Economic Impacts of a Potential Investment Facilitation Agreement

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We quantify the impacts of a potential Investment Facilitation Agreement (IFA). The analysis is based on a multi-region general equilibrium simulation model. The model extends the basic gtapingams *trade structure to include entry of bilateral representative firms. The model is calibrated to GTAP 10 data characterizing trade and the social accounts. Consideration is given to Foreign Direct Investment (FDI) and monopolistic competition. The model shows empirically relevant gains associated with removal of investment barriers. Key drivers of the gains are identified in sensitivity analysis. We contribute to the relatively scarce research on investment facilitation and provide policymakers with information on the potential effects of an IFA.*

JEL codes: F11, F12, F17

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1. Introduction

After the successful adoption of the Trade Facilitation Agreement (TFA) by the World Trade Organization (WTO) in 2014, investment facilitation has been gaining in popularity in recent years. The idea of an Investment Facilitation Agreement (IFA) was suggested by a group of experts in 2015 (Sauvant and Hamdani, 2015). Since then, it has been pursued in the G20 and discussed among members of the WTO. Finally, at the 11th Ministerial Conference of the WTO in Buenos Aires (December 2017) the Joint Ministerial Statement on Investment Facilitation for Development called for the start of "structured discussions with the aim of developing a multilateral framework on investment facilitation." So far, several rounds of discussions have taken place to lay the foundation for actual negotiations towards an IFA.

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In this paper we use an economic model of global interactions to quantify the value of an IFA. The model is calibrated to GTAP 10 data characterizing trade and the social accounts. We consider the IFA scenarios developed by Berger, Dadkhah, and Olekseyuk (2019b). The investment facilitation index developed by Berger, Dadkhah, and Olekseyuk (2019a) informs the quantitative level of the liberalization. The absolute scale of the liberalization is uncertain, but we use the investment facilitation index to establish a sound measure of the relative shocks across regions. The primary measure of the value of an IFA to different regions is reported from the model in terms of changes in economic welfare.[1] We demonstrate the model's operation as a tool for informing the policy debate, but we also warn that the model is sensitive to a number of ad hoc assumptions. A continuation of the empirical research necessary to inform these assumptions is warranted.

Quantifying the impacts of potential IFAs is, at the outset, challenging. Despite the dynamic debate on investment facilitation, there is still no clear definition of the concept. In general, investment facilitation covers a wide range of areas with the focus on allowing investment to flow efficiently and for the greatest benefit. Transparency, simplicity and predictability are among its most important principles. Moreover, investment facilitation refers to actions taken by governments designed to attract foreign investment and maximize the effectiveness and efficiency of its administration through all stages of the investment cycle. It does not, however, incorporate investment liberalization and protection, or investor-state dispute settlement. These issues remain a subject of bilateral and regional investment agreements (Berger, Gsell, and Olekseyuk, 2019).

To the best of our knowledge, there are no empirical studies that quantify the potential effects of the specific provisions of an IFA. Thus, our work provides results on the economic impact of a potential IFA on the most important negotiating countries including Brazil, Colombia, Argentina, China, Russia, Kazakhstan, Australia, Canada, Japan, South Korea, Mexico and EU-28. Other countries involved in the structured discussions within the WTO are aggregated into high-income (HIF), low-income (LIF) countries. Apart from countries participating in the structured discussions, we also include the USA and India, which signalled their opposition to multilateral talks on investment facilitation during the German G20 presidency in 2017. The USA represents a major player covering around 25% of the inward and outward FDI stock worldwide. At this level of geographic resolution, our country sample covers around 90% of world FDI stocks with the rest of countries aggregated into the rest of the world (ROW) aggregate region. Appendix A includes a table with the modeled regions and a mapping of the component GTAP regions.

This paper proceeds as follows. In Section 2 we outline the structural exten-

[1] Economic welfare is measured as *equivalent variation* in private consumption of the representative regional household.

sions of the canonical GTAPINGAMS model of global trade. In Section 3 we outline the specific model scenarios and implementation of the IFI based shocks. In section 4 we enumerate a set of critical ad hoc assumptions that need to be informed through further empirical analysis. In Section 5 we present a set of results, and in Section 6 we provide concluding comments and highlight follow-up research needed to increase our confidence in the quantitative measures of the value of investment facilitation.

