



## Equilibrium unemployment-inequality correlation

Rubens Penha Cysne\*, David Turchick

FCV/EPGE, Getulio Vargas Foundation, Graduate School of Economics, Brazil

### ARTICLE INFO

#### Article history:

Received 16 February 2011

Accepted 31 December 2011

Available online 25 February 2012

#### JEL classification:

E20

J60

#### Keywords:

Unemployment  
Income inequality  
Gini coefficient  
Job search

### ABSTRACT

A vast empirical literature implies that increases in unemployment have an aggravating impact on income inequality, whence international and intertemporal inequality comparisons might be sometimes biased. We show how job-search models can be useful in better understanding this fact. In fact, in the classic [Burdett and Mortensen \(1998\)](#) model, as well as in one of its many possible extensions ([Bontemps et al., 2000](#)), search frictions are a force pushing the unemployment-inequality correlation in that direction: provided that the unemployment rate is no larger than 15%, a positive correlation between unemployment and inequality unequivocally emerges.

© 2012 Elsevier Inc. All rights reserved.

### 1. Introduction

It is a common procedure in economics to compare income inequality measurements of different economies or of the same economy at different points in time. Sometimes, such comparisons are also carried out with the purpose of evaluating the success or failure of policies aimed at reducing inequality.

Concomitantly, a vast empirical literature, using data from different countries, has already documented that inequality tends to be positively correlated with unemployment.<sup>1</sup> Examples of this literature include [Metcalf \(1969\)](#), [Blinder and Esaki \(1978\)](#), [Jäntti \(1994\)](#) and [Mocan \(1999\)](#), using data from the United States; [Nolan \(1986\)](#), using data from England; [Björklund \(1991\)](#), using data from Sweden; [Blejer and Guerrero \(1990\)](#), using data from the Phillipines; and [Cardoso et al. \(1995\)](#), using data from Brazil. More recently, [Castañeda et al. \(1998\)](#), using data from the US Bureau of the Census during the 1948–86 period, have found that “the income share earned by the lowest quintile is both the most volatile and the most procyclical”, and that the procyclicality of the income shares decrease monotonically until one reaches the top 5%.

[Cysne \(2009\)](#) has shown that standard search models are able to generate the assessed positive correlation between unemployment and inequality. A limitation of that analysis is that it has drawn upon a class of models (based on the seminal contribution of [McCall, 1970](#)) that takes as a given the initial distribution of job offers. We show that this conclusion also holds in the class of on-the-job-search models with firms posting wages and meeting workers in a random, decentralized fashion, but at fixed frequencies.

\* Corresponding author. Present address: Praia de Botafogo 190 s, 1100 andar, Rio de Janeiro, RJ 22250-900, Brazil. Tel.: +55 21 3799 5832; fax: +55 21 2553 8821.

E-mail address: [rubens.cysne@fgv.br](mailto:rubens.cysne@fgv.br) (R.P. Cysne).

<sup>1</sup> We refer to those inequality measurements usually reported by researchers, which are based on cross-sectional (rather than long-run) distributions of income.

As representatives of this class, two models were chosen. One is the seminal [Burdett and Mortensen \(1998\)](#) model, which has led to numerous important variations and extensions in several directions (see for example [Postel-Vinay and Robin \(2002\)](#) and [Cahuc et al. \(2006\)](#), in which firms are allowed to renegotiate wages with their employees who are receiving outside offers). The other is a simple case of the model of [Bontemps et al. \(2000\)](#), which extends the most basic Burdett–Mortensen model in the direction of firm–productivity differentiation. Both models generate pure wage dispersion – the adjective *pure* referring to the fact that worker heterogeneity is not necessary (cf. [Acemoglu, 1999](#); [Albrecht and Vroman, 2002](#); [Greiner et al., 2004](#), for instance, where worker skill heterogeneity may also affect wage dispersion through a change in the very structure/type of the equilibrium). In this way, all the unemployment here comes only from job market frictions represented by the matching technology, and not from the possibility that some firms may endeavor to avoid the hiring of insufficiently skilled workers, or even make adjustments to their level of productivity (this would once more affect wages and their distribution). Also, there is no between–group inequality (since there is only one group of workers), and all inequality could be classified as within group.

