RESEARCH BRIEF

Productivity Growth and Workers' Job Transitions: Evidence from Censal Microdata

Based on BFI Working Paper 2021-46, "Productivity Growth and Workers' Job Transitions: Evidence from Censal Microdata," by Elias Albagli, Central Bank of Chile; Mario Canales, Central Bank of Chile; Chad Syverson, George C. Tiao Distinguished Service Professor of Economics UChicago's Booth School; Matias Tapia, Central Bank of Chile; Juan Wlasiuk, Central Bank of Chile

KEY TAKEAWAYS

- ✓ Economic theory predicts that resources, including labor, allocate to their most productive use.
- ✓ This suggests that when people leave one company for another, they often move to a more productive firm that, among other benefits, could reward those workers with a higher salary.
- ✓ Such reallocation of labor to more productive uses would also aggregate positively to the whole economy.
- ✓ However, this new research shows that just over half of job changers move to firms with higher productivity rates.

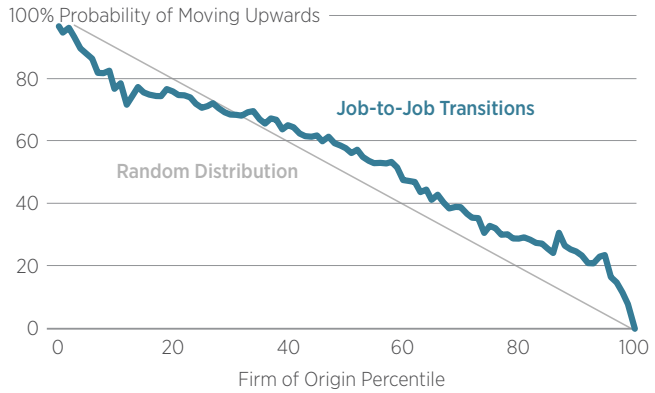
Imagine that you are looking for a new job at a different company, and that you are considering employers that would pay you more money for your skills than you are currently receiving. From an economist's point of view, you are necessarily seeking a job at a firm that is more productive than your current employer. Why? Because if the new company is able to pay more for similar skills, it must make more productive use of those skills, which allows it to share some of those productivity gains with you in the form of a higher salary.

Given this scenario, you might assume that, on average, people move to more productive firms and that the benefits which accrue to the overall economy are positive. You would be right on both counts, as new research by Booth School's Chad Syverson and his colleagues at the Central Bank of Chile reveals, but you would be wrong to assume that the number is high in either case. In "Productivity Growth and Workers' Job Transitions: Evidence from Censal Microdata," the authors

Becker Friedman Institute
FOR ECONOMICS AT UCHICAGO

5757 S. University Ave.
Chicago, IL 60637
Main: 773.702.5599
bfi.uchicago.edu

Figure 1 · Conditional Probability of Moving to a More Productive Firm



Note: This figure plots, for every percentile of the firm productivity distribution, the probability that a given worker transition from an origin firm at that percentile is to a destination firm with a higher productivity level. If worker reallocations were entirely unrelated to productivity differentials (or random), the probability would be given by a negative 45-degree line. For example, a transitioning worker leaving an origin firm at the 25th percentile would have a 75 percent probability of moving to a higher-productivity firm. Source: Authors' calculations based on Chilean SII data.

find that job changes which move up the productivity ladder are only marginally higher (just over 50 percent) than those in the opposite direction.

This rather surprising result raises questions for researchers about why markets do not function as efficiently as economic theory might predict, and also offers challenges for policymakers and others who are concerned about the possible causes of such inefficiencies.

Moving on up … the productivity ladder

This research is premised on two broad facts that apply to most economies: people frequently change employers, and those employers vary greatly in their productivity levels. A host of questions arise from how these facts play out in an economy, and the focus of this paper is on how labor markets respond to those two facts. In particular, the authors investigate the degree to which workers move to higher-productivity companies, which is what economic theory would predict in a well-functioning market economy (similar to the description in the introduction).

Of course, not all workers will move to more productive firms; there are a number of reasons why people may choose a less-productive company, including a disinclination to move or a lack of good information about other firms. However, a large body of economic research suggests that labor tends to move in the "right direction" and that this movement explains aggregate productivity gains.

To examine this idea, the authors employ a matched employer-employee census for Chile between 2005 and 2016 that allows them to track individual workers' job histories at monthly frequency and to compute annual firm-level productivity measures across all economic sectors. Among other reasons, Chile is an ideal subject for study as it ranks highest among OECD countries in terms of labor turnover, with large job creation and destruction rates at the firm level and short employment spells for individual workers, as well as strong indications of sizeable potential productivity gains through employment reallocation.

Taken together, the authors were able to observe how productivity gaps across firms relate to worker flows among them, as well as to quantify the relative contributions of different worker groups to aggregate productivity gains from reallocation. It is important to note that there is a wide dispersion of productivity rates among firms included in this study, as there is among firms in all economies. In other words, moving up the productivity ladder is not just a case of workers going to-and-from firms with similar productivity rates; rather, more productive firms are decidedly more productive, with those at the upper end of the dispersion more than twice as productive as other firms.