2. Model Formulation

To quantify the impact of potential IFA frameworks, we develop an innovative multi-region general equilibrium simulation model. The model extends the basic GTAPINGAMS structure presented by Lanz and Rutherford (2016) calibrated to GTAP 10 (early-release) data characterizing bilateral trade and the social accounts. Extensions include a consideration of FDI and imperfect competition in a multi-region setting following the model developed by Balistreri, Tarr, and Yonezawa (2015). Unlike that study, however, our model includes the ability to consider FDI in goods (in addition to business services) in the analysis of an IFA.

Given consistency of all other features with the standard GTAPINGAMS formulation we only document the extensions to the trade and FDI structures in this paper. The reader is referred to Lanz and Rutherford (2016) for a complete documentation of the basic model with Armington trade and no FDI. We proceed in this section by describing the two model structures explored: **(ARM)** the perfect-competition Armington structure; and **(BRF)** a monopolistic competition structure of bilateral representative firms. The first application of the bilateral representative firms structure in a multi-region trade model is provided by Balistreri, Böhringer, and Rutherford (2018). In that study the authors do not consider FDI.

2.1 Armington Structure **(ARM)**

In the standard GTAPINGAMS model international trade is formulated under the Armington assumption that goods from different regions are imperfect substitutes. In each region there is a Constant-Elasticity-of-Substitution (CES) technology that combines the regional varieties into a composite that is available for use as an intermediate input or for final demand. Let A_{is} denote the quantity of this composite, and let x_{irs} be the quantity of imports from region r (if $r = s$ then we have domestic consumption). The CES technology is presented as follows:

$$A_{is} = \left[\sum_r \alpha_{irs} x_{irs}^{(\sigma_i - 1)/\sigma_i} \right]^{\sigma_i/(\sigma_i - 1)}, \tag{1}$$

where the α_{irs} are distribution weights and σ_i is the elasticity of substitution. To facilitate the exposition from this point forward we will simplify the expressions by suppressing the index (i) on the good or service, but it is noted that each of the

following expressions is established for each good or service.

As a first extension consider that the composite A_s might include varieties provided by multinationals with a physical presence in region s. Denote the provision of these FDI firms as $\tilde{x}_{rs}$ where region r is the source of the FDI and s is the host region. We expand the technology for aggregating the components to include these FDI varieties:

$$A_s = \left[\sum_r \alpha_{rs} x_{rs}^{(\sigma-1)/\sigma} + \sum_r \beta_{rs} \tilde{x}_{rs}^{(\sigma-1)/\sigma} \right]^{\sigma/(\sigma-1)}. \tag{2}$$

The new parameter β_{rs} is the CES-distribution weight on FDI varieties (where $\beta_{ss} = 0$).

Agents in region s will minimize the cost of any level of A_s by choosing the x_{rs} and the $\tilde{x}_{rs}$ optimally given the prices. In the Armington formulation we have perfect competition with marginal cost pricing. Let c_{rs} indicate the marginal cost in region r plus any distortions and transport markups related to shipping from r to s; and let $\tilde{c}_{rs}$ indicate the marginal cost of a multinational from region r hosted in region s. Given these prices (arrayed in the vector $\boldsymbol{c}$) both the optimization and the technology are conveniently represented by the *dual* unit cost function:

$$P_s = \left[\sum_r \lambda_{rs} c_{rs}^{(1-\sigma)} + \sum_r \tilde{\lambda}_{rs} \tilde{c}_{rs}^{(1-\sigma)} \right]^{1/(1-\sigma)}, \tag{3}$$

where the λ represent the dual CES weights (e.g., $\lambda_{rs} = \alpha_{rs}^{\sigma}$). P_s is the price of a unit of the good available in region s for intermediate use or final demand. Note that because (3) embeds optimization Shephard's Lemma can be used to recover the conditional bilateral and FDI demand functions:

$$x_{rs}(\boldsymbol{c}, A_s) = A_s \frac{\partial P_s(\boldsymbol{c})}{\partial c_{rs}};$$

$$\tilde{x}_{rs}(\boldsymbol{c}, A_s) = A_s \frac{\partial P_s(\boldsymbol{c})}{\partial \tilde{c}_{rs}}.$$

