

Business sometimes takes voluntary collective actions to respond to collective responsibilities, e.g. to protect the common goods. Such firm-level collective actions usually take the form of industry self-regulation (ISR). ISR can be a substitute for government regulation, and complement previous regulatory institutions (Rees, 1997). Avoidance of ISR can activate state-regulatory mechanisms.

Government intervention in collective actions and ISR has remained a grey area in the field (King, Prado, & Rivera, 2012). On the one hand, intervention in conventional voluntary actions is discouraged, as it can ‘crowd out’ the action and harm the outcomes (Frey, 1994; Montgomery & Bean, 1999; Ostrom, 2000). Nonetheless, ISR scholars have long noticed that such interventions may occur in one way or another (Gunningham & Rees, 1997; King et al., 2012; Rees, 1988). Further, research also suggests that pure voluntary self-regulation can become a bare minimal endeavor to forestall regulation or prevent punitive responses of exogenous actors (Borck & Coglianese, 2009; King & Lenox, 2000; Rivera, 2010). Indeed, many voluntary actions have not demonstrated improved environmental performance (Arimura, Darnall, Ganguli, & Katayama, 2016).

With such challenges, efficient actions to respond to a taxing collective responsibility may hardly realize without government interventions. One instance of such collective responsibilities is managing post-consumer waste based on the circular economy. Circular economy calls for proactive actions by business to develop innovative solutions for closing the material loops (European Environment Agency, 2016; Geissdoerfer, Savaget, Bocken, & Hultink, 2017). To this end, this concept calls for both firm-level actions and policy. The marriage of the two is important for waste types such as post-consumer products, because waste management has historically evolved by government and it is not realistic to expect every individual manufacturer of consumer products to manage its own post-consumer materials individually. In recent years, a new collective responsibility has emerged that deems firms responsible for managing post-consumer waste, but transferring this task from government to business is taxing, as it calls for efficient policy and innovative business solutions to treat waste as food. However, neither government regulation nor ISR can ensure proactivity and innovation needed to return waste to resource cycles. In fact, both alternatives are likely to spur bare minimal actions by business, only enough for compliance. With such minimal actions, the disruptive transitioning to a circular economy would hardly realize.

This research is motivated by this problem and by the observation that government regulation and ISR are increasingly intertwined in recent years. We study the case of post-consumer hazardous waste management in Ontario. In our case, both voluntary actions and government regulation failed in efficient coordination of the actions. We aimed to answer the general question: *How can business and government coordinate their actions when they address shared responsibilities?*

We conducted a longitudinal inductive research and study the period between 1981 and 2018. We collected qualitative data from all involved actor groups, including firms, provincial and municipal governments, and service providers. In our case, government attempted for two decades to encourage business to contribute to waste management programs voluntarily, yet this failed in spurring and fostering consistent actions. Consistent with the literature, this resulted in

stringent government regulation. However, policy-makers failed in translating the collective problem of waste into responsibilities of every individual firm. The imposed regulatory regime not only did not spur innovation but caused strong conflicts and backlash. Over time, however, business took more active responsibility to enhance the efficiency of the program. The result was a coordinating mechanism that we call “industry hybrid regulation.” In this hybrid form, both business and government co-regulate the actions and co-enforce the regulations. The result can spur proactivity—a hard-to-achieve element in conventional regulatory regimes. We propose a simplified model of how the two sides can shape a hybrid action.

Not surprisingly, marriage of government regulation and self-regulation creates unprecedented dynamics. Grounded theorizing reveals four major tensions that characterize the hybrid model. These include *compliance vs. proactivity*, *decoupling vs. integration*, *control over means vs. control over ends*, and *granularity vs. harmonization*. We argue that these tensions are constructive and to achieve the expected outcomes, these dualities should be balanced aptly, otherwise the action may incline to one of the two pure models and fail in fostering the expected results.

We argue that the hybrid model, as a coordination mechanism, is an innovative solution to go beyond the dichotomous view to public and private policy. It can be a viable alternative in transitioning to a circular economy, where costly innovation is required to close the material loops, but business’s focus on efficiency and cost reduction may hinder innovation, translating the costs of waste management to yet another operational cost for firms. Industry hybrid regulation can utilize market mechanisms and competition and allow firms to develop competing solutions, either individually or collectively, that go beyond the status quo.