

Wage Dispersion and Overqualification as Entailed by Reder Competition

By Ekkehart Schlicht

This paper presents a model of the labor market to account for the simultaneous increase in wage inequality and over-qualification. A standard supply-demand model of the labor market, it is argued, has difficulties in generating both phenomena simultaneously. In such a model, skill-biased technological change could generate increasing wage dispersion by raising the relative demand for high skilled labor. An increase in the relative supply of skills as implied by evidence on increasing over-qualification is difficult to reconcile with this explanation, however, as it would tend to decrease wage dispersion. This paper presents a static model of labor demand that addresses the issue by combining several (realistic) features: heterogeneity of workers, imperfect mobility of labor, and idiosyncratic quality of a worker-job match (termed “skill latitude”), job-specific wages and wage compression (in the sense that firms have to pay the same wage to high or low productive workers on the same job). Firms attract workers by offering a particular wage, and markets clear by firms applying a particular hiring standard in terms of the productivity composition of their workforce. In equilibrium, wages are set optimally and prices are implicitly determined by firms’ hiring standards such that there is no entry of new firms (i.e., a zero-profit condition holds). The main line of argument is that an increase in worker heterogeneity (or skill-biased technological change) increases the supply of skilled workers. As joint consequence of the relative demand and supply effects wages increase, leading to even more education. Also, the effects of changes in mobility and capital costs on the equilibrium are investigated.

Overall, the paper presents an original and interesting model of the labor market. Despite its stylized assumptions, the model deserves merit for organizing thoughts on an interesting, and relevant, issue. However, I am not convinced that the model really achieves its goal in providing a model that generates wage dispersion and over-qualification at the same time. Also, I am not entirely convinced that the model is the right model to think about the issue in the first place. In the following, I will provide a more detailed account of my concerns.

1. The model is set out to explain wage dispersion, but there is no wage dispersion in the model. In fact, by assuming wage compression (page 9) any type of wage dispersion between workers of different productivity within a firm is excluded. Moreover, by considering symmetric equilibria with homogeneous firms, there is a unique market wage W and a unique market price p given by equations (10) and (11). There are only two ways in which the model could be understood to generate wage dispersion. One is by considering the gap between the market wage W and the reservation wage R . But this interpretation does not fit the data presented in section 2 (Figures 1 and 2), which relate to wage dispersion of employed individuals. Neither does it fit the conventional view of wage dispersion. Comparing employed workers with unemployed (that are not modeled) or individuals in home production (another possible interpretation) is not really the appropriate comparison for the issue at hand. Nevertheless, this is the comparison on which the conclusions are based, given the statements about the model being consistent with wage dispersion within industries rather than across industries on page 20. The second interpretation would indeed be to consider the equilibrium as industry equilibrium, and argue that worker heterogeneity changes differently across different industries, hence giving rise to a different “dynamic adjustment pattern”

across industries. But this possibility is never spelled out in the paper, nor modeled explicitly, nor consistent with the facts, as pointed out on page 20.

2. I have some difficulties with how over-qualification is modeled. First, what is the empirical concept of over-qualification that is referred to in section 2 (in particular Figures 3 and 4)? I presume that these numbers are based on subjective statements about the demand for particular skills that were part of an education process. Does this mean that workers are overqualified for their job? And how does this map into the model? In section 9 on page 20, the paper argues that “if more workers train than are needed to fill all vacancies, we have overqualification”. Of course, unemployed workers are over-qualified by definition, but even if this is the interpretation, their incentive to obtain some training should be modeled, since education is by its nature an investment that is forward looking. By not considering unemployment, the model completely neglects the education decisions that individuals make in expectation of their labor market prospects. Hence, also in this sense I find the interpretation of the model problematic.
3. The concept of increasing skill latitude with simultaneously increasing over-qualification is slightly puzzling to me. Essentially, what is needed for the model is just productivity heterogeneity that cannot be controlled for by differential pay (termed latitude and wage compression). But then, if, as seems to be implied by the discussion on page 18, non-routine cognitive tasks have become more important over time (and thus skill latitude), how is this consistent with increasing over-qualification? Does that imply that education and training prepare people worse for their actual jobs? Is there evidence for this? And what does this imply for training incentives?
4. The paper makes a big point out of the “Reder competition” argument, which is essentially captured by frictional labor markets in which firms post wages strategically to attract skilled workers, while markets clear by firms hiring the optimal number of workers to ensure a particular productivity level or, equivalently, skill composition. The model in fact introduces multiple-worker firms, without ever making the hiring threshold, nor the firm’s optimal size or composition explicit. All this is captured by the reduced form composition function given by (2). In this sense, the model does not really consider multiple-worker firms with declining marginal productivity or profitability. Nor does it make explicit how Reder competition actually materializes. At least, I would have expected that firms set an explicit hiring standard, and an investigation how this hiring standard (or the firms’ skill composition, or the firm size distribution, or some other directly related parameter) changes with heterogeneity and over-qualification in the market.
5. The paper addresses an inherently dynamic question with a static model of the labor market. Moreover, conceptually the model only considers firms behavior and market clearing, treating workers as completely passive. In this sense, the model is not an equilibrium model, but rather a partial equilibrium exercise. Nevertheless, the main arguments, in particular the changes in the education and training structure suggested in section 7 (page 19) and section 9 (page 20) are based on pure speculation. Of course, the arguments make sense, but the argumentation becomes very loose. While it is not always necessary to build overly complicated models to make a point, I think that the issue at stake here would benefit from a more full-fledged analysis that takes dynamic aspects and labor supply explicitly into account.

6. On a related note, the model requires either unemployment or job separation in equilibrium, since only then there are workers that firms can attract. Yet, even though the model is in the spirit of an efficiency wage model (see also page 14), there is no investigation of this issue. I think this is one of the biggest drawbacks of the paper, because the consideration of over-qualification and inequality without simultaneously considering the skill composition of the employed and unemployed workforce falls short of a truly holistic view of the issue.
7. The discussion about the consequences of increased mobility in section 10 is confusing. On the one hand, mobility is really only modeled as the elasticity of a firm's skill composition with respect to the wages offered by that firm. As argued previously, this partial equilibrium view is overly simplistic, and leaves open where the attracted workers come from: from the unemployment pool or from other firms (in which case a turnover component would have to be incorporated in the firm's profit function). On the other hand, the result that wages increase is model specific, and has potentially further implications that are neglected. For example, higher prices and profits trigger market entry, which reduces unemployment, and deteriorates average productivity. Moreover, the parametric restriction on mobility that ensures stability of the equilibrium (see footnote 1 on page 11) makes the reduced-form approach to treating mobility as parameter even more restrictive.
8. In order to be convincing, other model predictions concerning, e.g., unemployment, profits, average productivity etc., should be in line with the data, too. But the model remains silent on the comparative static results concerning these variables (partly, because they are not explicitly modeled).

Minor points:

- Figures 1 and 2 refer to different measures of wage dispersion, it would be nice to have one consistent measure, such as the 90-10-differential.
- Page 6 last line: "to poorer"
- Page 7 last paragraph: "In order to fix ideas"
- Page 8 just before section 4: "..., and then take wages as given"
- Page 12 second line: "revenues", not "receipts"
- Page 13 first line: "only for wage levels"
- Page 17, first sentence of section 6: "... mediocre workers increases while average ..."
- Page 21 last line: "This shifts the zero-profit line (6) up (not down)...."