At this point we note that c_{rs} and $\tilde{c}_{rs}$ are themselves given by a *dual* nested CES technology which is a function of factor and intermediate prices. This is outlined in the GTAPINGAMS documentation (Lanz and Rutherford, 2016). We adjust this technology, however, by assuming that some of the capital earnings for potential monopolistically competitive sectors is earned by a bilateral specific factor. That is, there is a primary factor that is fixed in supply and is specific to each bilateral supply link. These specific factors earns rents on their respective bilateral link. One might think of this as a blueprint or plan for a given product. For example, an Australian winery might produce a specific type of wine for the U.S. market, or a European Bank located in Kenya may provide special accounts that comply with Kenyan regulations. These bilateral specific plans will earn specific rents.

This detail would normally not be included in a large-scale general equilibrium simulation model, but it is necessary in our application of monopolistic competition with free entry of bilateral representative firms (which is described below).[2]

2.2 Monopolistic Competition with Bilateral Representative Firms **(BRF)**

Contemporary trade models with monopolistic competition usually adopt either a Krugman (1980) style homogeneous-firms structure or a Melitz (2003) style heterogeneous-firms structure. We consider a hybrid model that is computationally tractable like the relatively simple Krugman model, but includes bilateral selection of firms and rents associated with each market like the Melitz formulation. Each good or service that is modeled under monopolistic competition is assumed to be provided by a small firm selling a unique variety.

We characterize supply on a given r to s bilateral trade link as provided by a representative firm with marginal cost c_{rs}. Again, c_{rs} includes a rental payment to a r to s specific factor. Similarly a multinational from region r operating in s has a marginal cost $\tilde{c}_{rs}$, which includes a rental payment to a specific factor. Focusing on the cross-border firms we develop the theory and then add back in the FDI firms. With a CES demand system over firm-level varieties (q_{rs}), and assuming that firms are small, the demand elasticity for the firm's output is σ, the constant elasticity of substitution. The firm maximizes profits by setting its price (p_{rs}) fixed markup over marginal cost:

$$p_{rs} = \frac{c_{rs}}{1 - 1/\sigma} \tag{4}$$

These firms earn operating profits equal to revenue divided by the elasticity:

$$\pi_{rs} = \frac{p_{rs} q_{rs}}{\sigma}$$

. Now consider that firms will enter the bilateral market up to the point that operating profits exactly cover the nominal fixed entry cost. The free-entry condition is given by

$$c_{rs} f_{rs} = \pi_{rs}, \tag{5}$$

where f_{rs} is the fixed cost in real units of the composite input (with cost c_{rs}). Note that this entry condition is bilateral and therefore different from a standard Krugman formulation. In a standard Krugman formulation the fixed cost would be specific to region r and profits would be summed over all s-markets. Relative to a standard Krugman model the BRF formulation generates substantially more

[2] Under the BRF formulation the model lacks convexity in the absents of bilateral specific factors. That is, without the specific factor a slight change in trade costs will lead to supply on only the most profitable trade link (just like a homogeneous goods model). To offer a fair comparison across structures we include the bilateral specific factor in all formulations (even if it is not necessary for numeric convexity).

extensive-margin response (like the selection effect in Melitz). In addition, because there is a specific factor changes in bilateral trade costs substantially impact the rental payments contributing to income responses. Considering the full set of payments for fixed and variable inputs to the firm we have the following, which represents demand for the composite input denoted x_{rs} to parallel the Armington demands above:

$$x_{rs} = N_{rs}\left(f_{rs} + q_{rs}\right), \tag{6}$$

where N_{rs} is the measure of the number of firms supplying on the $r-s$ bilateral link.

Bringing FDI provision back into the theory we show the full unit cost of the good in region s using the dual representation of the CES technology under optimization:

$$P_s = \left[\sum_r \lambda_{rs} N_{rs} c_{rs}^{(1-\sigma)} + \sum_r \tilde{\lambda}_{rs} \tilde{N}_{rs} \tilde{c}_{rs}^{(1-\sigma)}\right]^{1/(1-\sigma)}, \tag{7}$$

Again this is somewhat different than a standard Krugman formulation where the number of firms from region r would be the same across the s markets. For exposition of the theory we have suppressed the trade distortions. These would include tariffs and non-tariff barriers that drive a wedge between the price received by the exporting agent and the price paid by the importing agent. For a more complete development of the standard Krugman and Melitz models with policy instruments included see Balistreri and Rutherford (2013).

