Responsible Sourcing via Vertical Integration and Supply Chain Partnership

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In recent years, several reports on firms' corporate social responsibility violations have appeared in media outlets. Many well-known European and American brands, including Nike, Benetton, Bonmarche, the Children's Place, Mango, Primark, and Walmart, drew criticism for sourcing from suppliers that were revealed to be not complying with labor standards. In the face of rapid manufacturing globalization, firms face increasing challenges in ensuring compliance with environmental and labor standards throughout the supply chains.

A number of approaches have been suggested to promoting supplier compliances to labor and environmental standards. A popular strategy is auditing, although failures of auditing due to its sampling nature have been documented. In this paper, we look into another strategy—vertical integration. When a firm attains full knowledge and control of its supplier's operations, it can then ensure full compliance at this supplier. For example, Taylor Guitars, a major US-based guitar manufacturer, purchased an ebony mill in Cameroon to ensure that endangered ebony is harvested legally and sustainably. The state of the ebony harvest industry is such that, without vertical integration, full compliance is never possible. Gibson Guitar, another major guitar manufacturer which sourced ebony from third party suppliers, was raided in 2009 and again in 2011 by federal marshals, for trafficking in illegally sourced ebony wood from Madagascar and India.

One aspect of corporate social responsibility violations is that the impact is often not limited to the directly involved firms. Negative publicity around a firm may lead consumers to switch to competitors' products. We refer to such effect as *positive externalities* of violations because it may potentially *increase* competitors' sales. On the other hand, negative publicity around a firm may also tarnish the entire industry's image and *reduce* competitors' sales, leading to a *negative externality.* This is particularly prominent in industries where suppliers are highly clustered in a geographic region, and are known or expected to follow similar practices. Related to the possible negative externalities of social responsibility violations, vertical integration provides a firm with the additional option of forming a supply chain partnership with competitors and supplying responsibly sourced components to them. For instance, Taylor Guitars now supplies sustainably harvested ebony from their own mill to other guitar manufacturers, including its major competitor Gibson Guitar, while publicizing how they provide green supply to the entire guitar industry. It is thus of interest to investigate how such supply chain partnership among competitors impacts firms' efforts to ensure compliance.

Also important are the roles played by governments and non-profit organizations (NGOs). They determine the level of public scrutiny upon potential corporate social responsibility violations. It is easy to assume that tighter scrutiny better deters firms from noncompliance. However, the existence of positive or negative externalities complicate the incentives faced by firms, and we should refrain from drawing such quick conclusions. Interestingly, governments and NGOs can influence to some extent whether violations would have positive or negative externalities: when a violation report targets a general industry or region, it tends to instill negative externalities; on the flip side, when a violation report singles out specific firms where violations occurred while exonerating uninvolved firms, positive externalities is more likely to ensue. Again, it is not immediately clear whether they should induce positive or negative externalities through the way they issue reports.

In this paper, we set out to study the following research questions:

- Do governments' and NGOs' increasing efforts to expose noncompliances always incentivize firms to ensure compliances at their suppliers?
- How do the direction and the magnitude of violation externalities impact a firm's decision to ensure compliance at its supplier?
- How do the answers to the above questions change when supply chain partnership is a feasible strategy?

We employ analytical models to answer the above questions. In our base model, we consider two competing supply chains. Each supply chain consists of one supplier and one buyer, and has its own market share. We assume one of the buyers (buyer A) is capable of vertically integrating with its supplier. Once integrated, the buyer then has the option to ensure full compliance of the sourcing process at extra expense. We model the compliance decision separately from the integration decision to isolate the effect of compliance from the well-known effects of vertical integration, such as the one-time cost and the internalization of the supplier's profit margin. Unless a buyer vertically integrates with the supplier and chooses to ensure compliance, we assume that there is always a positive probability that a social responsibility violation is exposed. In the event of a exposed violation, the demand of the directly involved buyer(s) will be negatively impacted. In addition, the demand of the other buyer may be positively or negatively impacted, reflecting the possibly positive or negative violation externalities. We then extend our base model to allow an integrated firm to supply components to the competing buyer (buyer B), and become supply chain partners. When buyers are supply chain partners, we say buyer B *cross-sources* from buyer A.

When supply chain partnership (cross-sourcing) is not feasible, we find that if the probability of a violation exposure is sufficiently low, buyer A chooses to maintain conventional practice instead of ensuring compliance, which is intuitive. This observation reflects the basic tradeoff between avoiding one's own violation exposures, and reducing sourcing costs. On the other hand, with strongly negative exposure externalities, high probabilities of exposure also drive buyer A to maintain conventional practices. This is because with strongly negative externalities, even if firm A ensures compliance and eliminates its own violation exposure risk, it is still vulnerable to the negative indirect impact (externality) if a violation is exposed at buyer B, which is out of firm A's control. This vulnerability along with high probability of exposure can render buyer A's own compliance efforts futile. We also found that positive externalities may be more in line with incentivizing firms' compliance efforts than negative externalities, when supply chain partnership is not feasible.

On the other hand, when supply chain partnership is feasible, we find that higher probabilities of exposure always drive firm A to ensure compliance, because now firm A can mitigate the risk of negative indirect impact by supplying components to buyer B. We also find that cross-sourcing is more likely to occur for lower externalities, which reflects cross-sourcing's risk-mitigating value. Further contrasting the previous case, we show that when supply chain partnership is feasible, higher externalities may actually disincentivize compliance on an industry level. This is because with higher externalities, firm A benefits more from a competing firm's violation exposure, thus lacks the incentive to mitigate a competitor's violation risk.

These findings reveal insights about incentivizing firms to ensure supplier compliance via vertical integration. Our study suggests that governments and NGOs should be aware of whether supply chain partnership is likely in the targeted industry, and adjust their strategies accordingly. Without supply chain partnership, positive externalities are more favorable, and if externalities are negative, NGOs should be cautious about overly tight violation scrutiny. On the other hand, with supply chain partnership, scrutiny tends to do its job better, however NGOs should be cautious about inducing strongly positive externalities, which may discourage industry-wide compliance.