

Economic Impacts of Investment Facilitation

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- What are the potential impacts of an Investment Facilitation Agreement?
- Challenges:
 - How does a country's investment facilitation score (the IF Index) translate into a **tangible policy instrument** for numeric modeling?
(Relative liberalization potential)
 - How much change in the instrument might we expect under the IF Agreement? What is actually **actionable**?
(Depth or scale of liberalization)
 - What is the appropriate **market structure** for modeling FDI?
Selection/variety impacts are critical for welfare analysis.
- What is the scope for third-party spillovers (US and India's free ride) versus participation and cooperation?

- The IFA policy context is well covered in the other presentations.
- Economy-wide analysis of foreign direct investment (FDI) and imperfect competition.
 - Theoretic work (beyond horizontal FDI): Markusen (1989, 2002); Ethier and Markusen (1996); Markusen and Venables (1998); Grossman, Helpman, and Szeidl (2006); and Antràs and Yeaple (2014, International Handbook Chapter).
 - General-equilibrium simulation work (marginal policy analysis): Markusen, Rutherford, and Tarr (2005); Rutherford and Tarr (2008); and Francois, Manchin, and Martin (2013, CGE Handbook Chapter).
 - Introduction of a simplified structure that tracks **Bilateral Representative Firms (BRF)** as they engage in monopolistic competition and FDI: Balistreri, Böhringer, and Rutherford (2018).

Extensions of the canonical multiregion model

- FDI formulation and calibration to augment GTAPinGAMS (Lanz and Rutherford, 2016).
- Relative IFI scores indicate benchmark distortions with dissipated rents—rectangles. Changes in AVEs are implemented as pure (TFP) cost savings for firms engaged in, or potentially engaged in, FDI.
- Extensive-margin adjustments—monopolistic competition.

A model of Bilateral Representative Firms (BRF)

- The BRF structure has its conceptual origin in the Russia WTO-accession work of Rutherford and Tarr.
- Consider the bilateral supply of firm varieties.
 - Krugman:
 N_r = the number of region- r varieties
 - Melitz:
 M_r = mass of potential varieties (entry) and
 N_{rs} = the number of varieties on the r - s bilateral link (selection).
 - Why not a bilateral Krugman model where bilateral entry replaces the selection margin in Melitz? (convexity?)
- Specific-factor payments: convexity and tractability.
- The local supply elasticity replaces the shape parameter, and Ricardian rents replace sunk-cost payments.
- The formulation naturally applies to both cross-border and FDI provision.

Scope of the model

- Four aggregate goods:
 - AGR: Agriculture (CRTS/Armington)
 - ENG: Energy (CRTS/Armington)
 - MAN: Manufacturing (FDI with IRTS/BRF.. or CRTS/Armington)
 - SRV: Services (FDI with IRTS/BRF.. or CRTS/Armington)
- Four primary factors of production aggregated from GTAP:
 - LAB: Labor (mobile)
 - CAP: Capital (mobile); plus
 - CAP: Capital (sector-specific: 5% of MAN and SRV revenue)
 - LND: Land (CET=1 across sectors)
 - RES: Resources (CET=0.001 across sectors)
- Extended country/regional coverage focused on countries engaged in *structured IFA discussions...*

Countries/Regions and Shocks:

Model countries and regions		Potential AVE change from the IFI (%) (5% or 10% of these are assumed actionable)			
		Lower bound IFI (ifa_l)	Middle range IFI (ifa_m)	Ambitious IFI (ifa_h)	Extended ambitious IFI (ifa_x)
ARG	Argentina (G20)	6.63	18.35	31.68	31.68
AUS	Australia (G20)	2.64	3.91	6.87	6.87
BRA	Brazil (G20)	6.03	16.42	20.17	20.17
CAN	Canada (G20)	2.39	5.89	8.82	8.82
CHN	China (G20)	4.85	6.34	9.45	9.45
COL	Colombia (non-G20)	6.86	16.19	24.79	24.79
IND	India (non-participant)	-	-	-	48.64
JPN	Japan (G20)	3.10	6.54	9.30	9.30
KAZ	Kazakhstan (non-G20)	5.71	10.11	21.45	21.45
KOR	Korea (G20)	2.15	2.46	4.39	4.39
MEX	Mexico (G20)	3.41	6.95	11.36	11.36
RUS	Russia (G20)	10.00	30.09	36.48	36.48
USA	USA (non-participant)	-	-	-	8.77
E27	EU without UK	4.38	13.12	17.98	17.98
HIF	High income countries	5.98	11.92	17.11	17.11
LIF	Low and Mid. income countries	16.56	37.47	56.16	56.16
ROW	Rest of World (non-participant)	-	-	-	-

