Journal of Development Economics 101 (2013) 92–104

Contents lists available at SciVerse ScienceDirect

Journal of Development Economics

journal homepage: www.elsevier.com/locate/devec

Effective labor regulation and microeconomic flexibility☆

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ARTICLE INFO

Article history:
Received 13 July 2010
Received in revised form 19 March 2012
Accepted 31 August 2012

JEL classification:
E24
J23
J63
J64
K00

Keywords:
Microeconomic rigidities
Creative-destruction
Job security regulation
Adjustment costs
Rule of law

ABSTRACT

Microeconomic flexibility is at the core of economic growth in modern market economies because it facilitates the process of creative-destruction. The main reason why this process is not infinitely fast, is the presence of adjustment costs, some of them technological, others institutional. Chief among the latter is labor market regulation. While few economists object to the hypothesis that labor market regulation hinders the process of creative-destruction, its empirical support is limited. In this paper we revisit this hypothesis, using a new sectoral panel for 60 countries and a methodology suitable for such a panel. We find that job security regulation clearly hampers the creative-destruction process, especially in countries where regulations are likely to be enforced. Moving from the 20th to the 80th percentile in job security, in countries with strong rule of law, cuts the annual speed of adjustment to shocks by a third while shaving off about 1% from annual productivity growth. The same movement has negligible effects in countries with weak rule of law.

1. Introduction

Microeconomic flexibility, by facilitating the ongoing process of creative-destruction, is at the core of economic growth in modern market economies. This basic idea has been with economists for centuries, was brought to the fore by Schumpeter more than fifty years ago, and has recently been quantified in a wide variety of contexts. [1] In US manufacturing, for example, more than half of aggregate productivity growth can be directly linked to this process. [2]

The main obstacle faced by microeconomic flexibility is adjustment costs. Some of these costs are purely technological, others are institutional. Chief among the latter is labor market regulation, in particular job security provisions. The literature on the impact of labor market regulation on the many different economic, political and sociological variables associated to labor markets and their participants is extensive and contentious. However, the proposition that job security provisions reduce restructuring is a point of agreement.

Despite this consensus, the empirical evidence supporting the negative impact of labor market regulation on microeconomic flexibility has been scant at best. This is not too surprising, as the obstacles to empirical success are legions, including poor measurement of restructuring activity and labor market institution variables, both within a country and more so across countries. [3] In this paper we make a new attempt. We develop a methodology that allows us to bring together the extensive new data set on labor market regulation constructed by Botero et al. (2004) with comparable cross-country cross-sectoral data on employment and output from the UNIDO

☆ We thank Joseph Altonji, John Haltiwanger, Michael Keane, Norman Loayza, the editor and two anonymous referees for helpful comments. Caballero and Engel thank the NSF for financial support.

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[1] See, e.g., the review in Caballero and Hammour (2000).

[2] See, e.g., Foster et al. (1998).

[3] On a closely related literature, there is an extensive body of empirical work, pioneered by Lazear (1990), that has put together data on job security provisions across countries and over time, and measured the effect of these provisions on aggregate employment. A recent survey of this literature can be found in Heckman and Pagés (2003). Results are mixed. On the one hand, Lazear (1990), Grubb and Wells (1993), Nickell (1997) and Heckman and Pages (2000) find a negative relationship between job security and employment levels. On the other hand Garibaldi and Mauro (1999), OECD (1999), queryAddison et al. (2000), and Freeman (2001) fail to find evidence of such a relationship.

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http://dx.doi.org/10.1016/j.jdeveco.2012.08.009

(2002) data-set. We also emphasize the key distinction between *effective* and official labor market regulation.

The methodology builds on the simple partial-adjustment idea that larger adjustment costs are reflected in slower employment adjustment to shocks. [4] The accumulation of limited adjustment to these shocks builds a wedge between frictionless and actual employment, which is the main right hand side variable in this approach. We propose a new way of estimating this wedge, which allows us to pool data on labor market legislation with comparable employment and output data for a broad range of countries. As a result, we are able to enlarge the effective sample to 60 economies, more than double the country coverage of previous studies in this literature. [5] Our attempt to measure *effective* labor regulation interacts existing measures of job security provision with measures of rule of law and government efficiency. [6]

Our results are clear and robust: countries with less effective job security legislation adjust more quickly to imbalances between frictionless and actual employment. In countries with strong rule of law, moving from the 20th to the 80th percentile of job security lowers the speed of adjustment to shocks by 35% which amounts to a cut in annual productivity of 0.85% in an *AK*-type world. The same movement for countries with low rule of law only reduces the speed of adjustment by approximately 1% and productivity growth by 0.02%.

The paper proceeds as follows. Section 2 presents the methodology and describes the new data set. Section 3 discusses the main results and explores their robustness. Section 4 gauges the impact of effective labor protection on productivity growth. Section 5 concludes and is followed by various appendices.

