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Optimal unemployment benefits in the presence of informal labor markets[☆]



Martin Gonzalez-Rozada, Hernán Ruffo^{*}

Universidad Torcuato Di Tella, Argentina

HIGHLIGHTS

- We analyze the tradeoff between unemployment insurance (UI) level and duration.
- We derive a sufficient statistics formula of the welfare gains of a balanced-budget UI reform.
- Through administrative data from Argentina we evaluate the impact of changes in UI.
- We conclude that welfare would rise if unemployment insurance was higher but shorter.

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ABSTRACT

We assess optimal unemployment benefit level and duration in a labor market with many informal jobs. Using administrative data from Argentina, a country with high informality, we exploit discontinuities in duration, and a reform that increases benefits. We find that increasing benefits hardly extends unemployment spells but raises re-employment wages. In contrast, extending unemployment benefits prolongs unemployment spells with no effect on re-employment wages. In a search model, we derive sufficient statistics to analyze the welfare effects of a reform that increases benefits by shortening duration. Calibrating our formula using our empirical results, we find that welfare would increase with higher benefits and shorter duration.

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^{*} Corresponding author at: Av. Figueroa Alcorta 7350, C1428BCW, Buenos Aires, Argentina.

E-mail address: hruffo@utdt.edu.

1. Introduction

This paper analyzes unemployment insurance optimal benefit level versus duration in an informal labor market. Although there is a significant amount of literature on the effects of UI on the behavior of workers,¹ there is little evidence of the impact of UI on developing countries. There are two main issues that make developing countries especially interesting. First, they are usually characterized by stronger financial frictions and less developed financial markets (Rajan and Zingales, 1998), which can make unemployment insurance a particularly important mechanism for providing liquidity to the unemployed. Second, informal jobs, which are quite prevalent in developing countries, impose additional constraints on governmental efforts to provide insurance because such jobs generate unobservable re-employment states, which create an additional source of moral hazard. Specifically, if workers can accept jobs in the informal sector while continuing to receive UI benefits without being detected by the government, a more generous UI system would reduce the incentive to search for a formal job and induce workers to accept informal jobs. In this paper, we show that both liquidity and moral hazard effects are high in Argentina.

In the spirit of the sufficient statistics approach (Chetty, 2006), we extend the analysis of Shimer and Werning (2007) with a search model of random wage offers that accounts for both informality and limited UI duration to derive a formula that optimally accounts for the trade-off between the level and duration of UI. As in Shimer and Werning (2007), we find that our formula depends on the behavioral responses of workers in two variables: the finding rate and reservation wages. The former is a measure of the unemployment induced by a more generous UI and relates to the cost of UI. The latter relates to welfare gains for the unemployed because under rather general conditions, the reservation wage is a monetary measure of the welfare of the unemployed. Notably, our formula is invariant to the level of informality, meaning that informality impacts the estimate only indirectly through elasticities and parameters.

To evaluate this formula empirically, we use administrative data for 2005 to 2009 from Argentina, a country in which the labor market is characterized by high informality. We exploit certain discontinuities in eligibility and reforms in 2006 to estimate four main elasticities: the elasticities of unemployment duration to an increase in UI benefits and to an extension of UI eligibility and the elasticities of re-employment wages to the same two changes. We find that although an increase in the level of UI increases both unemployment duration and wages, an extension of UI duration prolongs unemployment but does not significantly improve wages. These results suggest that longer UI duration increases the cost of the transfers without any significant evidence of welfare gains for workers. Thus, the preferable option seems to be a redesign of UI that increases the benefit level but shortens its duration.

We use our formula to formally evaluate the welfare effect of that type of UI reform. When we calibrate this formula with our estimated elasticities, we find that increasing benefits and reducing the duration of UI in a budget-balancing manner substantially

increases welfare. We conclude that in the context of Argentina, a country characterized by high informality, it would be appropriate to increase UI benefits and reduce UI duration.

We provide several robustness checks to support this conclusion. First, we reproduced all of our estimations for workers in the construction sector to show that the same conclusion applies to these workers. Second, we show that the main conclusion remains the same when we use an alternative source of variation. Specifically, we apply regression discontinuity design on the age of the unemployed to identify the effects of extended UI eligibility. This exercise allows us to conclude that our main observation is true for workers around 45 years of age. Third, we show that our conclusion is invariant to the use of a completely different formula, one that rests on the search effort model and alternative estimations. In particular, we extend Chetty (2008) to account for the trade-off between UI duration and level. This formula requires an estimate of the elasticity of unemployment duration to the provision of liquidity that we associate with changes in severance pay (SP) (Card et al., 2007, Chetty, 2008). To that extent, we exploit a reform of SP in 2007 that allows for a difference-in-differences estimation. The estimates and the calibration of the formula confirm our main conclusion. Finally, we show that our conclusion does not change when we apply different methods in the estimation of the elasticity, including local weights with optimal bandwidths and imposing censoring in duration.

Our results and conclusions are strongly connected to the paper of Álvarez Parra and Sánchez (2009). Using a calibrated search model, they analyze the optimal profile of unemployment insurance as in Hopenhayn and Nicolini (1997) when workers can be re-employed at hidden jobs. They show that in a context with informal jobs, UI should be high but short-lived. The intuition is that UI acts as a subsidy to search for a job by compensating for the opportunity costs of searching for a formal job instead of accepting a low-quality informal job. However, given that informal jobs are unobservable to the government, the worker can add income from UI to informal wages. For that reason, UI should be relatively short in duration; otherwise, it would be an incentive to collect both wages and UI transfers, essentially acting as a subsidy to informality. Additionally, UI should initially be high so that it adds value to a formal job by providing some form of insurance in case of displacement, as a sort of entitlement effect.

We also contribute to the growing literature on the sufficient statistics approach, which has been applied extensively to unemployment insurance (Card et al., 2007, Chetty, 2008, Gruber, 1994, Schmieder et al., 2012a). However, the joint determination of the level and duration of UI is not well developed in this literature.

Thus, our contribution to the literature is twofold. First, we provide UI optimal benefit level versus duration discussion in an informal labor market. Second, we derive sufficient statistics to assess welfare effects of UI optimal benefits in developing countries.

In the next section, we develop a search framework and present our main formula. Section 3 presents the characteristics of the labor market and of UI in Argentina, and Section 4 discusses the data and estimation strategy that exploits these characteristics and reforms. Section 5 presents our main empirical results, employs our estimates for a welfare analysis, and demonstrates the robustness of our methods and data to support our conclusions. Finally, Section 7 provides concluding remarks.

2. Model

Our formulas for welfare gains is based on job search theory. We first present a general setup. Then, we restrict the specification of the model to reproduce the formula in Shimer and Werning (2007) and extend it for the case of limited UI duration. Additionally, in Section 5,

¹ Many papers analyze the effect of higher benefits on the probability of finding a job (Bover et al., 2002, Centeno and Novo, 2014, Katz and Meyer, 1990, Meyer, 1990). Others analyze the effects of longer UI duration (Card and Levine, 2000, Lalive, 2008, van Ours and Vodopivec, 2006a) or assess the impact of both higher levels and increased duration of UI (Lalive et al., 2006). Research on the effects of UI on job quality or re-employment wages is less abundant; although it finds a positive relationship between UI generosity and re-employment wages, this result is weaker and less significant. Examples of this strand of literature are Gangli (2002) and Schmieder et al. (2010). Additionally, Centeno (2004), Centeno and Novo (2006), and van Ours and Vodopivec (2006b) analyze the effects of UI on quality indicators, including duration of re-employment job, type of job, and wages.

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