3. Investment Facilitation Scenarios

Following the detailed work on quantification of the current practice in investment facilitation as well as expected reforms due to potential IFA by Berger, Dadkhah, and Olekseyuk (2019a,b), we use the country-level reductions in the Investment Facilitation Index (IFI) induced by different frameworks of the potential IFA (Berger, Dadkhah, and Olekseyuk, 2019b) as an assumption for the relative reductions in Non-Tariff Barriers (NTBs) incorporated in the model. Using this at an assumed scale we are able to simulate several scenarios representing different depth and country coverage of the potential multilateral investment facilitation deal:

1) Lower bound IFA (**ifa_l**): Investment facilitation measures are already to some extent included in different deep and comprehensive free trade agreements (e.g., CETA, CPTPP, NAFTA) negotiated by countries participating in the structured discussions. For the lower-bound scenario we assume that investment facilitation commitments covered by these regional treaties are multilateralized. A lower bound IFA thus covers only this limited number of measures included in the IFI for all participants of

the structured discussions.

2) Middle range IFA (**ifa_m**): We assume that commitments under the IFA follow closely Brazil's circulated proposal for a possible WTO agreement (the "Model Agreement", see WTO, 2018a), which covers around half of investment facilitation measures included in the IFI. We apply this policy shock to all included countries participating in the structured discussions.
3) Ambitious IFA (**ifa_h**): Given all submitted proposals so far (by Brazil, Argentina, Russia, China, Kazakhstan, MIKTA, FIFD, see WTO, 2017a,b,c,d,e, 2018a,b), we assume that commitments under the IFA include all mentioned investment facilitation measures, which strongly increases the coverage of measures included in the IFI and reflects a much deeper reform potential.
4) IFA including USA and India (**ifa_x**): Given that India is rethinking its opposition against multilateral talks on investment facilitation, we include this country into the group of potential members. To illustrate the potential gains of the US as a major investor worldwide, we also extend our assumptions for reductions in investment barriers to this country.

4. Critical Ad Hoc Assumptions

Computation of innovative models exploring new research questions like the impact of an investment facilitation agreement require a substantial collection of data inputs. As this is a preliminary attempt at quantification we use a relatively course commodity aggregation of the GTAP data and make ad hoc assumptions that will need to be refined in future research.

For the current set of results we aggregate the GTAP accounts to include only four sectors: **AGR** Agriculture; **MAN** Manufactured goods; **SER** Services; and **ENR** Energy. The limited sectoral dimensionality allows us to explore diagnostics and alternative formulations in quick and controled experiments. The **AGR** and **ENR** sectors are always modeled as perfectly competitive with constant returns to scale. The trade structure is always consistent with the Armington description in section 2.1 without FDI. When the structure is set to BRF the **MAN** sector is modeled as a monopolistically competitive sector with no FDI; and when the structure is set to BRF the **SER** sector is modeled as monopolistically competitive with FDI. While the model has the flexibility to include FDI and monopolistic competititon in any sector we chose this minimal example as a proof of concept. Moving the research further the GTAP accounts will need to be disaggregated and FDI in goods will need to be considered, but this also increases the data requirement for the BRF calibration.

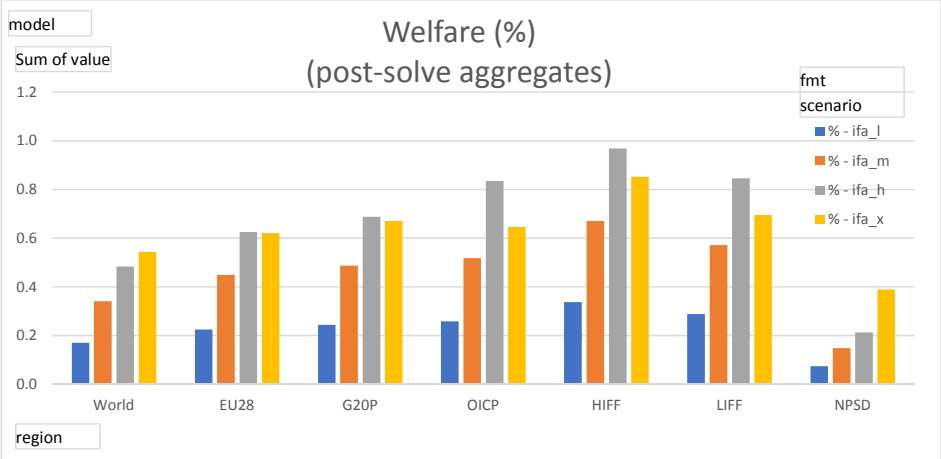
The following are a set of critical assumptions made for the BRF calibration. These should be viewed as placeholder necessary to get the model operational. Model results are conditional on (and sensitive to) these assumptions, and as of yet they are not well informed by any data.

