In contrast with our main interest of research, which are the potential heterogenous effects of PTAs on different members for different types of agreements, this benchmark model, specifically , would provide the average “total” partial effect of PTAs on trade after accounting for lagged effects, but it cannot provide the effects for a given agreement. As such, an expansion can be implemented to capture heterogeneity in PTA effects as proposed by Baier *et al*. (Baier, Yotov, and Zylkin 2019):

Equation (2) can be implemented to account for heterogeneous effects of PTAs at the level of the specific agreement, by allowing for distinct average partial effects for each individual agreement, using superscript to index by agreement and also allowing for agreement-specific lags: .

References

Baier, Scott L., Yoto V. Yotov, and Thomas Zylkin. 2019. “On the Widely Differing Effects of Free Trade Agreements: Lessons from Twenty Years of Trade Integration.” *Journal of International Economics* 116 (January):206–26. https://doi.org/10.1016/j.jinteco.2018.11.002.