Comment on “An Anatomy of Monopsony: Search Frictions, Amenities, and Concentrated Markets”

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June 21, 2023

Introduction

It is well understood that labor markets are not perfectly competitive. The goal of this paper is to evaluate how different aspects of monopsony power shape the gap between workers’ marginal product and their wage.

The classical notion of a monopsony market is one where one dominant firm faces many workers who seek to sell their labor services to the firm. Labor supply is upward sloping as more workers are willing to work at higher wages. In this market, the dominant firm has power to choose its labor demand and wage, respecting the labor supply curve, to maximize its profit. Compared to a competitive environment, the monopsony demands less labor and offers lower wages, exploiting the supply curve. Because of this inefficiency created by the monopsony, it is important to understand the degree of firms’ market power and potentially propose policies which limit it.

This paper features several deviations from a perfectly competitive labor market. First, search frictions prevent workers and vacancies from matching immediately. Second, workers differ in amenity values they attach to different jobs, allowing firms to offer a lower wage to workers with a high non-monetary value of the given job. Third, bilateral monopoly in wage setting implies that workers and firms bargain over how to split the match surplus. Fourth, only a small number firms operate in a given market. And finally, there is no worker and firm mobility across markets. The first four deviations are referred to as paradigms of monopsony. Hence, the notion of a monopsony is broader here, with some forces not creating inefficiency,

*The views expressed herein are those of the author and not necessarily those of the Federal Reserve Bank of Richmond, or the Federal Reserve System.
but all of them contributing to markdowns, the difference between workers’ marginal product and wage. The no mobility assumption is not treated as a paradigm of a monopsony; rather, it is used to set up the framework for evaluating the other paradigms.

**Model and Its New Element**

The model is based on Cahuc, Postel-Vinay, Robin (2006) with several modifications. Workers in the model are assumed to be ex-ante homogenous and search for jobs in a local labor market with firms of varying levels of productivity. It is assumed that the number of workers and firms in the market is given, and that there is no mobility across markets. Firms decide how many vacancies to post subject to convex vacancy posting costs, after which workers meet them at an exogenous rate. After meeting, the worker draws an amenity value for the match, and the worker and firm decide whether to form a match. The worker and the firm bargain over a piece-rate contract following the bargaining protocol in Cahuc, Postel-Vinay, Robin (2006). The piece-rate contract is not updated until a worker meets another firm.

The novel element of the model is firm granularity, which affects three margins. First, it allows for partially directed search where employed workers cannot meet vacancies posted by their current employer, and firms cannot meet their current employees through the search process. Second, it enables the measurement of market concentration in the model to be based on the objects as in the data. Last, it introduces the concept of firms making their own vacancy posting decisions, which is absent in the benchmark model where the distribution of vacancies is exogenous.

The authors take a shortcut when modelling the vacancy posting decision. Firms understand that the per-vacancy meeting rate depends on the size of the firm; however, they are still acting as if they are atomistic when considering the impact of their actions. A dominant firm in the market does not factor in the effect that its own vacancy posting may have on the vacancy-filling probability of other firms and therefore the outside option of workers and consequently the wages they receive. This shortcut eliminates the classical notion of a monopsony whereby a dominant firm can decrease employment to affect wages.

The most important margin of firm granularity is the partially directed search. Compared to an equilibrium with random search, workers receive fewer outside offers and, mechanically, fewer amenity draws, which translates into fewer opportunities to climb a ladder. Mobility declines. The bargaining protocol implies that the highest wage in the most productive firm is determined by the second-most productive firm a worker can meet. In a random search setup, this would be the most productive firm itself. In the partially directed search setup, workers cannot meet their employers, and hence this is the second most productive firm. The
highest achievable wage is lower, and so the wage distribution is compressed. This result depends on the important assumption that there is no mobility across markets and workers are not able to meet a firm from a different market. However, this effect can be mitigated by introducing another high productivity firm into the market. Past employers are not excluded from search, and hence workers would be able to move between multiple most productive firms, conditional on a good amenity draw, and through that increase their wage, prolonging the ladder again.

**Empirical Analysis and Its Connection to the Model**

The strong assumption of no mobility across markets is a simplifying assumption which allows the model to be solved separately for each isolated market. However, when applying the proposed model to real-world data, a market must be clearly defined such that there are indeed no flows of workers or firms across its boundaries and other market do not serve as outside options. This ensures that the model accurately accounts for the local nature of markets.

In the empirical analysis, a market is defined as a combination of groups of occupations and commuting zones. The geographic division into administrative units is assumed to be a given. However, occupation groups are determined endogenously using an algorithm that maximizes within-market worker flows while at the same time penalizing overfitting that would emerge from putting too many occupations into one group. This endogenous determination of occupation groups is done separately for each commuting zone, and hence occupation groups can vary across geographical locations.

Classifying occupations into groups is useful for several reasons. First, workers change occupations during their careers and hence it would be too restrictive to study each of the occupations in isolation. Second, the classification of occupations varies across occupations in the sense that some occupations include a broad set of jobs, like teachers, while others are rather narrow, like dentists. This might be problematic from the perspective of having a meaningful notion of number of firms across markets, since having market with five firms for a very narrow occupation is better for workers than five firms for a broad occupation. Creating groups of occupations mitigates this problem and helps maintain consistency across markets.