1) Elasticity of substitution ($\sigma = 3$): the elasticity of substitution across BRF varieties indicates the marginal value of a new variety. The lower is the elasticity the more valueable is a new variety. Using the value adopted by Balistreri, Tarr, and Yonezawa (2015) for their FDI sectors we assume an elasticity of three. This is generally on the lower end of many estimates, and so the expectation is that welfare impacts might be mitigated as the estimate is refined.
2) The local supply elasticty of monopolistically competitive inputs ($\eta = 1$): the supply elasticity indicates the degree to which firms can substitute away from the bilateral specific factor. The higher the elasticity the more responsive output is, but the less revenues are allocated to the specific-factor rents. The model is sensitive to this elasticity with larger welfare gains for liberalizing regions under higher elasticities.
3) For the **SER** sector we assume that 30% of any region's domestic provision is by a multinational hosted in the domestic country. This fraction should be region specific and informed by some data. Our prior is that for more developed regions the fraction is too high, and potentially too low for developing regions. The portion of multinational provision allocated to each home region is allocated according to the shares of cross-border trade in services.
4) For the **SER** sector we assume that 40% of observed cross-border provision is a specialized input for the associated multinational. That is, for example an EU financial firm operating in Kenya will have specialized cross-border imports of financial services from the EU that are uses to facilitate FDI supply. The specialized-input formulation is developed by Markusen, Rutherford, and Tarr (2005). While this parameter is necessary for an operational model measurment is difficult. Some limited information may be available from proprietory firm-level data.
5) We make a scalar adjustment to the Investment Facilitation Index (IFI) of 0.02 to arrive at an actionable ad valorem model shock related to the IFA. This scalar adjustment, by design, preserves the relative variation in the IFI across regions, but its level is uncertain. Conservatively, we consider at least 2% of the IFI as actionable under the adoption of an IFA. This adjustment should be revisited and perhaps validated against previous negotiated commitments to investment facilitation.

5. Results

Conditional on the key assumptions the model is operational as a tool for analyzing the IFA scenarios. Figure 1 reports the aggregated welfare impact of the four scenarios. For the world as an aggregate welfare increases by over 0.3% un-

Figure 1. Aggregated regional welfare impacts (% Equivalent Variation)



der the middle-range IFA scenario (ifa_m).[3] The benefits of the ifa_m scenario are concentrated among the regions participating in the structured discussions with the highest proportional increase in welfare realized by the higher income countries (HIFF). Lower income countries (LIFF) also show substantial welfare benefits of over half a percent. The other participating regions generally show average welfare increases of over 0.4%. There are spillovers from the ifa_m scenario that accrue to regions not participating in the structured discussions (NPSD={USA, IND, ROW}) with average welfare gains in the 0.15% range. One thing that is interesting is that the spillovers do not go in the other direction. Under the ifa_x scenario adding the USA and India to teh IFA does not generate substantial benefits (relative to the ifa_a scenario) for those countries already participating in the discussions.

Table 1 reports the decomposition of the regional impacts for the individual modeled regions. Of particular interest is the fact that India has a lot to gain from participation. India goes from spillover gains of 0.24% under the ifa_a scenario to 0.95% gains under the ifa_x scenario. The USA, in contrast, does show dramatic gains from participation (only moving to a 0.39% gain under the ifa_x scenario). Among the participants Russia emerges as a big winner with gains of over 1% for the ifa_m and ifa_a scenarios.

