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Fields of Concentration:
Macroeconomics
Applied Econometrics

Desired Teaching: Macroeconomics

Comprehensive Examinations Completed:
May 2005 (Oral) Macroeconomics and Mathematical Economics (with distinction)
May 2004 (Written) Macroeconomics and Microeconomics

Dissertation Title: S*orting in the Labor Market: Theory and Measurement*

Committee:
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Professor Fabian Lange
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Expected Completion Date: May 2009

Degrees:
Ph.D.,Economics,Yale University, (expected May 2009)
M.Phil., Economics, Yale University, December 2006
M.A., Economics, Yale University, May 2005
B.A., Economics, Pontificia Universidade Catolica do Rio de Janeiro, December 2002
Exchange Student, University of California, Los Angeles, 2001-2002

Fellowships, Honors and Awards:
Robert M. Leylan Fellowship, Yale University, 2007-2008
John F. Enders Fund Award, Yale University, 2007
Carl Arvid Anderson Prize, Cowles Foundation, Yale University, 2006
Annual Cowles Prize, Cowles Foundation, Yale University, 2005
Yale University Summer Fellowship, 2004-2006
Cowles Foundation Graduate Student Fellowship, Yale University, 2003-2007

Department of Economics Prize, Yale University, 2003-2007
Graduate School of Arts and Sciences Fellowship, Yale University, 2003-2007
Undergraduate Fellowship, Pontificia Universidade Catolica do Rio de Janeiro, 1999-2002

Teaching Experience:

As a Teaching Assistant:
Intermediate Macroeconomics, Yale University, 2009
Introductory Macroeconomics, Yale University, 2008
Department of Economics Math Camp, Yale University, 2006
Graduate Macroeconomics (1st year Ph.D.), Yale University, 2006
Financial Theory, Yale University, 2005

Papers:

"Sorting in the Labor Market: Theory and Measurement", 2008 (Job Market Paper)

"The Implications of Search Models for Wage Dynamics: an Empirical Assessment", 2007

"Wage Dynamics and Distribution in an Equilibrium Search Model", 2006

Book Chapter (in Portuguese)
"Emparelhamento no Mercado de Trabalho Brasileiro: Evidência e uma Explicação", forthcoming 2009, in Estado de uma Nação, IPEA-Brasília.

Conference/Workshop Presentations:

Structural Models of the Labor Market and Policy Analysis Conference, Institute for Fiscal Studies, London, November 6-8, 2008
Junior Market Prospectus Workshop, Yale University, Department of Economics, October 30, 2008
Search and Matching Workshop, University of Pennsylvania, Department of Economics, October 4, 2008
Society for Economic Dynamics Annual Meeting, Cambridge, MA, July 10-12, 2008
PUC Rio de Janeiro, Department of Economics, August 7, 2008
IPEA Rio de Janeiro, May 18, 2007 and August 6, 2008
La Pietra-Mondragone Workshop in Economics, Florence, Italy, July 2007

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References:

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Dissertation Abstract:

Are more skilled workers employed by more productive firms? Are complementarities important in production? I analyze the assortative matchup between heterogeneous firms and workers in the labor market. Sorting patterns are important for two reasons: inefficiency and inequality. First, if there are complementarities in production, the equilibrium allocation assigns the most skilled workers to the most productive firms, and vice-versa. If frictions perturb this assignment, the economy operates suboptimally. In this case, second, sorting can work as a mechanism to increase inequality and decrease mobility: the most skilled workers earn more because they are more skilled and also because they work for the most productive firms. In such an economy, low skilled workers have limited opportunities for career progress, since the top firms will not hire them. In this type of environment, policies, such as unemployment insurance, can play a big role, as they can be used to induce workers to look for the "right job".

In the first chapter, I provide four contributions to the measurement of sorting. First, I introduce a frictional sorting model to show that the standard empirical method used to measure sorting in the labor market can be biased in favor of not detecting sorting. My second contribution is to isolate the economic mechanism responsible for this bias. Thirdly, I propose an alternative method to detect sorting that is immune from this bias. Finally, I apply both methods to a novel Brazilian matched employer-employee dataset, RAIS. I confirm the absence of sorting when using the first method, whereas the second reveals strong sorting, which, according to the model, suggests that sorting is widespread in the labor market and complementarities are important in production.

In the remaining chapters, I investigate the dynamic relationship between wages and turnover in the equilibrium of frictional economies. In the second chapter, I evaluate the ability of several models in the job-search literature to explain a robust and pervasive fact that I document from SIPP data: real wage cuts upon job-to-job transitions are more frequent that for those remaining in one job. The results suggest that, highly educated workers accept wage cuts in exchange for better prospects on the new job, while for low-educated these cuts reflect preemptive quits. In the third chapter, I structurally estimate a model of match-specific learning, using data from the NLSY-79, in order to jointly explain the dynamics and inequality of wages.

