analytical A and manual M) in occupations o and firms f following Lazear (2009) and Gathmann and Schönberg (G&S, 2010).

$$\underbrace{ln\, S_{ifot}}_{\substack{\text{worker } i\text{'s}\\ \text{productivity}\\ \text{at time } t}} = \underbrace{\left[\beta_o t^{A}_{iot} + (1-\beta_o) t^{M}_{iot}\right]}_{\substack{\text{task-specific HC of occupation}\\ ln\, S_{iot}}} + \underbrace{\left[\beta_f t^{A}_{ift} + (1-\beta_f) t^{M}_{ift}\right]}_{\substack{\text{task-specific HC of firm}\\ ln\, S_{ift}}}$$

Similar weights result in a large amount of transferable knowledge.

Different weights increase the distance, i.e., the amount of specific knowledge, and thereby the cost of a switch.

Job sequencing along the career path



Along the career path, the *similarity of jobs should increase* in the case of job switches because distant switches are more costly. At the same time, the *importance of (learning from) peers, occupational intensity, is expected to decrease* because wages increase when the worker's knowledge is more unique.

Data & methodology

A task-based measure for human capital of firms and occupations

Data sources: (1) Sample of Integrated Labour Market Biographies (SIAB), (2) Establishment History Panel (BHP), (3) BIBB/BAuA Employment Survey 2006.

Specific HC: The distance between firms/occupations is calculated using the method of angular separation on the task factors (G&S, Jaffe, 1986). *General HC:* Normalized sum of weighted HC by firm/occupation (G&S).

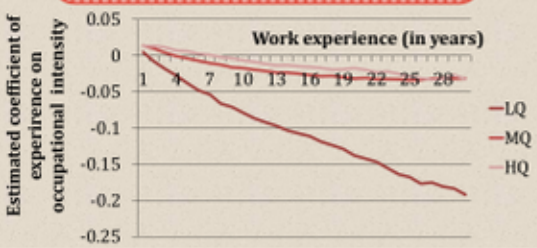
Transferability of firm and occupational knowledge

The coefficients of work experience (see above) are estimated in fixed effect regression with firm distance as dependent variable and control variables, for low (LQ), medium (MQ), and high (HQ) qualification levels.

	LQ	LQ	MQ	MQ	HQ	HQ
PREVIOUS WAGE	0.073	0.194	0.120	0.265	0.118	0.187
FIRM DIST	-0.020	-0.033	-0.026	-0.043	-0.019	-0.023
FIRM DIST*WAGE		-0.019		-0.036		-0.021
OCC DIST	-0.014	-0.047	-0.045	-0.072	-0.028	-0.040
OCC DIST*WAGE		-0.044		-0.054		-0.028

The *relative importance of occupational and firm knowledge differs by qualification levels* (see above, based on OLS wage regressions for joint switchers with control variables, variables significant at 1%-level).

Learning opportunities in firms



The coefficients of work experience (see above) are estimated in fixed effect regression with occupational intensity (number of workers in the same occupational group) as dependent variable and control variables.

Separate OLS regressions confirm a *negative relationship between current wage (log) and occupational intensity.*

Results

References

Becker, Gary S. (1964). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education.* Chicago: University of Chicago Press. | Gathmann, Christina; Schönberg, Uta (2010). How General Is Human Capital? A Task-Based Approach. *Journal of Labor Economics*, 28(1), 1–49. | Jaffe, Adam B. (1986). Technological Opportunity and Spillovers of R&D: Evidence from Firms' Patents, Profits, and Market Value. *American Economic Review*, 76, 984–1001. | Lazear, Edward P. (2009). Firm-Specific Human Capital: A Skill-Weights Approach. *Journal of Political Economy*, 117(5), 914–940.

For further information

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