Labour Economics 19 (2012) 653–667

Contents lists available at SciVerse ScienceDirect

Labour Economics

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

Trade liberalization, labor reforms and formal–informal employment dynamics[☆]

Mariano Bosch [a,*], Edwin Goñi-Pacchioni [a,*], William Maloney [b,*]

[a] Inter-American Development Bank, United States
[b] World Bank, United States

ARTICLE INFO

Article history:
Received 12 November 2009
Received in revised form 22 February 2012
Accepted 5 March 2012
Available online 28 March 2012

JEL classification:
J23
J38
J63
J65
O17
F16

Keywords:
Gross worker flows
Labor market dynamics
Informality
Developing countries

ABSTRACT

This paper studies gross worker flows to explain the rise in informality in Brazilian metropolitan labor markets from 1983 to 2002. In particular, we examine the impact of trade and constitutional reforms (that include increased firing costs, tighter restrictions on overtime work, and fewer restrictions on union activity) occurring during the period. We find aggregate sectoral movements to be driven largely by changes in the hiring rates which, in turn are driven largely by the constitutional reforms. Trade liberalization accounts for roughly 1–2.5% of the increase in informality, while the constitutional reforms account for 30–40%.

1. Introduction

A growing literature explores the insights that labor flows can offer about how regulations and institutions affect the functioning of labor markets. On the theoretical side, Bertola and Rogerson (1997), Alvarez and Veracierto (2000), Mortensen and Pissarides (2003), Pries and Rogerson (2005) have all analyzed the impact of policy reforms on labor market flows in a search and matching context. These modeling efforts offer well-defined predictions of gross labor flows and hence a disaggregated view of the processes underlying observed trends in unemployment stocks. For the developing world, the impact of regulations on what is perhaps the distinguishing characteristic of poor country labor markets, the large unregulated or informal sector, has recently been explored by Kugler (2004), Zenou (2008), Albrecht et al. (2009) and Bosch and Esteban-Pretel (2012).

On the empirical side, advanced country literature has looked at the impact of employment protections on worker and job flows (see, for example, Messina and Vallanti, 2007 for Europe, Kugler and Pica, 2008 for Italy). Although data is less easily available, developing countries often offer more extreme policy experiments, and the evolution of the Brazilian labor market from 1990 to 2000 offers an especially informative case.[1] Across this single decade, the share of the metropolitan area work force unprotected by labor legislation and thereby classified as "informal" rose a remarkable ten percentage points. Dramatic outcomes often spring from dramatic innovations and Brazil implemented several significant policy changes across the period that may be considered as candidates for explaining this rise.

☆ We are very grateful to Francisco Carneiro, Marcello Estevao, Gustavo Gonzaga, Lauro Ramos, Jose Guilherme Reis, Gabriel Ulyssea, participants in the NBER workshop on informality, October 2006 in Bogota, and to those at the University of Michigan conference on Labor Markets in Developing and Transition Economies, May 2007, in particular Gary Fields, Ann Harrison, Ravi Kanbur, and Jan Svejnar for helpful advice and reality testing of ideas. We are grateful to Lauro Ramos for providing the old PME dataset for 2002. This research was partially funded by the Regional Studies Program of the Latin America and Caribbean Region of the World Bank. All conclusions are, of course, our own.

* Corresponding author.
E-mail addresses: mbosch@iadb.org (M. Bosch), edwing@iadb.org (E. Goñi-Pacchioni), wmaloney@worldbank.org (W. Maloney).

[1] Boeri and Burda (1996) found limited impact on job matches of active labor market policies in the Czech Republic during the transition from socialism. Hopenhayn (2004) found that the introduction of fixed term contracts and special trial period provisions in Argentina led to higher separations from formal employment. Kugler (1999, 2004) found the reduction of firing costs in Colombia led to greater exit rates in and out of unemployment as well as a reduction in unemployment. For other recent studies on labor dynamics in this journal see Figura (2009) and Pinto (2011).

0927-5371/$ – see front matter © 2012 Elsevier B.V. All rights reserved.
doi:10.1016/j.labeco.2012.03.001

The end of the 1980s saw a far reaching trade reform, and the establishment of a new constitution in 1988 that had substantial impacts on labor costs and flexibility. In particular, it increased overtime costs, raised substantially the penalty for firing workers, and importantly, relaxed restrictions on union activity.

However, the empirical work to date on this particular period in Brazil has been surprisingly indeterminate. Looking at separations from formal sector work, Paes de Barros and Corseuil (2004) find, unexpectedly, no impact of the very large rise in firing costs. Looking at the impact of the reduction in trade protection, Menezes-Filho and Muendler (2007) find mixed results on outflows from formal employment and into informality, depending on specification, while Goldberg and Pavcnik (2003) find no impact on the size of the informal sector.

We revisit this experiment analyzing the impact of the trade and labor reforms on the labor market through their impact on gross labor flows. Conceptually, such reforms can work through both workers' inflows to and outflows from formal sector jobs and hence a full understanding of the channels of impact requires studying both. To do so, we estimate the impact on the overall level of informality as well as the relative flows using a detailed and extensive rotating panel dataset. Taking advantage of the differential impact of reforms across industries, we find little compelling evidence that trade reform is the prominent or even a statistically significant factor. However, all three labor related dimensions of the constitutional reform appear more important. In all cases, the effect originates more from lower formal job finding rates as opposed to the separations that Paes de Barros and Corseuil (2004) and Menezes-Filho and Muendler (2007) investigated. We estimate that between 30 and 40% of the trend in informality can be explained by changes related to the constitutional reform while changes in trade explain only between 1 and 2.5%.

