



Labor demand research: Toward a better match between better theory and better data



John T. Addison ^{a,b}, Pedro Portugal ^{c,*}, José Varejão ^{d,1}

^a Department of Economics, Moore School of Business, University of South Carolina, United States

^b Department of Economics and Finance, Durham University Business School, United Kingdom

^c Banco de Portugal, Faculdade de Economia Universidade Nova de Lisboa, Portugal

^d Faculdade de Economia da Universidade do Porto, CEF.UP, Portugal

ARTICLE INFO

Article history:

Received 17 January 2014

Received in revised form 16 April 2014

Accepted 23 April 2014

Available online 18 June 2014

JEL codes:

J23

J3

J4

J5

D4

F66

Keywords:

Labor demand

Input heterogeneity

Labor adjustment costs

Wage and employment determination

Multiple fixed effects

Establishment-level functions

ABSTRACT

At first blush, most advances in labor demand were achieved by the late 1980s. Since then progress might appear to have stalled. We argue to the contrary that significant progress has been made in understanding labor market frictions and imperfections, and in modeling search behavior and heterogeneous preferences. Perhaps most notable have been the improvements in data, in the form of longitudinal matched employer–employee data, and in techniques and algorithms (e.g. for solving heterogeneous parameter models). In short, the Cinderella status of the field is frankly overdrawn. Nevertheless, a chief lacuna remains the need for a better match between theory and data. This paper provides a critical albeit eclectic assessment of these developments, along the dimensions of the static and dynamic theory of labor demand, wage formation, and estimation, noting advances and limitations. As is conventional, somewhat greater emphasis is placed on the latter.

© 2014 Elsevier B.V. All rights reserved.

1. Introduction

For the general reader, research on labor demand may seem to have progressed little in the past 25 years especially when compared with other areas of research within labor economics. Thus, the static theory of labor demand has long been established; reliable estimates of the most relevant parameters have long been available; and the essential features of labor adjustment and the underlying micro-mechanisms were identified in the late 1980s. Yet we shall argue that significant progress has nonetheless been achieved in this research area.

On the theoretical front, the most important developments have stemmed from the recognition of the labor market frictions stemming from union presence and intervention, together with other imperfections

that impart positive slope to the labor supply curve. To this mix one would need to add search frictions and heterogeneous preferences.

Furthermore, the importance of good data – especially longitudinal matched employer–employee data – to progress in labor demand studies cannot be overemphasized. In fact, benefiting from increasingly detailed data, most of the progress achieved in the recent years has come from empirical studies that have allowed for a finer characterization of the labor input and renewed interest in the study of interrelated factor demand, the interaction between the labor and product markets, and a richer description of the dynamics of labor demand.

Significant progress on the empirical front has involved new methods applied to better data, thereby advancing our knowledge of labor demand and our ability to predict the effects of policies that impact wages and employment. These new approaches include IV methods combined with panel data, quasi-experimental methods and other micro-evaluation techniques for policy interventions, and high-dimensional fixed-effects models or heterogeneous-parameter models. All became common practice in labor demand research.

* Corresponding author at: Banco de Portugal, Av. Almirante Reis, 71, 1150-165 Lisboa, Portugal.

E-mail address: pportugal@bportugal.pt (P. Portugal).

¹ José Varejão acknowledges funding from Fundação para a Ciência e Tecnologia in the framework of the project PEst-OE/EGE/UI4105/2014.

In this article we provide a critical assessment of the major developments achieved in the past quarter-century and identify the most promising such developments, those that we consider to be most likely to ensure the vitality of labor demand research in the years ahead. The article is organized as follows. Section 2 reviews the results achieved by the empirical literature on the statics and the dynamics of labor demand. Section 3 reviews progress in the studies of wages and employment determination. Section 4 discusses empirical methods and corresponding estimation issues. Section 5 concludes.

2. The theory of labor demand

2.1. The static theory of labor demand

In its standard form, static labor demand theory focuses on employers' decisions regarding the quantity of labor to be used in production and on how these desired quantities change in response to marginal changes in product demand and factor prices. It is essentially a branch of production theory, especially concerned with studying the transmission mechanism running from shocks to the product market and to the prices set in input markets to employment and wages, the structure of production being an essential component of the transmission mechanism. Labor demand is typically described as a derived demand even if occasionally we are reminded of the specific nature of the labor input. Unsurprisingly, most progress achieved in this domain simply mirrors progress made in production theory.

In its simplest version, the starting point of labor demand theory is a representative profit maximizing (cost minimizing) firm that is able to adjust the quantity of the labor input used in production at no cost. In the general case of n -inputs, and allowing all quantities to vary (long-run analysis), conditional and unconditional demand functions are derived by solving the firm optimization problem which requires the specification of the production function, assumed to be strictly increasing and strictly concave. From the labor demand curve the parameters of interest – labor demand elasticity and the elasticities of substitution between different inputs (including different types of labor) – are derived.

