Exploring the Impact of Economic Integration Agreements Through Extreme Bounds Analysis

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What we do and what we find

- We provide an empirical strategy guided by the data to estimate the dynamics and effects of Economic Integration Agreements (EIAs) on trade flows using bilateral trade data of Feenstra et al. (2005) and EIA data of Baier and Bergstrand (2007) from 1962 to 2000.
- The strategy uses Extreme Bounds Analysis (EBA) to guide the choice of lags and leads in the effects without researcher's discretion involved.
- We find that various lags and leads of EIAs robustly correlated to trade flows and the lag and lead structure depends on the level of integration.
- We find that EIAs have the long-term effect of 64% on trade flows, and deep-integration agreements beyond the level of free trade agreements have a much higher impact of 112% on trade flows than free trade agreements do of 33%.
- The estimates of effects of EIAs obtained from EBA-based estimation tend to have a smaller contemporaneous effect and larger phased-in effects compared to previous studies relying on the subjective choices of year intervals.

Motivations

- Previous studies have relied on "year intervals" by leaving out years between observations to account for the EIA implementation time. However, the intervals have been chosen at researchers' discretion, which leads to non-robustness of estimates of the effects of EIAs.
- The starting year of empirical investigation is often chosen arbitrarily with year intervals, adding to specific findings conditioned on the subjective choices.
- We confirm that both subjective choices of year-intervals and starting year can jointly contribute to weakening the robustness of estimates and distort the dynamics of the effects of EIAs on trade flows.

Results with different starting years

	(5) 1962-1997	(6) 1963-1998	(7) 1964-1999	(8) 1965-2000
FTA_{ijt}	0.203***	0.155***	0.128***	0.180***
	(0.0378)	(0.0325)	(0.0336)	(0.0351)
FTA_{ijt-5}	[ab]0.0441	[cd]0.0828***	[ac]0.191***	[bd]0.159***
	(0.0283)	(0.0260)	(0.0282)	(0.0280)
FTA_{ijt-10}	[ef]0.0692**	[gh]0.0996***	[eg]-0.00166	[fh]-0.0155
	(0.0312)	(0.0320)	(0.0276)	(0.0307)
FTA_{ijt+5}	-0.00966	0.0189	[i]0.0551*	[i]-0.0386
	(0.0402)	(0.0435)	(0.0331)	(0.0385)
$CUCMECU_{ijt}$	[jk]0.361***	[j]0.270***	[kl]0.232***	[l]0.348***
	(0.0393)	(0.0369)	(0.0359)	(0.0418)
$CUCMECU_{ijt-5}$	0.264***	[m]0.294***	0.249***	[m]0.187***
	(0.0470)	(0.0452)	(0.0366)	(0.0316)
$CUCMECU_{ijt-10}$	0.105**	0.191***	0.167***	0.135***
	(0.0429)	(0.0415)	(0.0460)	(0.0449)
$CUCMECU_{ijt+5}$	0.0547	0.106**	0.138***	0.0652
	(0.0502)	(0.0520)	(0.0452)	(0.0469)
Long-term (FTA)	31%	40%	38%	40%
Long-term (CUCMECU)	108%	137%	119%	95%
N	44134	42699	44524	45077
R^2	0.995	0.995	0.995	0.995

Comparison with year intervals

	(1) EBA-based	(2) 1962-1997 (5-year intervals)	(3) 1962-1998 (4-year intervals)
FTA_{ijt}	0.0779***	0.201***	0.133***
	(0.0267)	(0.0374)	(0.0320)
Contemporaneous effect	**8%**	**22%**	**14%**
FTA_{ijt-1}	0.0664***		
	(0.0202)		
FTA_{ijt-2}	0.0152		
	(0.0104)		
FTA_{ijt-3}	0.0626***		
	(0.0144)		
FTA_{ijt-4}	0.0355***		0.168***
	(0.0106)		(0.0268)
FTA_{ijt-5}	0.0402**	0.0440	
	(0.0182)	(0.0284)	
Cumulative lag effect (1-5)	**23%**	**0%**	**18%**
FTA_{ijt-6}			
FTA_{ijt-7}			
FTA_{ijt-8}			-0.00683
			(0.0263)
FTA_{ijt-9}			
FTA_{ijt-10}		0.0789***	
		(0.0305)	
Cumulative lag effect (6-10)	**0%**	**8%**	**0%**
FTA_{ijt+1}			
FTA_{ijt+2}			
FTA_{ijt+3}			
FTA_{ijt+4}			0.0304
			(0.0392)
FTA_{ijt+5}			
Cumulative lead effect (1-5)	**0%**	**0%**	**0%**
Long-term (FTA)	**33%**	**32%**	**35%**

	(1) EBA-based	(2) 1962-1997 (5-year intervals)	(3) 1962-1998 (4-year intervals)
$CUCMECU_{ijt}$	0.124***	0.361***	0.225***
	(0.0228)	(0.0393)	(0.0325)
Contemporaneous effect	**13%**	**43%**	**25%**
$CUCMECU_{ijt-1}$	0.0956***		
	(0.0217)		
$CUCMECU_{ijt-2}$	0.0320***		
	(0.0122)		
$CUCMECU_{ijt-3}$	0.0808***		
	(0.0138)		
$CUCMECU_{ijt-4}$	0.0532***		0.242***
	(0.0140)		(0.0374)
$CUCMECU_{ijt-5}$	0.0450**	0.258***	
	(0.0190)	(0.0465)	
Cumulative lag effect (1-5)	**36%**	**29%**	**27%**
$CUCMECU_{ijt-6}$	0.0144		
	(0.0130)		
$CUCMECU_{ijt-7}$	0.0922***		
	(0.0289)		
$CUCMECU_{ijt-8}$	-0.00204		0.218***
	(0.0199)		(0.0474)
$CUCMECU_{ijt-9}$	0.0382***		
	(0.0128)		
$CUCMECU_{ijt-10}$	0.0769**	0.104**	
	(0.0369)	(0.0427)	
Cumulative lag effect (6-10)	**23%**	**11%**	**24%**
$CUCMECU_{ijt+1}$	0.0474***		
	(0.0120)		
$CUCMECU_{ijt+2}$	0.0143		
	(0.0181)		
$CUCMECU_{ijt+3}$			
$CUCMECU_{ijt+4}$			0.111**
			(0.0472)
$CUCMECU_{ijt+5}$	0.0663**		
	(0.0320)		
Cumulative lead effect (1-5)	**12%**	**0%**	**12%**
Long-term (CUCMECU)	**112%**	**106%**	**128%**
N	216154	44134	54413
R^2	0.994	0.995	0.995