2. Data and context

The period from the late 1980s to the first half of the 1990s was a turbulent one, comprising a persistent hyperinflation and six major stabilization plans designed to control it, a constitutional change, and several other reforms including a dramatic reduction in barriers to trade. At this time, Brazil also experienced the 1990 economic crisis and slowdowns in 1999 and 2001 with subsequent recoveries.

We draw on the Monthly Employment Survey (Pesquisa Mensal de Emprego, hereafter PME) that conducts extensive monthly household interviews in 6 of the major metropolitan regions (São Paulo, Rio de Janeiro, Belo Horizonte, Porto Alegre, Recife and Salvador) and covers roughly 25% of the national labor market.[2] The questionnaire is extensive in its coverage of participation in the labor market, wages, hours worked, benefits received, and other variables that are traditionally found in such employment surveys. We also draw on the National Household Survey (Pesquisa Nacional por Amostra de Domicílios or PNAD) for selected cross checks. The PNAD covers the entire country, but lacks any panel dimension and hence is not suitable for the study of gross labor flows.

The PME's structure as a rotating panel allows us to create time series of gross labor market flows. It tracks workers across four consecutive months, then drops them from the sample for 8 months, and then reintroduces them for another 4 months. Each month one fourth of the sample is substituted with a new panel. After 12 months the initial sample is re-interviewed. Over a period of two years, three different panels of households are surveyed, and the process starts again with three new panels. Regrettably, the PME was drastically modified in 2002 and it is not possible to reconcile the new and old definitions for unemployment and job sectors.[3] Hence, our analysis begins in 1983 and ends in 2002.

We follow the literature in dividing employed workers into three sectors.[4] The formal salaried (F) are those public and private employees whose contract is registered or signed (assinada) in his/her work card (carteira de trabalho) as dictated by Brazilian law. This registration entitles the worker to labor rights and benefits including 30 days of paid holiday per year, contributions for social security, the right to request unemployment benefit in case of dismissal, monetary compensation if dismissed without a fair cause, and maternity and paternity paid leave, among other benefits. The informal salaried (I) are those employees whose work card has not been signed (*sem carteira*). Finally, the informal self-employed (S.E.) are workers who are not employees and hence are not covered by the benefits afforded by a signed work card. Ideally, we might also employ a definition of informality based on firm size as well, considering establishments having less than 5–10 as informal employees. However, the PME until 2002 does not tabulate this information.[5] Yet, Henley et al. (2009) find that there is a close correspondence between access to protection, our measure of informality (employment registration), and size.

Fig. 1 plots the share of informal employment (comprising both informal workers and self-employed) over total employment from 1983 to 2002. The share of informal employment (panel a) remained relatively constant around 35% of the work force during the 1980s despite major macroeconomic shocks. However, as numerous previous studies had documented (see for example, Ramos and Reis, 1997; Ramos, 2002; World Bank and IPEA, 2002; Ramos and Brito, 2003; Goldberg and Pavcnik, 2003; Veras, 2004; Ulyssea, 2005, and Ramos and Ferreira, 2005a,b), the share begins a major secular upturn at the beginning of the 1990s that levels off at 45%, 10 percentage points above its level at the beginning of the 1990s.

These movements in formal sector size are necessarily a function of the relative inflows and outflows into each sector. Panels b and c of Fig. 1 present the evolution of these two series that compactly and completely capture the relevant dynamics: inflows into informal employment relative to those into formal; and outflows from informal employment relative to those from formal employment. We calculate relative inflows for each year as the number of workers transiting into an informal sector job (from unemployment, out of the labor force or formal jobs) relative to those transiting to a formal sector job (from unemployment, out of the labor force or an informal job). Analogously, we calculate the relative outflows from informal jobs relative to formal jobs. It is clear that relative inflows into informality (formality) were strongly countercyclical (procyclical) until the beginning of the 1990s. However, after 1992 the relationship breaks down with relative accessions into formality no longer

[2] For descriptions of the methodology of the Pesquisa Mensal de Emprego, see Sedlacek et al. (1990), IBGE (1991) and Oliveira (1999).

[3] The unemployment rate jumps from 8% to 14% after the change in methodology of the PME.

[4] There is broad consensus on the definition of informality in the Brazilian literature. A comprehensive survey of work studying the size and evolution of the Brazilian informal sector in the labor market can be found in Ulyssea (2005) and a summary of stylized facts of the eighties and nineties is detailed in Ramos and Reis (1997), Ramos (2002), Ramos and Brito (2003), Veras (2004), and Ramos and Ferreira (2005a,b).

[5] The ILO for a period defined informality as consisting of all own-account workers (but excluding administrative workers, professionals and technicians), unpaid family workers, and employers and employees working in establishments with less than 5 workers. In fact, Bosch and Maloney (2008) find that in Mexico, the criterion of small firm size, and this paper's criterion of lack of registration, are similar in motivation conceptually and lead to a great deal of overlap. 75% of informal workers are found in firms of 10 or fewer workers. Since owners of firms or self-employed are not obliged to pay social security contributions for themselves, we consider them as informal self-employed with no social security contributions (and hence without the benefits that are perceived by salaried workers holding a *carteira*).