

## Implications of Emerging Protectionism of the U.S. on Climate Change

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International trade environment is rapidly changing: mega-regional trade negotiations such as Trans-Pacific Partnership (TPP) are underway, while at the same time the protectionism of the U.S. is rising. How such changes would influence global CO2 emissions? In our previous paper, we identified that high-wage countries' decisions to source from low-wage countries as the major contributor to the increase in global CO2 emissions associated with sourcing. Using Structural Decomposition Analysis (SDA), this paper examines the changes in global CO2 emissions due to international sourcing before and after two major events that significantly changed the patterns of international trade in recent decades: (1) China's accession to the World Trade Organization (WTO) in 2001, and (2) the global financial crisis in 2007. We then try to relate the SDA results to today's emerging international trade environment. Our SDA results clearly show that the majority of the increase in CO2 emissions due to sourcing between 2001 and 2007 can be explained by the carbon intensity disparity between high and low-wage countries, and the rapid increase in trade volume after the accession of China to WTO. This led to a dramatic increase in GHG emissions due to international sourcing. During and right after the 2007 global financial crisis, however, the volume of international trade between high and low-wage countries plunged. This phenomenon alone, however, did not reduce CO2 emissions due to sourcing. Instead, it led to an unprecedented, nearly 1 Gt CO2 emission increase by the changes in China's sourcing pattern between 2007 and 2009. This, seemingly counterintuitive result too, however, can be explained by the carbon intensity disparity between high and low-wage countries; not only high-income countries but also low-income countries had to cut their imports from the other, and low-wage countries had to reduce their imports from high-income countries more significantly during this period. As reduced imports from high-wage countries are displaced by carbon intensive domestic supplies, CO2 emissions due to the changes in sourcing patterns increased. This period coincides with the times when China enjoyed the largest international trade surplus. Our results imply that the potential reduction in trade volume due to the emerging protectionism of the U.S. does not automatically translate into a reduction in CO2 emissions from sourcing. If low-wage countries respond to high-wage countries' protectionism by replacing imports from high-wage countries by the supplies from domestic sources or from other carbon intensive countries, the global economy is likely to witness an increase—not a decrease—in CO2 emissions due to sourcing.