This paper develops a model with sequential production stages and international trade frictions that permits an analysis of how decreases in trade costs shape the interdependence between countries, with special focus on the joining and industrialization pattern of developing countries into the global value chains (GVCs). I show that in a two-country setting, a decrease in trade costs of intermediates is associated with South moving up the value chain and both North and South experiencing welfare improvement, combined with a non-linear wage response. Then I extend the model into a multi-country setting with two simple thought experiments. I show that when global trade frictions fall, South countries join supply-chain networks due to wage differentials and low trade costs; this increases the North wage but may decrease the wages of an insider South. In addition, “Factory South” are regionally clustered. The model provides a first look at GVCs from the development angle, and raises several interesting policy concerns regarding GVC governance.