Combating Child Labor: Incentives and Information Disclosure in Global Supply Chains

International Labor Organization (ILO) defines child labor as "work that is mentally, physically, socially or morally dangerous and harmful to children; and interferes with their schooling." In 2012, there were 168 million child laborers worldwide, accounting for around 11% of the entire child population (ILO 2013). Although there have been efforts to combat child labor, the progress to end it is challenged by the prevalence of global outsourcing. Multinational firms, however, lack financial incentives to control their local suppliers' use of child labor, as child labor enables local suppliers to keep production costs down, and the surplus from such low costs is then passed on to multinational firms. Furthermore, two common approaches such as internal inspections and penalty schemes have drawbacks: Internal inspections require investigation of production sites in sourcing networks which might involve thousands of factories spread across multiple countries. For penalty schemes to be effective, a firm may have to leave considerable profits to its supplier so that it can deter the supplier from hiring child labor by threatening to terminate the contract.

In light of these challenges, several initiatives have been undertaken. First, to impose pressure on global firms, third-party organizations have developed programs to monitor child labor practices at local production sites, and launched consumer education campaigns to increase consumer awareness of child labor. Second, firms have undertaken a variety of strategies to improve their abilities to monitor suppliers' practices in a more cost-effective manner. Third, firms have been encouraged to disclose their policies and efforts in combating child labor. Companies such as Apple, Sony and Nike publish social responsibility reports every year, which disclose the measures taken to combat child labor. Moreover, a recently passed bill, the California Transparency in Supply Chains Act, requires large manufacturers and retailers in California to publicly disclose their efforts in combating child labor in their supply chains.

Despite the significance of child labor problems in the world, to date, there has been little research on evaluating the impact of these initiatives on child labor in global supply chains. Although previous literature has argued that a transparent supply chain has both marketing and
operational benefits (e.g., New 2010), it is unclear whether improving information disclosure in supply chains would always reduce child labor. If it does not, are there any potential measures that can enhance its benefits? This paper aims to provide insights into these questions by examining how the initiatives to improve information disclosure affect firms' strategies and incentives to control their suppliers' use of child labor. To this end, we develop a game-theoretic model based on a two-tier supply chain, in which a multinational manufacturer (‘she’) outsources her production to a local supplier (‘he’). The supplier has an option to use child labor in place of legitimate labor at a lower cost. However, child labor, if exposed to the public, would incur a goodwill loss to the manufacturer. The manufacturer may carry out costly (but imperfect) internal inspections to monitor her supplier's child labor practice. When the manufacturer finds the supplier's use of child labor or when a third party does so through external monitoring, the manufacturer may require the supplier to take corrective actions by removing child laborers and compensating them, or alternatively the manufacturer may terminate the contract with her supplier. We examine the impact of information disclosure by comparing the following two scenarios: In a non-disclosure scenario, the supplier and third party organizations are unable to observe the manufacturer's inspection effort, whereas in a disclosure scenario, they are informed of the manufacturer's inspection effort.

We summarize our main findings in the following three aspects:

1. **Strategies to combat child labor:** A global manufacturer may use three different strategies to control the use of child labor in her supply chain. First, when internal inspections are economical, the manufacturer can reduce the incidence of child labor by undertaking inspections to detect and remove child labor hired by the supplier. Second, when internal inspections are costly, the manufacturer can deter the supplier's child labor employment by offering a sufficiently high wholesale price, which will guarantee the supplier a high profit margin and thus cause him a high potential loss when he loses a contract with the manufacturer. Third, the manufacturer could simultaneously use internal inspections and a medium wholesale price to deter the employment of child labor. This strategy should be adopted only in the disclosure scenario because the supplier is
willing to accept the medium wholesale price and employs no child labor only when he is informed that the manufacturer's inspections are comprehensive.

2. Factors that affect manufacturers' strategies: As expected, increasing goodwill cost (e.g., by enhancing consumer awareness) or adding more value to business relation helps reduce child labor. However, internal inspections and wholesale price serve as strategic substitutes in combating child labor, so that reducing inspection costs does not necessarily reduce child labor. In contrast, internal inspections and external monitoring can be either strategic complements or substitutes, meaning that third parties' monitoring may or may not raise manufacturers' inspection effort. The impact of these factors is unaffected by disclosure of the manufacturer's inspection effort, except that the unintended consequence of low inspection costs is less likely to occur with the disclosure.

3. Information disclosure: Although policy makers seem to advocate information disclosure in supply chains, information disclosure may not always reduce child labor. On one hand, manufacturers' disclosure of their efforts to combat child labor can help reduce child labor by enabling manufacturers to use the combined strategy of internal inspections and medium wholesale prices. On the other hand, it is possible that information disclosure gives manufacturers incentives to offer low wholesale prices and disclose low inspection efforts. This could inadvertently lead suppliers to employ child labor. We further find that this adverse effect of information disclosure could be mitigated by several measures. One counterintuitive measure is to allow manufacturers themselves to choose the amount of compensation paid to child labor detected during internal inspections. This adverse effect no longer exists when firms adopt a zero-tolerance policy (i.e., terminate contracts whenever child labor is found).

References
