

# THE ECONOMIC STRUCTURE OF INTERNATIONAL TRADE-IN-SERVICES AGREEMENTS

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- There is now an established literature on the economics of international trade agreements
  - successful in illuminated many features of real-world trade agreements
  - focused almost entirely on trade in goods
  - a focus that made sense when most services were non-traded
- But the importance of trade in services has grown rapidly over the past several decades
  - services now at the top of the trade liberalization agenda
- The need for the literature to consider trade-in-services agreements has become more pressing
- In this paper we take a first step in filling this lacuna

# Introduction

- WTO agreements cover both goods trade (GATT) and trade in services (GATS)
- There are striking differences between GATT and GATS
- The broad structure of GATT can be understood from the perspective of the ToT theory
- We show that the broad structure of GATS can also be understood through the lens of the ToT theory
  - but only if this theory is augmented with a set of restrictions on the policies available to govts, reflecting salient features of services trade
- This is the main positive message of our paper

# Introduction

- The GATT/WTO has been highly successful in liberalizing goods trade; GATS has been largely unsuccessful in liberalizing services trade
- What explains this difference in success?
- A potential reason: the distinct nature of integration that each agreement has attempted
- Both agreements seek to expand market access,
  - but GATT was designed for “shallow integration”
  - while GATS reflects an orientation towards “deep integration”
- $\implies$  GATS raises significant challenges for negotiations seeking to expand market access that do not arise with GATT

- Our augmented ToT model
  - can help interpret the deep-integration focus of GATS
  - and clarify the underlying problems that a trade-in-services agreement must solve
- An understanding of the underlying problems can inform the consideration of alternative design approaches to solve the problems
- We find that a shallow-integration approach more in line with that taken by GATT might be possible in a trade-in-services agreement
  - thereby sidestepping some of the most contentious issues that may have stymied negotiation progress thus far
- This is the main normative message of our paper

# Institutional Background: GATT vs GATS

- *GATT* market access liberalization: tariffication & shallow integration
  - concentrate protective measures in the form of tariffs by agreeing to certain across-the-board prohibitions
  - negotiate detailed product-by-product tariff commitments
  - market access implications of agreed tariff commitments secured by MFN/NT/TBT/SPS and nonviolation (NV) clause
- *GATS* market access liberalization: deep integration
  - primarily “Mode 3” services: commercial presence in importing nation by a foreign service provider
  - sector-by-sector negotiations over behind-the-border measures: relaxation of quantitative/ownership/licensing restrictions, even NT
  - market access implications of agreed commitments secured by MFN and NV clause, and NT where NT agreed

# A Benchmark Model of Services Trade

- A simple partial equilibrium model of trade between two countries
- “Mode 3” service trade
  - service must be produced where it is consumed
  - $\implies$  Import tariff/export tax collected at the border not an option
- A market imperfection
  - consumption generates a local “eye sore” negative externality
  - $\implies$  Efficiency role for regulatory standards
  - domestic gov imposes a regulatory standard as a condition of entry,  $r$  for domestic and  $\rho$  for foreign service providers
  - per-unit externality levels  $\theta(r)$  and  $\theta(\rho)$ ,  $\theta$  decreasing and convex
- Demanded only in the domestic country
  - $D = \alpha - P$ ,  $P$  the consumer price of the service in the domestic market

# Benchmark Model

- Domestic firms: per-unit cost of compliance/conformity-assessment to meet standard  $s$  is  $\kappa(s)$  where  $\kappa$  increasing/convex in  $s$
- Foreign firms: domestic gov can invest  $I$  at cost  $c \cdot I$  to bring foreign-firm cost of meeting standard  $s$  down to domestic-firm level
  - per-unit cost to meet standard  $s$  is  $\kappa^*(s, I) \equiv \kappa(s) + \lambda(I)$ , where  $\lambda$  is decreasing/convex in  $I$  with  $\lambda(0) > 0$  and  $\lambda(\infty) \geq 0$
  - separability of  $\kappa^*(s, I)$  in  $s$  and  $I$  ensures NT consistent with efficiency
- Supply of domestic and foreign service providers given respectively by