Scenarios:

- `ifa_l`: Lower bound IFA: Multilateral CPTPP type reforms.
- `ifa_m`: Middle range IFA: *Model agreement* as proposed (WTO, 2018).
- `ifa_h`: Ambitious IFA: all mentioned measures in the structured discussions.
- `ifa_x`: Extended ambitious IFA: adds the US and India.

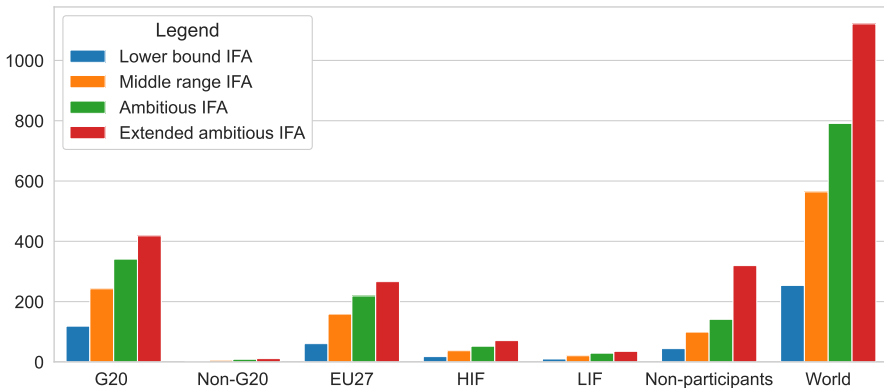
Aggregated regional welfare and GDP Impacts (%):



Welfare Impacts (%):

Model countries and regions		Welfare (EV%)			
		Lower bound IFA (ifa_l)	Middle range IFA (ifa_m)	Ambitious IFA (ifa_h)	Extended ambitious IFA (ifa_x)
ARG	Argentina (G20)	0.59	1.51	2.35	2.84
AUS	Australia (G20)	0.53	1.00	1.55	1.97
BRA	Brazil (G20)	0.70	1.77	2.27	2.69
CAN	Canada (G20)	0.38	0.87	1.27	1.76
CHN	China (G20)	1.51	2.66	3.85	4.78
COL	Colombia (non-G20)	0.74	1.70	2.53	2.96
IND	India (non-participant)	0.26	0.57	0.82	4.52
JPN	Japan (G20)	0.57	1.25	1.78	2.18
KAZ	Kazakhstan (non-G20)	0.76	1.49	2.57	3.67
KOR	Korea (G20)	0.68	1.41	2.06	2.75
MEX	Mexico (G20)	0.35	0.72	1.08	1.50
RUS	Russia (G20)	1.16	3.23	4.00	4.31
USA	USA (non-participant)	0.20	0.47	0.66	1.60
E27	EU without UK	0.69	1.80	2.48	3.01
HIF	High income countries	0.60	1.26	1.75	2.39
LIF	Low and Mid. income countries	0.99	2.07	2.91	3.53
ROW	Rest of the world (non-participant)	0.28	0.60	0.86	1.17

Welfare Impacts (\$B):



