



# The labor market effects of introducing unemployment benefits in an economy with high informality



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## ABSTRACT

Unemployment benefit systems are nonexistent in many developing economies. Introducing such systems poses many challenges which are partly due to the high level of informality in the labor markets of these economies. This paper studies the consequences on the labor market of implementing an unemployment benefit system in economies with large informal sectors and high flows of workers between formality and informality. We build a search and matching model with endogenous destruction, on-the-job search, and intersectoral flows, where agents in the economy decide optimally whether or not to formalize jobs. We calibrate the model for Mexico, and show that the introduction of an unemployment benefit system, where workers contribute when employed in the formal market and collect benefits when they lose their jobs, even if they obtain informal jobs, can lead to an increase in formality in the economy, while also producing small increases in unemployment. The exact impact of incorporating such benefits depends on the relative strength of two opposing effects: the generosity of the benefits and the level of the contributions that finance those benefits. We also show important policy complementarities with other interventions in the labor market. In particular, combining the unemployment benefit program with policies that reduce the cost of formality, such as lower employment taxes and firing costs, can produce greater decreases in informality and lower impacts on unemployment than when the program is applied in isolation.

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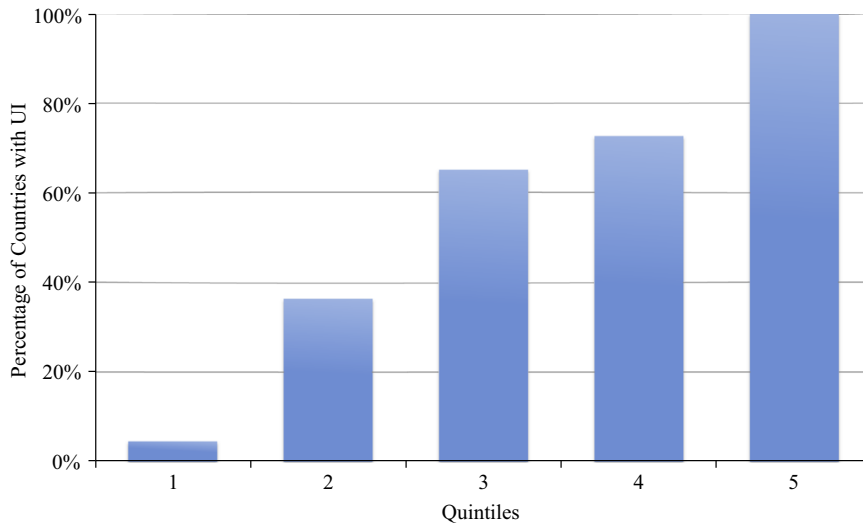
## 1. Introduction

Most workers in developing countries lack any kind of unemployment insurance. According to the International Labor Organization (ILO, 2000), 75% of the workers in the world have no access to income support during unemployment spells. This is due, in part, to the fact that many countries, especially low-income ones, do not have unemployment benefit (UB hereafter) systems in place. As these countries' economies grow, they begin to introduce such systems into their labor markets (see Fig. 1).<sup>1</sup> In advanced economies, the presence of UB generates the traditional problem of moral hazard via the

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<sup>1</sup> Fig. 1 shows, by GDP per capita quintiles, the fraction of countries that have some type of UB system in place. The results reveal that the higher the income per capita of the country, the more likely the country is to offer UB to its workers in the formal market.



**Fig. 1.** Unemployment benefits availability by GDP per capita quintiles. *Notes:* this figures illustrates the percentage of countries that have some type of UB system ordered by quintiles of GDP per capita.

*Source:* International labor Organization.

reduced job search efforts of discharged workers. This has been extensively studied in [Pissarides \(1983\)](#), [Acemoglu and Shimer \(1999\)](#), and [Cahuc and Lehmann \(2000\)](#). The implementation of UB schemes in middle-income countries, however, poses several additional challenges because of the existence of large, over-developed informal sectors.

The presence of these sectors in middle-income countries, almost by default, ensures low coverage of UB for unemployed workers. Informal workers do not pay taxes or contribute to social security, and their employment conditions are difficult to verify. Therefore, a large proportion of workers are likely not to be covered by UB. This is particularly worrisome since the data shows that informal workers seem to be more susceptible to losing their jobs. In fact, a large proportion of the flow of workers into unemployment originates from informal jobs. According to [Bosch and Maloney \(2008\)](#), 50% of unemployment volatility in Brazil and Mexico is generated by such inflows. Furthermore, panel data evidence shows that there are quantitatively important worker flows between formal and informal jobs (see [Pages and Stampini, 2009](#); [Bosch and Maloney, 2008](#)). This data suggests that, in countries with high informality, the UB are likely to impact not only the unemployment rate but also the employment composition between formal and informal jobs. At the same time, middle-income countries impose high costs on the dismissal of formal workers, with the double objective of protecting jobs and providing income for unemployed workers. The interaction of current employment protection measures with new UB systems can result in higher costs for the formal sector.

The objective of this paper is to assess quantitatively the effects of introducing a UB system given its potential impact in a labor market with large informality. In particular, we are interested in understanding the main channels through which this implementation may alter the labor market outcomes for workers and the actual quantitative impact it may have on unemployment and share of formality. To achieve this goal, we construct a search and matching model that specifically allows for key salient features of labor markets with informal jobs, and introduces essential mechanisms to understand the impact a UB system can have on an economy with substantial informality. We then calibrate and numerically solve the model for Mexico, a country with a large informal sector that has recently begun to implement the introduction of a UB system.

In our model there are two types of jobs, formal and informal. Firms open generic vacancies to fill both types. When matched with ex-ante identical workers, depending on the productivity of the match, a firm will establish a formal or an informal relationship. For high productivity matches, a formal relationship is often preferred. In this case, the firm has to pay employment taxes and is liable for firing costs upon dismissal of the worker. For low productivity matches, firms may find it advantageous to hire workers informally. In this case, no taxes are paid, but firms are subject to monitoring and penalties from the government.

We also allow for on-the-job search and for matches to be subject to shocks that change their idiosyncratic productivity. These factors generate endogenous job separations and flows between formal and informal jobs. We then introduce a UB system for formal workers on top of the baseline set-up just described. The UB system is such that formal workers make contributions while they are employed, and, after some time, are entitled to collect benefits if they lose their jobs. Given the inability of the government to fully monitor the informal sector, we allow for workers who are employed informally to collect UB if they had lost their previous formal jobs.

There are two main mechanisms that determine the impact of the UB system on the labor market, and, in particular, on the unemployment rate and share of formal employment. First, the UB provides an entitlement that is contingent on the worker contributing to the UB system while employed. Since only formal workers contribute, a tension arises between the

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