$$S_d = q_d - \kappa(r) \text{ for } q_d \geq \kappa(r)$$

$$S_f = q_f - \kappa^*(\rho, I) \text{ for } q_f \geq \kappa^*(\rho, I)$$

with  $q_d, q_f$  the producer prices of the service in the domestic market

- Note: these are “like products” in the domestic market



# Benchmark Model

- In Benchmark Model an expansive list of non-tariff fiscal instruments (in specific terms, tax if positive, subsidy if negative)
  - a nondiscriminatory sales tax  $t$  imposed by the domestic gov
  - a discriminatory sales tax or surcharge  $t_f$  levied on foreign service providers by the domestic gov
  - a discriminatory sales tax or surcharge  $t_f^*$  levied on foreign service providers by the foreign gov
  - later impose more realistic restrictions on instruments as a way to understand reasons for differences between GATT and GATS
- With all taxes set at non-prohibitive levels, the pricing relationships:

$$q_d + t = P = q_f + t_f^* + t + t_f$$

- Efficient policies maximize joint welfare
- Absent a trade-in-services agreement, Nash policies prevail

# Comparing Efficient and Nash Policies

- Only discriminatory sales taxes distorted in Nash (ToT manipulation)

$$\left[ \left( -\frac{\partial \theta(r^E)}{\partial r} \right) - \frac{\partial \kappa(r^E)}{\partial r} \right] = 0; \quad \left[ \left( -\frac{\partial \theta(\rho^E)}{\partial \rho} \right) - \frac{\partial \kappa(\rho^E)}{\partial \rho} \right] = 0$$

$$\left[ \frac{\partial \lambda(I^E)}{\partial I} \cdot S_f^E - c \right] = 0$$

$$t^E = \theta(r^E); \quad t_f^E + t_f^{*E} = -(\gamma^* - 1) \cdot S_f^E$$

$$\left[ \left( -\frac{\partial \theta(r^N)}{\partial r} \right) - \frac{\partial \kappa(r^N)}{\partial r} \right] = 0; \quad \left[ \left( -\frac{\partial \theta(\rho^N)}{\partial \rho} \right) - \frac{\partial \kappa(\rho^N)}{\partial \rho} \right] = 0$$

$$\left[ \frac{\partial \lambda(I^N)}{\partial I} \cdot S_f^N - c \right] = 0$$

$$t^N = \theta(r^N); \quad t_f^N + t_f^{*N} = -(\gamma^* - 1) \cdot S_f^N + \frac{3}{2} S_f^N$$

# A Benchmark Trade-in-Services Agreement

- Benchmark Model suggests a “shallow” focus on liberalizing  $t_f$  and  $t_f^*$  might have been natural for GATS
  - but as with GATT, an efficient agreement would need additional rules
- To see this, suppose agreement binds  $\bar{t}_f = 0$  and  $\bar{t}_f^* = -(\gamma^* - 1) \cdot S_f^E$ , leaving all other policies unconstrained

$$\begin{aligned} \left[ \left( -\frac{\partial \theta(r^R)}{\partial r} \right) - \frac{\partial \kappa(r^R)}{\partial r} \right] &= \frac{1}{2S_d^R} [S_f^R - (\theta(r^R) - \theta(\rho^R))] \frac{\partial \kappa(r^R)}{\partial r} \\ \left[ \left( -\frac{\partial \theta(\rho^R)}{\partial \rho} \right) - \frac{\partial \kappa(\rho^R)}{\partial \rho} \right] &= -\frac{1}{2S_f^R} [S_f^R - (\theta(r^R) - \theta(\rho^R))] \frac{\partial \kappa(\rho^R)}{\partial \rho} \\ \left[ \frac{\partial \lambda(I^R)}{\partial I} S_f^R - c \right] &= \frac{1}{2} [S_f^R - (\theta(r^R) - \theta(\rho^R))] \frac{\partial \lambda(I^R)}{\partial I} \\ t^R &= \frac{1}{2} [\theta(r^R) + \theta(\rho^R)] + \frac{1}{2} S_f^R \end{aligned}$$