The authors' analysis revealed three key findings:

1. The fraction of all job changes that move workers from lower-productivity to higher-productivity firms is only marginally higher than those in the opposite direction. Almost half (49%) of all job changes move workers toward

Table 1 · Decomposition of Average Productivity Gains from Reallocation

	Weighted Average Productivity Gains	Share of Productivity Gains	Share of Job Transitions	Gains-to-Transitions Ratio
Panel A: By Age				
Less than 25	1.46	31%	18.3%	1.69
25-34	2.66	56.7%	35.3%	1.61
35-44	0.7	14.9%	24.8%	0.6
45-54	0.04	0.8%	15.4%	0.05
55 or Older	-0.16	-3.4%	6.2%	-0.55
Total	4.69			
Panel B: By Worker Skill Quintile				
Low Skill	0	0%	15.4%	0
Q2	0.56	12%	24.3%	0.49
Q3	0.98	21%	22.8%	0.92
Q4	1.58	23.6%	21.6%	1.56
High Skill	1.57	33.5%	16%	2.09
Total	4.69			
Panel C: By Gender				
Male	3.25	69.1%	79.3%	0.87
Female	1.45	30.9%	20.7%	1.49
Total	4.69			
Panel D: By Job Tenures (Turnover Propensity)				
Short Tenure	0.59	12.5%	38.1%	0.33
Q2	0.92	19.5%	25.9%	0.75
Q3	1.03	22%	17.8%	1.24
Q4	1.17	24.9%	11.7%	2.13
Long Tenure	0.99	21.1%	6.6%	3.2
Total	4.69			

Note: Productivity measured as log average labor productivity. Weighted average productivity gains are the adjusted average productivity gap in a group's worker transitions weighted by that group's share of total transitions. Source: Authors' calculations based on Chilean SII data.

firms that have lower productivity levels than their prior employer.

2. Those moving to higher productivity firms are more likely moving from one job to another, rather than passing through a non-employment spell. Such on-the-job transitions are also more likely to occur between firms at the high end of the productivity distribution, with up-the-ladder transitions originating from low productivity firms happening less frequently. (See Figure 1.)

3. Younger workers, workers with high skills, and female workers are more likely to move to higher-productivity firms, with young skilled workers providing the plurality of net labor reallocation to higher productivity firms.

    - Nearly half of the economy's worker-reallocation-based productivity gains are associated with the job transitions of workers between 25 and 34 years old, which rises to 80 percent if those under 25 are included.

    - Almost 60 percent of all reallocation gains come from the top two skill quintiles, despite representing only 38 percent of transitions.

    - While female workers account for only 21 percent of job transitions in the economy, they comprise 31 percent of reallocation-based aggregate productivity gains.

    - The net contributions of other large groupings are modest or even negative.

    - Workers with the highest turnover rates contribute proportionally little to aggregate productivity growth. (See Table 1.)

The authors sound a note of caution about what this research can say about the connections between labor market fluidity and aggregate productivity growth. While job movement enables reallocation of resources to more productive firms, many of the observed job transitions apparently have no connection to industry or aggregate productivity growth. On the other hand, there may be a substantial amount of untapped potential for labor reallocations to enhance productivity growth.

> The fraction of all job changes that move workers from lower-productivity to higher-productivity firms is only marginally higher than those in the opposite direction. Almost half (49%) of all job changes move workers toward firms that have lower productivity levels than their prior employer.

Finally, while little comparable work exists in the research literature, the authors describe one study of labor flows and productivity in Denmark's manufacturing sector that measures the share of upward productivity transition at 55 percent.

Conclusion

This research provides a rare glimpse into the important question of whether workers move to more productive firms when they seek new employment, and to what degree the accrued benefits of such resource realignment benefits the economy. Their finding that just over 50 percent of workers who change employers move up the productivity ladder likely comes as a surprise to economists and policymakers who would expect that a well-functioning market economy would do a better job of reallocating labor, at least as measured by productivity.

Instead, this nearly 50-50 finding reinforces what economists and policymakers also know: Economies are complex structures, and the labor market's ability to reallocate workers involves an enormous amount of labor turnover that occurs for a variety of heterogeneous reasons, with a very large share of job transitions not leading to net productivity gains. Given the many reasons why people change jobs and accept new positions, nobody would reasonably expect that 100 percent of job transitions, or anywhere near that number, would involve movements to higher productivity firms. However, a number further north of 50 would seem plausible, if not attainable.

CLOSING TAKEAWAY

Younger workers, workers with high skills, and female workers are more likely to move to higher-productivity firms, with young skilled workers providing the plurality of net labor reallocation to higher productivity firms.

How can policymakers and others move the needle higher? The authors do not offer policy prescriptions, but their demographic findings offer insights into where policymakers might focus attention. For example, up-the-ladder productivity transitions occur frequently among young, high-skill workers, as well as more frequently among women than among men. These heterogenous results, as well as the many frictions that drive worker decision-making—including information channels and moving costs, among many others—offer fruitful questions for further study that may suggest effective policy responses.

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ABOUT OUR SCHOLAR

Chad Syverson
George C. Tiao Distinguished Service Professor, Chicago Booth
chicagobooth.edu/faculty/directory/s/chad-syverson

CHICAGO BOOTH
The University of Chicago Booth School of Business

Written by David Fettig, BFI Senior Writer and Editor