Sensitivity to actionable scale (Welfare EV%):

	ifa_l		ifa_m		ifa_h		ifa_x	
	5%	10%	5%	10%	5%	10%	5%	10%
ARG	0.59	1.18	1.51	2.91	2.35	4.10	2.84	5.12
AUS	0.53	1.06	1.00	2.06	1.55	3.19	1.97	4.07
BRA	0.70	1.39	1.77	3.46	2.27	4.44	2.69	5.35
CAN	0.38	0.75	0.87	1.77	1.27	2.60	1.76	3.64
CHN	1.51	3.03	2.66	5.42	3.85	7.92	4.78	9.84
COL	0.74	1.48	1.70	3.36	2.53	4.93	2.96	5.84
IND	0.26	0.52	0.57	1.20	0.82	1.74	4.52	7.34
JPN	0.57	1.15	1.25	2.55	1.78	3.65	2.18	4.52
KAZ	0.76	1.52	1.49	2.97	2.57	5.04	3.67	7.22
KOR	0.68	1.38	1.41	2.88	2.06	4.23	2.75	5.56
MEX	0.35	0.70	0.72	1.45	1.08	2.20	1.50	3.08
RUS	1.16	2.30	3.23	6.19	4.00	7.56	4.31	8.28
USA	0.20	0.41	0.47	0.97	0.66	1.41	1.60	3.31
E27	0.69	1.37	1.80	3.54	2.48	4.85	3.01	6.04
HIF	0.60	1.14	1.26	2.46	1.75	3.47	2.39	4.78
LIF	0.99	1.91	2.07	3.68	2.91	4.63	3.53	5.81
ROW	0.28	0.56	0.60	1.23	0.86	1.78	1.17	2.44

Sensitivity to structure and response (Welfare EV%):

Middle Range Scenario (ifa_m):

	$\eta = 1$		$\eta = 2$	
	ARM	BRF	ARM	BRF
G20	1.34	1.84	1.36	1.88
Non-G20	1.15	1.63	1.29	1.88
EU27	1.24	1.80	1.45	2.12
HIF	0.94	1.26	0.92	1.26
LIF	1.60	2.07	1.93	2.72
Non-participants	0.38	0.51	0.25	0.32
World	0.89	1.24	0.89	1.24

- New scenarios as they are negotiated (Spring 2021)
 - Binding IFA: includes only binding commitments and covers 25% of all measures included in the IFI
 - Best endeavour IFA: includes only non-binding commitments and covers 19% of all measures in the IFI
 - Binding & Best endeavour IFA: includes both binding and non-binding commitments and covers 43% of all measures in the IFI
- GTAP10a (versus GTAP10)
- Add three regional aggregates of Low Income Countries (LIF): Eurasia, Americas, ME+Africa
- Updates on the IFI as it is refined (Zoryana's earlier presentation)
- Updates to AVE methodology (Eddy's earlier presentation)

Welfare Impacts (%):

Countries and regions		Lower bound IFA	Middle range IFA	Ambitious IFA	Extended ambitious IFA	Binding Measures	Best Endeavour	BM+BE
ARG	Argentina							
AUS	Australia							
BRA	Brazil							
CAN	Canada							
CHN	China (incl. Hong Kong)							
COL	Colombia							
IND	India							
JPN	Japan							
KAZ	Kazakhstan							
KOR	Korea							
MEX	Mexico							
RUS	Russia							
USA	USA							
E27	EU without UK							
HIC	High income countries							
LAS	Low and mid income (Eurasia)							
LAM	Low and mid income (Americas)							
LAF	Low and mid income (Africa and Mideast)							
ROW	Rest of the world							

Conclusion

- We leverage the IFI work to conduct a quantitative welfare analysis of a potential IFA.
- Welfare gains are significant (avg. 1%-2% for ifa_m), but depend critically on how much of the measured distortions are *actionable*. (Current analysis adopts a conservative assumption: 5% actionable).
- Participants, especially low income participants, have the most to gain.
- Noteable spillovers: free ride for the US (+0.66% for ifa_h) and India (+0.82 for ifa_h).
- But India has a lot to gain from participation (+4.52% for ifa_x).
- Quick and robust numeric solutions under BRF structure.