Job search models with heterogeneous workers may allow for the breaking down of unemployment and inequality in a natural way (in this respect the Theil index could be a natural choice for the inequality measure, due to its decomposability property), and study these partial effects. However, this would be beyond the scope of the present work, which attempts to analytically assess the aggregate effect of unemployment on inequality. As we shall see, a positive correlation stems even from pure wage dispersion models. In the case of heterogeneous workers, one may expect the total effect on inequality to be even larger, since the burden of unemployment is higher for low-skill workers, who endure a longer unemployment spell.<sup>2</sup>

Our analytical approach to the present issue complements the aforementioned empirical literature by providing closed-form expressions directly linking income inequality to unemployment. These expressions may help the macroeconomist in understanding how this link emerges, on which parameters it may depend (unemployment benefits and firm productivity will be shown to be key parameters), and in which cases the correlation may revert its sign.

At the same time, our analysis offers a word of caution to policy makers interested in the evaluation of policies aiming at the reduction of income inequality (e.g., through a rise in unemployment insurance benefits): the reported (absolute value) effect on inequality may be biased downward due to technological progress in the production function during the two points in time considered or upward due to a rise in the contact rate between firms and workers (thus bringing the unemployment rate down).

In other words, by making explicit a channel through which unemployment (and some parameters of these classical models) affects inequality, this work adds value and information to cross-country and longitudinal studies such as [Jaumotte et al. \(2008\)](#), in the sense that inequality indices at different points in space or time should be expected to naturally differ according to basic differences in the surrounding political, technological and business environment. As an example, in [Mortensen and Pissarides \(1999, p.26\)](#) it is reported:

“Looking at average changes over the OECD, there appears to be a negative correlation between the growth in unemployment and the rise in inequality. The United States, Canada and Sweden experienced the biggest rises in inequality and the smaller rises in unemployment (a fall in the US case). The large European countries experienced small rises or falls in inequality but big rises in unemployment (with the exception of the United Kingdom [...]).”

We shall see how such correlations may be understood, in qualitative terms, in light of the simplest Burdett–Mortensen model, with no skill heterogeneity argument entering the picture (unlike [Mortensen and Pissarides, 1999](#)).<sup>3</sup>

Our presentation can be outlined in the following way. First, the Gini index of income inequality is derived as a function of the model’s parameters – which, in turn, also determine the unemployment rate. Next, we analyze the conditions under which a positive correlation between unemployment and inequality emerges. Our basic conclusion is that such a positive correlation will always be a consequence of the optimizing process assumed by these models, provided that the rate of unemployment is no greater than 28% (in Burdett and Mortensen’s model) or 15% (in Bontemps et al.’s model).

The remainder of the paper is organized as follows: Section 2 provides a model-free digression on how unemployment and unemployment benefits may affect the Gini coefficient of income inequality. Section 3 provides the analysis of the unemployment–inequality correlation in the context of Burdett and Mortensen’s model, whereas Section 4 does the same using Bontemps et al.’s model. Section 5 concludes. Calculations are duly detailed in the appendices.

## 2. Unemployment and inequality

This section provides a short digression about theoretical possibilities linking unemployment and the Gini coefficient of income inequality. We start with the case of simple discrete income distributions in order to build the intuition for the type of result to be proven later.

The first two examples analyze a one-wage economy with and without unemployment insurance, respectively. It is shown that the correlation between unemployment and inequality is always positive in the first case (except when

<sup>2</sup> We are indebted to an anonymous referee for making this point.

<sup>3</sup> Using income inequality in the place of their preferred notion of wage inequality.

Download English Version:

<https://daneshyari.com/en/article/965529>

Download Persian Version:

<https://daneshyari.com/article/965529>

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