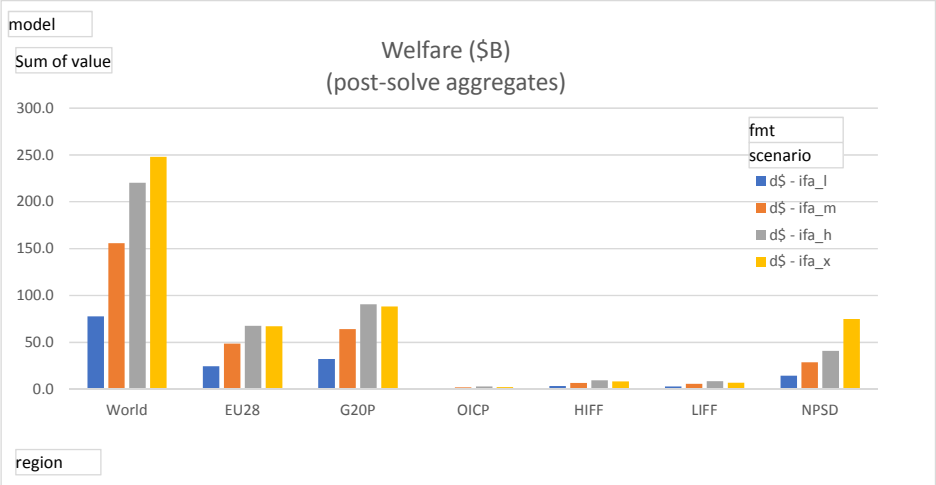
The reports of the percentage welfare changes are somewhat lower for larger developed regions (like the EU). This masks the value of an IFA in terms of dollars of benefits that accrue to these higher income regions. Figure 2 reports the welfare

[3] Global welfare is measured as the sum of equivalent variation across regions relative to global benchmark private consuption. This is consistent with a *Bentham* global welfare function, in which each dollar of welfare change is weighted equally across regions. Thus, no consideration of inequality aversion is considered.

Table 1. Regional welfare impacts (% Equivalent Variation)

	Sum of value	Column Labels			
	%				
	Row Labels	ifa_l	ifa_m	ifa_h	ifa_x
EU28	**E28**	0.23	0.45	0.63	0.62
G20P	**arg**	0.22	0.43	0.68	0.55
G20P	**aus**	0.16	0.32	0.49	0.45
G20P	**bra**	0.23	0.46	0.60	0.58
G20P	**can**	0.13	0.27	0.39	0.41
G20P	**chn**	0.31	0.62	0.91	0.90
G20P	**jpn**	0.17	0.34	0.49	0.48
G20P	**kor**	0.21	0.42	0.60	0.64
G20P	**mex**	0.11	0.21	0.32	0.34
G20P	**rus**	0.51	1.00	1.26	1.16
OICP	**col**	0.25	0.51	0.76	0.63
OICP	**kaz**	0.27	0.53	0.96	0.67
HIFF	**HIF**	0.34	0.67	0.97	0.85
LIFF	**LIF**	0.29	0.57	0.85	0.70
NPSD	**usa**	0.07	0.14	0.20	0.39
NPSD	**ind**	0.08	0.17	0.24	0.95
NPSD	**ROW**	0.08	0.17	0.24	0.26

Figure 2. Aggregated regional welfare impacts ($B)



increases in billions of dollars. We see that global welfare increase by more that $150 billion under the middle scenario (ifa_m) with substantial benefits accruing to the EU and other participating G20 countries. Under the ifa_m scenario the EU accrues one third of the total global benefits (at a gain of $50 billion).

We proceed with a couple of exercises that illustrate the model's sensitive to our structural and parametric assumptions. In Figure 2 we consider the percentage welfare impact of the middle scenario (ifa_m) under the central BRF monopolistic competition structure and under the full Armington treatment (under Armington the MAN and SER sectors are treated as perfectly competitive). The BRF structure does indicate substantially larger gains from the IFA. Across all regions there are larger gains under the BRF structure, and even larger spillovers for those non-participating countries. On average the gains are about 40% higher under BRF monopolistic competition. Additional diagnostics are warrented to identify the sources of these larger gains. Our experience is that most of the added gains can be attributed to new variety gains. These extensive-margin gains are not available under the Armington formulation.