2. Methodology and data

Our methodology is based on an adjustment cost model where the dynamic employment gap is given by a simple expression involving employment and nominal output, both of which are available in the sectoral panel for the 60 countries we use in the empirical part.

2.1. Methodology

The starting point is a partial adjustment framework where the change in the number of (filled) jobs in sector j in country c between time $t-1$ and t is a fraction of the gap between desired and actual employment. That is:

$$\Delta e_{jct} = \psi_{jct}\left(e^{*}_{jct} - e_{jc,t-1}\right), \tag{1}$$

where e and e^{*} denote the logarithm of employment and desired employment, respectively.

Eq. (1) can be rationalized via quadratic adjustment costs (Sargent, 1978), or an exogenous process where the ψ_{jct} is either zero or one (Calvo, 1983), or a stochastic adjustment cost model that nests the preceding models as particular cases (Caballero, Engel and Micco, 2004). For simplicity we consider the Calvo interpretation. We therefore assume that the ψ_{jct} is i.i.d., both across sectors and over time, taking values 0 or 1, with a country-specific mean λ_c. Since these stochastic adjustment speeds can be viewed as resulting from adjustment costs that are either zero (with probability λ_c) or infinite (with probability $1-\lambda_c$) we refer to these frictions as "adjustment costs". The parameter λ_c captures microeconomic flexibility. As λ_c goes to one, all gaps are closed quickly and microeconomic flexibility is maximum. As λ_c decreases, microeconomic flexibility declines.

Eq. (1) hints at two important components of our methodology: We need a measure of the employment gap and a strategy to estimate the country-specific speeds of adjustment (the λ_c). We describe both ingredients in detail in what follows. In a nutshell, we construct estimates of e^{*}_{jct}, the only unobserved element of the gap, by solving the optimization problem of a sector's representative firm, as a function of observables such as labor productivity and a suitable proxy for the average market wage. We estimate λ_c based upon the large cross-sectional size of our sample and the well documented heterogeneity in the realizations of the gaps (see, e.g., Caballero, Engel and Haltiwanger (1997) for US evidence).

2.1.1. Employment gap measure

A sector's representative firm faces an isoelastic demand and has access to a production technology that is Cobb–Douglas in labor and hours per worker:

$$y = a + \alpha e + \beta h,$$
$$p = d - \frac{1}{\eta} y,$$

where y, p, e, h, a and d denote output, price, employment, hours per worker, productivity and demand shocks ,respectively, and η is the price-elasticity of demand. We let $\gamma \equiv (\eta-1)/\eta$, and assume $\eta > 1$, $\alpha > \beta > 0$ and $\alpha\gamma < 1$. Firms are competitive in the labor market but pay wages that increase with hours worked according to a wage schedule $w(h)$, with w' and w'' strictly positive. All lower case variables are in logs.

If the firm can adjust hours and employment in every period at no cost, then its profit maximizing inputs, denoted by $\hat{h}$ and $\hat{e}$, are characterized by:

$$w'\left(\hat{h}\right) = \frac{\beta}{\alpha}, \tag{2}$$

$$\hat{e} = \frac{1}{1-\alpha\gamma}\left[\log\beta\gamma + d + \gamma a - (1-\beta\gamma)\hat{h} - \log\left\{W'\left(\hat{H}\right)\right\}\right], \tag{3}$$

where $\log W(H) \equiv w(\log H)$ and $\log\hat{H} \equiv \hat{h}$ (see Appendix A for the derivation). It follows from Eq. (2) that our functional forms imply that the optimal choice of hours, $\hat{h}$, does not depend on productivity and demand shocks.

Having solved the problem of a firm that faces no frictions, we turn next to the case with adjustment costs. A key assumption is that the representative firm within each sector only faces adjustment costs when it changes employment levels, not when it changes the number of hours worked. [7] It follows that the sector's choice of hours in every period can be expressed in terms of its current level of employment, by solving the corresponding first order condition for hours, which leads to an expression analogous to Eq. (3) with h and e in the place of $\hat{h}$ and $\hat{e}$. Subtracting this expression from Eq. (3) and writing the Taylor expansion for $\log\{W'(e^{h})\}$ around $h = \hat{h}$ as

$$\log\left\{W'(H)\right\} \cong \log\left\{W'\left(\hat{H}\right)\right\} + (\mu-1)\left(h-\hat{h}\right),$$

[4] For surveys of the empirical literature on partial-adjustment see Nickell (1986) and Hamermesh (1993).

[5] To our knowledge, the broadest cross-country study to date – Nickell and Nunziata (2000) – included 20 high income OECD countries. Other recent studies, such as Burgess and Knetter (1998) and Burgess et al. (2000), pool industry-level data from 7 OECD economies.

[6] See Loboguerrero and Panizza (2003) for a similar interaction term in a study of the relation between labor market institutions and inflation.

[7] For evidence on this see Sargent (1978) and Shapiro (1986). Also note that overtime payments, captured by the wage schedule $w(h)$, should not be viewed as adjustment costs since they depend on the level of hours worked, not on the change in hours.