- $\implies r^R < r^E < \rho^R$ ,  $I^R$  too small,  $t^R$  too high

# A Benchmark Trade-in-Services Agreement

- Now consider adding some additional across-the-board rules
- First, a *national treatment* (NT) rule applied to regulation – but *not* taxation – implying the restriction  $r \geq \rho$
- Suppose agreement binds  $\bar{t}_f = 0$  and  $\bar{t}_f^* = -(\gamma^* - 1) \cdot S_f^E$ , leaving all other policies unconstrained beyond NT

$$\left[ \left( -\frac{\partial \theta(r^R)}{\partial r} \right) - \frac{\partial \kappa(r^R)}{\partial r} \right] = 0; \quad \left[ \left( -\frac{\partial \theta(\rho^R)}{\partial \rho} \right) - \frac{\partial \kappa(\rho^R)}{\partial \rho} \right] = 0$$
$$\left[ \frac{\partial \lambda(I^R)}{\partial I} S_f^R - c \right] = \frac{1}{2} S_f^R \frac{\partial \lambda(I^R)}{\partial I}$$
$$t^R = \theta(r^R) + \frac{1}{2} S_f^R$$

- $\implies$  NT sufficient to prevent distortions of regulatory standards, *independent* of foreign service provider market share

# A Benchmark Trade-in-Services Agreement

- Next, a *Technical Barriers to Trade* (TBT) rule: govts are obligated to adopt regulations that are *no more trade restrictive than necessary* to achieve their objectives

- $\implies \frac{\partial \lambda(I^R)}{\partial I} S_f^R = c$

- Suppose agreement binds  $\bar{t}_f = 0$  and  $\bar{t}_f^* = -(\gamma^* - 1) \cdot S_f^E$ , leaving all other policies unconstrained beyond NT and TBT rules

$$\left[ \left( -\frac{\partial \theta(r^R)}{\partial r} \right) - \frac{\partial \kappa(r^R)}{\partial r} \right] = 0; \quad \left[ \left( -\frac{\partial \theta(\rho^R)}{\partial \rho} \right) - \frac{\partial \kappa(\rho^R)}{\partial \rho} \right] = 0$$

$$\left[ \frac{\partial \lambda(I^R)}{\partial I} S_f^R - c \right] = 0$$

$$t^R = \theta(r^R) + \frac{1}{2} S_f^R$$

- $\implies$  NT and TBT sufficient to prevent distortions of regulatory standards and investments in reducing costs of compliance and conformity assessment

# A Benchmark Trade-in-Services Agreement

- Finally, a *non-violation* (NV) rule whose primary purpose is to dissuade govs from introducing new commercial measures subsequent to negotiations that undercut market access commitments
- Begin at Nash policies where  $t_f^N + t_f^{*N} = -(\gamma^* - 1) \cdot S_f^N + \frac{3}{2}S_f^N$  and remaining policy choices satisfy

$$\left[ \left( -\frac{\partial \theta(r^N)}{\partial r} \right) - \frac{\partial \kappa(r^N)}{\partial r} \right] = 0; \quad \left[ \left( -\frac{\partial \theta(\rho^N)}{\partial \rho} \right) - \frac{\partial \kappa(\rho^N)}{\partial \rho} \right] = 0$$
$$\left[ \frac{\partial \lambda(I^N)}{\partial I} \cdot S_f^N - c \right] = 0$$
$$t^N = \theta(r^N)$$

- Suppose agreement binds  $\bar{t}_f = 0$  and  $\bar{t}_f^* = -(\gamma^* - 1) \cdot S_f^E$ , leaving all other policies unconstrained beyond NT and TBT rules

# A Benchmark Trade-in-Services Agreement

- Remaining policy choices satisfy

$$\left[ \left( -\frac{\partial \theta(r^R)}{\partial r} \right) - \frac{\partial \kappa(r^R)}{\partial r} \right] = 0; \quad \left[ \left( -\frac{\partial \theta(\rho^R)}{\partial \rho} \right) - \frac{\partial \kappa(\rho^R)}{\partial \rho} \right] = 0$$
$$\left[ \frac{\partial \lambda(I^R)}{\partial I} S_f^R - c \right] = 0$$
$$t^R = \theta(r^R) + \frac{1}{2} S_f^R$$

- NV could prevent change from  $t^N = \theta(r^N)$  to  $t^R = \theta(r^R) + \frac{1}{2} S_f^R$ , and allow the agreement to achieve efficient policies