I – Sorting in the Labor Market: Theory and Measurement (Job Market Paper)

Are more skilled workers employed in more productive firms? The standard empirical methodology to answer this question is based on the estimation of a wage regression with firm and worker fixed effects, which are used as proxies for the unobserved heterogeneities of workers and firms. In this methodology, the natural measure of sorting in the labor market is the correlation between these fixed effects. A surprising and remarkably robust result is that this correlation was found to be zero (or even negative) in several countries, suggesting the absence of sorting. To shed new light on the question of labor market sorting, I offer four contributions to the literature.

First, I show that the standard methodology may be biased in favor of no sorting. More specifically, I use an equilibrium model of the labor market with heterogeneous workers and firms that exhibits positive sorting in equilibrium, because of the presence of complementarities in production. The model is enriched with search frictions and on-the-job search in order to make it more realistic and comparable to the data. Despite the presence of strong sorting in the model's equilibrium, for some parameterizations, the standard estimator applied to simulated data suggests, once again, no sorting, just like in the empirical data. My second contribution is to identify the source of this bias in the non-linearity in the wage equation caused by the interaction of wage bargaining with limited capacity of the firms to post new vacancies. In my model, high productivity firms have better outside options than their low-productivity counterparts, which causes downward pressure on the wages of their workers. This is particularly relevant for low-skilled workers, who can be paid less by the more productive of two firms. All this suggests that the firm wage fixed effects are not good proxies for the firms productivities. I introduce endogenous and increasingly costly vacancy creation in order to further justify the main economic mechanism behind my result.

Thirdly, I propose a new empirical method to detect sorting that is immune from this bias: the correlation between a worker's wage fixed effect and the average fixed effects of the co-workers at the same firm. In the model, high-skilled workers work for the high-productivity firms, and as a consequence they work with other high-skill workers. The idea is to use this correlation as a measure of sorting across co-workers. I find that this method correctly detects sorting in the simulated data from the model. Finally, I apply both methods to a novel matched employer-employee dataset from Brazil, RAIS. This is an administrative dataset that follows all workers and firms in the Brazil formal sector for over 10 years. I confirm the absence of sorting when using the first method, but the second method reveals strong sorting. According to the model, these two apparently contradictory empirical findings suggest that sorting is widespread in the labor market, and complementarities are important in production.

II - The Implications of Search Models for Wage Dynamics: an Empirical Assessment

Job-search theory has been used successfully to explain cross-sectional patterns of wages and mobility patterns of workers. This paper confronts central implications of these models with a robust and pervasive fact, that I document from SIPP data: real wage cuts observed upon job-to-job transitions (JJT) are more frequent than for those remaining in one job.

I provide two tests for the workhorse model of the related literature, the wage-ladder model. Both tests are free of parametric assumptions. The premise of this model is that workers switch jobs only for better wages, which implies that observed wage cuts reflect either measurement error or fluctuations in general human capital. The rejection is a consequence of the absence of real wage cuts upon JJT. Measurement error does not solve the problem because it is essentially independent of specific employers, whereas in the data there are many more wage cuts upon JJT than on the jobs.

I investigate the issue further by examining the subsequent wage performance of workers after they accept wage cuts upon JJTs. I find that for the highly educated the subsequent wage growth surpasses the initial wage cut, suggesting that these workers accepted a wage cut in exchange for better career prospects, consistent with the models of Postel-Vinay and Robin [02] and Burdett and Coles [06]. This does not hold true, however, for the workers with lower education. Their wage loss upon a JJT is quite permanent, suggesting that these workers were subject to bad shocks.

III - Wage Dynamics and Distribution in an Equilibrium Search Model

Many empirical exercises using equilibrium search models based their estimates solely on cross-sectional wage dispersion. One important dimension of the data that was often neglected, but that is central to the logic of these models, is that of wage dynamics. In this chapter, I study a model that has features to explain the dynamics of wages within jobs. I estimate the parsimonious equilibrium search model of Moscarini [05], which has as the main feature learning about a productivity parameter. To estimate the model, I use a cross-section of wages and information on employment duration from the NLSY-79 dataset. The model performs well both at fitting the wage distribution and at fitting the dynamics of wage, even though the wage dynamics were not used in the estimation. This opens the case for match-specific heterogeneity, and more specifically learning, to be an important component in the determination of wages.