Studies of static labor demand have produced a substantial amount of knowledge that is now instrumental for predicting the effects of policies that can alter wage and employment outcomes, because they change either the relative prices of the inputs (P-policies) or their quantities (Q-policies).² Differently put, not only static labor demand studies are important per se, but also because they are an essential component of the policy advisor's toolkit.

Given the close ties with production theory, it is not surprising that most theoretical developments in static labor demand theory stem from production studies. These have contributed with increasingly complex and flexible representations of the production technology, evolving from the standard Cobb–Douglas production function, through CES, to generalized Leontief or translog functions, all of which have been used to derive labor demand equations readily usable in empirical work.

But important as these developments may have been, the truth is that they have added little to our knowledge of labor demand, with most estimates of the elasticity of labor demand falling within the interval 0.4–0.6 independently of the functional form adopted. Similar estimates were obtained with non-structural specifications of the labor demand equation.³

Increasingly available micro (firm-level) data have however made it possible to incorporate labor heterogeneity into the study of labor demand. By allowing for labor heterogeneity along occupational (notably, skilled versus non-skilled labor) and nationality (immigrants versus natives) lines, the empirical literature was able to produce evidence on the substitutability between skilled and non-skilled workers and between native and immigrant workers, thereby shedding light on some of the most researched theoretical and policy topics (respectively, skill-biased technological change and the debate over immigration policy) in the recent years.

It is now widely accepted that technology change is the motive force behind the increasing demand for skilled workers. Nevertheless, Hamermesh (1993a, p.113) cautions on the basis of his extended review of the literature that “there may be” capital-skill complementarity and argues for the need to produce estimates of the parameters of interest based on data that allow for the effective disaggregation of labor into meaningful groups (avoiding in particular the overlapping of relevant skills across groups), as well as appropriate measures of the capital input.

Arguably, the most significant progress in tying labor demand shifts to technology change has been achieved by Autor et al. (2008) and Autor and Dorn (2009). In their re-evaluation of alternative explanations for changes in wage inequality, Autor et al. (2008) find that computerization sharply changed the mix of job tasks in production, increasing the demand for cognitive and interpersonal skills (required to perform *abstract tasks*), reducing the demand for routine analytical and mechanical skills (used in *routine tasks*), while having little direct impact on the demand for nonroutine manual skills (used in *manual tasks*). These results call for a richer version of the skill-biased technical change hypothesis in which new technologies and highly-skilled (highly-educated) workers are complements for one another but substitutes for moderately-skilled (moderately-educated) workers, and have no significant relationship to low-skilled work. For their part, Autor and Dorn (2009) offer an integrated explanation for the polarization of employment and wages and, testing for it with a spatial general equilibrium model, confirm its predictions with U.S. data. From a labor demand perspective, these results are remarkably consistent with Hamermesh's above-mentioned call for more meaningful disaggregation of the labor input, the implication being that the simple skilled versus non-skilled distinction may be too broad. The same implication also applies to capital, as hinted at by Bergström and Panas (1992) who find that the estimates of total factor productivity are sensitive to the choice of the disaggregation of inputs. Progress along this dimension has yet to be achieved.

The intensification of migration flows in the recent years has renewed the debate over the labor market consequences of immigration, that is, on how immigrants affect the economic opportunities of natives, their employment and their wages. The elasticity of substitution between the immigrants and the native-born population is a critical parameter of interest here, not only for the study of the effects of inflows of migrants on native employment but also in the case of comparable migrant and native groups on the wages of the latter. Although early studies of these topics adopted a structural approach (Grossman, 1982; Borjas, 1987), specifying a production function of some form (translog or generalized Leontief), to derive labor demand equations from which the elasticities of interest were obtained and estimated, this approach was soon to be displaced by the increasingly popular spatial correlation approach. Although by no means unanimous in its findings, a fair reading of this literature indicates a small mostly negative effect of immigration on the employment and wages of native-born workers. Key methodological issues in this regard include the failure to account for natives' outmigration from receiving areas, local demand shocks, and long-run effects of intercity trade (Card, 2001). Progress in this area is likely to be achieved in the near future by a return to structural approaches such as the one adopted by Ottaviano and Peri (2012). In a production function framework, these

² For a workable typology of static demand policies that includes P and Q-type policies, see Hamermesh (1993a), chapter 5.

³ The mean estimate of the labor demand elasticity in Lichter's et al. (2014) sample of 105 different studies is 0.508. These authors conclude from the meta-regression analysis they conduct that the elasticity of labor demand is bracketed by the interval [0.072, 0.446] with their preferred estimate being equal to 0.246, close to Hamermesh (1993a) 'best guess' of 0.3. Admittedly, the '3 for 10' rule underestimates the employment response to an increase in labor costs that is likely much bigger if capital is allowed to substitute for labor (Hamermesh, 2014).

Download English Version:

<https://daneshyari.com/en/article/972341>

Download Persian Version:

<https://daneshyari.com/article/972341>

[Daneshyari.com](https://daneshyari.com)