

**Firm Size Distortions and
Productivity**

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The figures in this paper are **eye-opening**.

They provide rather conclusive evidence of abrupt changes in distributions of various economic magnitudes when plotted against employment size occurring around an employment cut-off of 50 (where the EPL kicks in). The variables they focus on are the

- size distribution of firms,
- productivity.

However towards the end of the paper we also see rather abrupt changes in

- hours per employee (these increase just before 50)

- capital labor ratio (here most of the increase is just after 50)
- skilled worker distributions (more just before 50)
- outsourcing

The qualitative data analysis both convincing and carefully done (at least vis a vis the major variables is carefully).

So, at least in my view, the paper establishes that the EPL is changing firm behavior.

The paper also attempts to quantify the costs of this legislation. Indeed their conclusion focuses on the question

How costly is labor market regulation?

They analyze this through a model which both allows them to

- estimate parameters that the model indicates are needed to evaluate the impact of the legislation, and
- to evaluate counterfactuals; in particular they want to compare the extant allocation of labor and the resultant output to a counterfactual situations where there were no such regulation.

There is a disconnect between the model used, and the discussion of the mechanisms underlying the likely effects of the regulations.

- The model is static.
- It assumes that the cost of the EPL can be captured by a tax on the wage rate.
- As a result only firms within a given size band will be affected by the legislation (essentially firms whose marginal productivity, at $n=50$, is between the upper and lower implicit wage rates).
- In going to data they smooth out the discontinuity by allowing for measurement error.

In contrast the institutional discussion focuses on the fact that

“Firms with more than 50 employees must have a social plan before laying off more than 10 employees.”

and then go on to discuss features of the required plan.

- The plan is costly, but the cost is not a wage cost: it is a cost of changing employment levels.
- The model assumes a firm is endowed with a productivity which does not change over time, and this and the wage rate, determine its labor employment.

- So there are no differences in firm's productivity over time that management might think about needing to adjust to.
- I.e. none of the firms in this model all firms know that they will never be subject to a cost of the EPL.

Of course there is an element of truth in the model. There is an intuitive relationship between the model and the clearly illustrated facts in the data.

- If all firms are subject to productivity shocks with approximately the same distribution, then the firms that have over 50 employees will be more likely to have to adjust labor in a downward direction after a negative productivity shock.

- Firm's below 50 will not
- However firm's above 50 will also (regardless of how large they are)

This makes the calculations of the cost of the shock problematic. In particular, though

- there is no direct evidence on the time series properties of productivity.
- what little we see about the productivity distribution indicates that the biggest cost of the EPL may be a result of changed allocations by very large firms, not firms in the band generated by their data.
- There are two pictures of the cross sectional distribution of productivity conditional

on size, and here we see that the variance in productivity conditional on size grows noticeably with size.

- If I were to assume that the variance conditional on size is an indicator for the variance in growth rates around that size (and in a dynamic model they are likely to be closely related), then these pictures would convince us that most of the cost of the EPL is through suboptimal allocations of factors among large firms.

- We have to be careful in going from intuitive relationships to measures of policy impacts.
- Working out policy implications requires counterfactuals, and hence a model, but the model has to fit accord with the institutional detail.
- In this case, the EPL effects responses to changes in productivities, not levels.
- So we would need either a dynamic model, or a model that can allow us to measure the impact of dynamic forces, to measure its costs

There are a number of ways to proceed.

- One could write down an explicit single agent dynamic model and introduce an extra cost of adjustment for large downward movement in labor. Single agent dynamic models are, by now, fairly easy to work with, so if you had panel data, this would be an attractive route. Of course you would not get equilibrium wage responses, but by now I hope our colleagues in labor know something about the elasticity of supply that would help.
- A less ambitious is simply to look at the difference between factor marginal products and wage or rental rates, and ask what would happen if we could narrow those gaps. Of course the relationship of those gaps to the EPL would require a structural model.

However there there would be some additional intuitive reduced form objects to look at; for example industries with higher variance of productivity shocks, should probably have a bigger gap; and a much sharper discontinuity around 50.

Finally a couple of more detailed questions/comments about the analysis done here.

- You estimate σ, T, β, n_u (the variance of the measurement error, a function of the implicit tax on hiring, parameter of the distribution of productivity, and the point on the size distribution at which we go back to competitive allocations). Shouldn't the n_u be fixed in terms of the other parameters of the model. That should set θ ; the returns to scale parameter in the production function. So I did not know why you

needed extra data for this. (though there is the testing issue)

- Relatedly, I have seldom seen a returns to scale estimate as low as .8; is that usual for this type of data?
- On the efficiency calculation; I did not know why after I have estimates of the productivity distribution, I could not simply do the allocation of labor across firms that would come from an efficient calculation and then compare it to the extant distribution to find out welfare effects.
- I found the discussion at the end of the paper intriguing. You have made it clear that there are other margins of adjustment that firms are using. A further investigation of

this might help us understand properties of factor demands, and this would be helpful for all sorts of problems.

- Some additional empirical facts would help the reader
 - It would have been nice to know if the variance in measurement error was a large or small part of the total variance in labor.
 - As noted above some reduced form data on the variance in productivity over time, and how it varies with size and other dimensions of the data (e.g. industry), would have been extremely useful.

I think my comments imply is that there is a lot left to do. What the authors have done is convinced us that it is worth doing, and that is worth alot.