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# The Carbon Emission Seesaw Effect

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**Abstract :** The notion of carbon footprinting is ever more widespread as companies are becoming increasingly aware that tackling carbon emissions and being seen to do so is a key issue to face governments, customers and other stakeholders' pressures towards delivering environmentally friendly services and activities. In this contest, many firms are taking self-initiatives to reduce their own carbon emissions while some other are constrained to obey to different regulations/policies (e.g. carbon tax or carbon Cap) designed by higher authorities targeting a low-carbon environment. Using buyer-vendor framework, this paper provides some insights on how effective are these self-initiatives and regulatory policies when only concerning firms at the individual level and not the whole supply chain they are part of. We show that when firms individually engage in reducing their direct carbon emissions either under self-initiatives or regulatory policy, an opposite expected outcome resulting in a higher global supply chain emission can occur. This effect is referred to as the carbon seesaw effect. Moreover, we show that coordinating or centralizing the supply chain -contrary to what one may think at first- is not often the appropriate solution to get rid of this effect.

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