The resulting grouping of occupations is such that 50% of workers who switch an employer do so by moving outside their own labor market. Some of these market switches are due workers changing their occupation group, some of them due to workers moving to a different commuting zone. Commuting zones are typically based on the administrative division of a
country, which might be a relevant geographical boundary for some occupations, but less so for others. Specifically, workers in low-skilled occupations, like cashiers or plumbers, are less likely to move geographically for employment reasons. On the other hand, workers in high-skilled occupations, medical doctors or lawyers, are geographically mobile, and for many of these occupations the entire country is the relevant market. Hence, this definition of a market is more suitable for low-skilled occupations. However, the job ladder model is a better description of the labor market experience for workers in high-skilled occupations as it is unlikely that firms compete for low-skilled workers by bidding up their wages. I view this as a discrepancy between the model and the data.

The goal of the empirical section is to document the relationship between labor market concentration and several labor market statistics, including average wages, unemployment rate, job-to-job transitions, and transitions between employment and unemployment. The authors use the standard market concentration measure, the Herfindahl–Hirschman index (HHI) and regress statistic of interest on HHI, exploring two different dimensions of variation. First, by including the occupation-year fixed effects into the regression, they explore across-region variation. By including occupation-region fixed effects, they explore time-variation in HHI.

The regression exploring across-region variation can be contaminated by spatial sorting. Bigger cities have less concentrated markets, but they also tend to have more productive firms and workers. Sorting between firms and workers has been well documented, for example Borovičková and Shimer (2017) and Bonhomme, Lamadon, and Manresa (2019). Spatial sorting where more productive firms choose bigger cities is explored, for example, in Lindenlaub, Oh, and Peters (2022) or Bilal (2021). Therefore, the correlation between HHI and average wages and other labor market statistics might not be representative of how firms’ monopsony power shapes the labor market, but rather the result of spatial sorting.

To address this concern, the authors explore variation over time in a given market by including occupation-region fixed effects. It remains a question then what drives changes in HHI between different years in a given labor market. More concentrated markets are more likely to experience fluctuations in HHI because they consist of a small number of firms. Furthermore, given the definition of a market, an average firm in a market is comprised of only 6.2 employees. Thus, if only a few workers join or leave a single firm, it can significantly change the firm’s employment share and have a noticeable impact on the HHI. In contrast, in a less concentrated markets with many firms, a similar reallocation of workers will have a negligible effect on the HHI. Therefore, the observed variation in HHI is likely driven by the more concentrated markets, and might not be informative about the less concentrated markets.
These regressions do not control for the distribution of firm productivities in the markets. Such controls would partially address the issue of spatial sorting as now we would be able to see if higher wages are driven by the presence of productive firms or not. This would also bring the regressions closer to measuring markups, the difference between workers’ marginal product and wage, as is the ultimate objective of the analysis. This step requires bringing additional data sources containing value added of firms or sales per worker.

Finally, I want to discuss the question to which extent is HHI a useful statistic in the context of a job ladder model. Consider the following example. The average HHI in Norwegian data is 0.09. This value can be generated in several ways. For example, 11 equally sized firms or 15 firms with employment of 10, 20, \ldots 150 workers. In the model, firm size differences are generated through differences in firm productivities. Consider two markets, one with 11 equally productive firms, and one with 15 firms with productivities $z_1 < z_2 < \ldots z_{15}$. These two markets have very different implications for worker’s career wage profile. In the first market, the wage profile is flat because all firms identical. The second market yields wage profiles representative of a typical job ladder where workers move from worse to better firms over their careers. The average wage in these two markets will also differ. Therefore, HHI is not a sufficient statistic for average wage, let alone for the wage profiles, since these depend on the distribution of firm productivities.

**Conclusion**

This paper investigates the important question of how market structure affects workers’ wages and their transitions between jobs and labor market states. This question is studied through the lens of an extended job ladder model which features firm granularity. The comments above explain that some of the empirical facts might be reflecting spatial sorting of better firms into larger cities, and assortative sorting between firms and workers, rather than the impact of market structure on wages. The model cannot address these concerns as it assumes all workers are ex-ante homogenous and all markets have the same distribution of firm productivities. To move forward with this research question, additional data sources are necessary to discipline differences in firm productivity differences across markets. The average productivity at the market level would not be sufficient, the entire distribution is needed, as the tails play an important role. For deeper understanding of the mechanism, it would be instructive to examine career profiles of workers. Does steepness of the career profile depend on market concentration? Workers might be better off in a market with lower average wage if that market offers steeper wage growth early in the career.

The main finding of the paper is that the key determinant of the average wage in a
market are search frictions and the bargaining protocol between firms and workers. This area of research does not have a data-driven bargaining protocol, making it a fruitful avenue for further exploration. Recent survey data have demonstrated that workers differ in their assessment of future labor market conditions, which, in turn, directly impacts their evaluation of outside options, a crucial element entering any bargaining situation. Several papers, such as Bhandari, Borovička, and Ho (2022) and Menzio (2023), have shown that subjective expectations have a marked effect on firms’ recruitment decisions and labor market flows. Subjective expectations, disciplined by data, seem to be an important path toward improving our understanding of wage setting.
References

Bhandari, Anmol, Jaroslav Borovička, and Paul Ho. 2022. “Survey data and subjective beliefs in business cycle models.” Available at SSRN 2763942.