We emphasize that parametric sensitivity is also important. In Figure 3 we provide one example. Doubling the local supply elasticity ($\eta = 2$) increases the gains from the IFA for participants, but mitigates the spillovers to non-participants. This is logically consistent. With a higher elasticity the participants can take advantage of the liberalization, but also with a higher elasticity it is easier for non-participants to be squeezed out of the market. Thus, competitive effects are exacerbated under higher elasticities. Additional sensitivity analysis is warrented if the results are to be useful in informing policy makers. Our point here is to illustrate that the model is operational and responsive to the underlying assumptions.

Table 2. Sensitivity across structural assumptions
(% Equivalent Variation)

scenario	ifa_m
fmt	%

Sum of value	Column Labels	
Row Labels	arm	brf
World	0.24	0.34
EU28	0.30	0.45
G20P	0.33	0.49
OICP	0.35	0.52
HIFF	0.45	0.67
LIFF	0.41	0.57
NPSD	0.11	0.15

6. Conclusion

We show empirically relevant gains associated with the removal of investment barriers. The class of models employed suggest that the gains exceed those available through traditional tariff liberalization. Our experience with these models suggests sensitivity of the gains, which can be traced to specific drivers. Fundamentally the size of the original distortions and the ability of agents to capture the rents associated with these distortions indicate a first-order quantification of the gains. Love-of-variety externalities (extensive margin gains) are also important for attributing the gains associated with FDI in the context of imperfect competition. In addition, variation in response parameters (elasticities) affect results.

The preliminary analysis presented in this paper contributes to the very scarce research on investment facilitation and has the potential to provide policymakers with important information on the effects of the multilateral agreement, giving a better idea about different underlying frameworks and their effects on countries' economic performance.

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Table 3. Sensitivity across structural and parametric assumptions
(% Equivalent Variation under $\eta = 2$)

scenario	ifa_m
fmt	%

Sum of value	**Column Labels**	
Row Labels	**arm**	**brf**
World	0.23	0.34
EU28	0.34	0.51
G20P	0.34	0.50
OICP	0.41	0.61
HIFF	0.57	0.87
LIFF	0.50	0.74
NPSD	0.07	0.09

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Appendix A.

Table A.1. GTAP Regional Aggregation

Model countries and regions		Included countries	
1	EU28	1	Austria
		2	Belgium
		3	Bulgaria
		4	Croatia
		5	Cyprus
		6	Czech Republic
		7	Denmark
		8	Estonia
		9	Finland
		10	France
		11	Germany
		12	Greece
		13	Hungary
		14	Ireland
		15	Italy
		16	Latvia
		17	Lithuania
		18	Luxembourg
		19	Malta
		20	Netherlands
		21	Poland
		22	Portugal
		23	Romania
		24	Slovak Republic
		25	Slovenia
		26	Spain
		27	Sweden
		28	United Kingdom
Individual G20 countries participating in the Structured Discussions			
2	ARG	29	Argentina
3	AUS	30	Australia
4	BRA	31	Brazil
5	CAN	32	Canada
6	CHN	33	China and Hong Kong SAR
7	JPN	34	Japan
8	KOR	35	Korea, Rep.
9	MEX	36	Mexico
10	RUS	37	Russian Federation
Important non-G20 participants of Structured Discussions			
11	COL	38	Colombia
12	KAZ	39	Kazakhstan
Other non-G20 participants of Structured Discussions			
13	HIF (Higher income countries in Structured Discussions)[a]	40	Chile
		41	Kuwait
		42	New Zealand
		43	Panama
		44	Qatar
		45	Singapore
		46	Switzerland
		47	Uruguay
14	LIF (Lower income countries in Structured Discussions)[b]	48	Benin
		49	Guinea
		50	Togo
		51	Cambodia
		52	Costa Rica
		53	El Salvador
		54	Guatemala
		55	Honduras
		56	Kyrgyz Republic
		57	Lao PDR
		58	Malaysia
		59	Moldova
		60	Nicaragua
		61	Nigeria
		62	Pakistan
		63	Paraguay
Important non-participants of Structured Discussions and G-20 countries			
15	USA	64	USA
16	IND	65	India
17	ROW		Rest of the world

Notes:
[a] Macao SAR is a non-G20 high income country that takes part in the Structured Discussions, however, it is not included in this region as it is not separately available in the GTAP database. This country is represented in the ROW region.
[b] This region does not include the following participants of the Structured Discussions: Liberia, Tajikistan, Montenegro, Myanmar. These countries are not separately available in the GTAP database and constitute a part of the ROW region.