Child labor, idiosyncratic shocks, and social policy ☆

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ARTICLE INFO

ABSTRACT

In this paper, we provide a dynamic model with heterogeneous agents to study child labor in an economy with idiosyncratic shocks to employment. Households facing adverse shocks may use child labor as a means to smooth consumption. We show that the introduction of an unemployment insurance program and/or a universal basic income system helps eliminate child labor endogenously in this context. A calibration to South Africa in the 1990s is provided.

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1. Introduction

In the United States, the average duration of unemployment during much of the 1990s was about twelve weeks. Unemployment rates remained in the neighborhood of 6%, the probability to stay employed was close to 1 and the probability to move out of unemployment over a six-week period was one half. Those without job offers were temporarily offered unemployment benefits which represented close to 35% of their previous wage (Pallage and Zimmermann, 2005).

In some countries, like South Africa, being unemployed over the same period was a different experience. On average, it meant a very long period without work – in the order of two years according to Kingdon and Knight (2004a). The average unemployment rate ranged from 20% to 40% (Kingdon and Knight, 2004b), depending on the definition, and until 2001 there was no generalized public support for the unemployed. Since credit was hardly available to those without work (Finscope,

2004), there were essentially two ways to self-ensure against employment shocks: one was to accumulate savings, the other was to rely on child labor when adult work could not be found.

We build a dynamic model with heterogeneous agents calibrated to South Africa in the 1990s prior to the introduction of an unemployment insurance agency. We measure how child labor responds to idiosyncratic employment shocks in this model and whether an appropriately chosen unemployment insurance [UI] would make child labor endogenously vanish. We compare this result in terms of social welfare to an outright ban on child labor and to other economic instruments such as a universal basic income.

Child labor is not a small phenomenon. The International Labor Organization (ILO) estimates at 168 million the number of children working worldwide (ILO, 2013). Campaigns against child labor have advocated child labor bans (i.e. ILO (1973, 1999), Conventions C138, C182), product boycotts (US Senator Harkin's bill proposal), or trade sanctions against countries tolerating the practice.[2]

Since the seminal work of Basu and Van (1998), child labor has generated a large body of theoretical work trying to understand why altruistic parents would choose to send their children to work. Multiple causes have been highlighted going from poverty (Basu, 1999, 2000; Dessy, 2000; Jafarey and Lahiri, 2002; Dessy and Pallage, 2005) to social norms (López-Calva, 2002; Emerson and Souza, 2003) to market failures (Baland and Robinson, 2000; Dessy and Pallage, 2001; Pouliot, 2006; Emerson and Knabb, 2007). Parallel to those theoretical efforts, a macroeconomic literature was initiated that addressed the implications of child labor in dynamic equilibrium models (Moe, 1998; Doepke and Zilibotti, 2005; Emerson and Knabb, 2006; Pallage and Zimmermann, 2007; Soares, 2010; Augeraud-Véron et al., 2013).

In this paper, we argue that child labor serves as a natural insurance mechanism against adverse employment shocks hitting the family. In this context, a social policy that directly addresses the effects of the shocks on the household should have a very important quantitative effect on the incidence of child labor. We measure this effect for various social policies and compare their welfare implications to that of a child labor ban and a self-insurance mechanism.

The impact of idiosyncratic shocks on child labor is well documented in the empirical literature: Beegle et al. (2006, 2009) show a significant link between the two in the case of rural households in Tanzania. See also Udry (2004) for an interesting survey of this evidence. Guarcello et al. (2010) show that, in Guatemala, the labor participation rate of children from households hit by idiosyncratic shocks is 5 percentage points higher than average. In an empirical study of Nigerian households, Boutin (2011) finds that the use of children's labor as a way of coping with negative shocks is still prevalent while remittances can partly alleviate this effect. Duryea et al. (2007) also show for Brazil that unemployment shocks significantly raise the probability that a child works. In an earlier study, using historical data for the United States in the 19th century, Goldin (1979) had reached a similar conclusion. Dammert (2008) estimates that the shift of coca production from Peru to Colombia after Peruvian authorities tried to ban its production had a significant positive impact on children's labor force participation in coca producing communities. Similar effects are documented by Jensen (2000) for agricultural shocks in Côte d'Ivoire and Kruger (2007) in rural Brazil. Indirect evidence for South Africa is also provided by Edmonds (2006), who finds that child labor sharply declines when members of the household become eligible to the government cash pension. Although such income shock could be anticipated, financial markets in South Africa were so incomplete during the period of study, that households could not borrow against the future pension income. At a more aggregate level, Dehejia and Gatti (2005) establish the fact that in countries where financial markets are underdeveloped, child labor is an important way for families to smooth out income shocks, while Singh (2011) shows that child labor is countercyclical. Baland and Robinson (2000), Pörtner (2001) and Pouliot (2006) have also theoretically shown that children and children's labor can be used as insurance devices against household income variations.

In order to reduce child labor, more and more governments try to implement social programs, like the Bosla Familia Program in Brazil or the Oportunidades Program in Mexico. But very few theoretical studies in the literature have compared the different instruments that could be implemented to offer better social protection to families and measured their actual effect on child labor.[3] An interesting exception is Basu (2000) who considers the impact of a minimum wage legislation on child labor. Our model proposes to test and compare the responsiveness of child labor to several social policies and the welfare implications associated with their implementation.

This paper links two strands of literature: the literature on child labor, and the literature that addresses the optimality of unemployment insurance programs, in the wake of Baily (1978), Shavell and Weiss (1979), Hansen and Imrohoroğlu (1992), Andolfatto and Gomme (1996), Wang and Williamson (1996), Hopenhayn and Nicolini (1997) and Pallage and Zimmermann (2001).

The model we work with is a dynamic equilibrium model with heterogeneous agents à la Hansen and Imrohoroğlu (1992). Adult agents differ in their employment status, that of their child and the savings they have built up. Parents and children are hit by employment shocks. They receive job offers randomly according to some Markovian stochastic process that reflects the labor market dynamics of the economy we want to mimic. Parents value the household consumption and leisure and dislike child labor. If credit markets are incomplete, adult agents may use child labor as a way to smooth consumption. The model also features imperfect monitoring by the government. Hence there may be moral hazard in the

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[2] The effects of boycotts are analyzed in Basu and Zarghamee (2009), those of trade sanctions are addressed in Jafarey and Lahiri (2002). These studies show that both product boycotts and trade sanctions may in fact increase the incidence of child labor for reasonable scenarios.

[3] On the empirical side, there is a growing literature that investigates the impact of social programs and transfers on child labor (see Edmonds (2008) for a survey). In the case of South Africa, in particular, Edmonds (2006) shows a significant effect of the pension allowances on child participation in the labor market.