# A Benchmark Trade-in-Services Agreement

- $\therefore$  NT, TBT and NV work in tandem to facilitate shallow integration based on negotiated market access commitments over  $t_f$  and  $t_f^*$ 
  - NT addresses incentives to distort regulatory standards  $r$  and  $\rho$  that arise once market access commitments over  $t_f$  and  $t_f^*$  are made
  - TBT addresses incentives to distort compliance-cost-reducing investments  $I$  that arise once market access commitments over  $t_f$  and  $t_f^*$  are made
  - NV prevents the introduction of new “commercial measures” /fiscal instruments ( $t$ ) from frustrating these market access commitments (plus secondary role wrt changes in  $r$  and  $\rho$ )
- And with only  $t_f$  and  $t_f^*$  distorted in Nash, Benchmark Model suggests that a GATT-like shallow integration approach to services trade would have been very natural for govts to pursue
- Why is GATS so different?



# The Implications of Limited Service-Sector Policy Options

- Discriminatory domestic sales tax instrument  $t_f$ 
  - with goods trade, absent NT a discriminatory sales tax could be imposed at the border (tariff by another name)
  - for Mode 3 services trade, a discriminatory sales tax must be imposed at the point of production/consumption of the service
- Limited evidence that imposing higher taxes on foreigners can in some circumstances be feasible in service sector (Hendrix & Zodrow, 2003):
  - “Almost all states tax rentals of tangible personal property...reflecting the popularity of taxes than may be exported to nonresidents...”
- But for the most part, such taxes probably best thought of as unavailable (perhaps for reasons of high transaction costs)
  - introduce this policy constraint into the Benchmark Model

$$t_f \equiv 0$$

(Assumption 1)

# The Implications of Limited Service-Sector Policy Options

- Note:  $t_f = 0$  and  $t_f^* = -(\gamma^* - 1) \cdot S_f^E$  still consistent with efficiency
- But Nash now

$$\begin{aligned}\left[ \left( -\frac{\partial \theta(r^N)}{\partial r} \right) - \frac{\partial \kappa(r^N)}{\partial r} \right] &= \frac{1}{2S_d^N} [S_f^N - (\theta(r^N) - \theta(\rho^N))] \frac{\partial \kappa(r^N)}{\partial r} \\ \left[ \left( -\frac{\partial \theta(\rho^N)}{\partial \rho} \right) - \frac{\partial \kappa(\rho^N)}{\partial \rho} \right] &= -\frac{1}{2S_f^N} [S_f^N - (\theta(r^N) - \theta(\rho^N))] \frac{\partial \kappa(\rho^N)}{\partial \rho} \\ \left[ \frac{\partial \lambda(I^N)}{\partial I} S_f^N - c \right] &= \frac{1}{2} [S_f^N - (\theta(r^N) - \theta(\rho^N))] \frac{\partial \lambda(I^N)}{\partial I} \\ t^N &= \frac{1}{2} [\theta(r^N) + \theta(\rho^N)] + \frac{1}{2} S_f^N \\ t_f^{*N} &= -(\gamma^* - 1) S_f^N + \frac{1}{2} S_f^N\end{aligned}$$

# The Implications of Limited Service-Sector Policy Options

- Distortions widespread in Nash, shallow approach to service trade liberalization no longer obvious
- But still possible to avoid direct negotiations over standards, *if across-the-board NT, TBT and NV rules introduced first*
- Remaining policy choices satisfy

$$\left[ \left( -\frac{\partial \theta(r^R)}{\partial r} \right) - \frac{\partial \kappa(r^R)}{\partial r} \right] = 0; \quad \left[ \left( -\frac{\partial \theta(\rho^R)}{\partial \rho} \right) - \frac{\partial \kappa(\rho^R)}{\partial \rho} \right] = 0$$
$$\left[ \frac{\partial \lambda(I^R)}{\partial I} S_f^R - c \right] = 0$$

$$t^R = \theta(r^R) + \frac{1}{2} S_f^R; \quad t_f^* = -(\gamma^* - 1) S_f^N + \frac{1}{2} S_f^N$$

- Bind  $\bar{t} = \theta(r^E)$  and  $\bar{t}_f^* = -(\gamma^* - 1) \cdot S_f^E$ 
  - NV prevents subsequent changes in  $r$  and  $\rho$  from undercutting market access commitments

# The Implications of Limited Service-Sector Policy Options

- Discriminatory foreign sales tax/subsidy instrument  $t_f^*$ 
  - foreign gov must be able to administer program of sales tax/subsidies to its service firms within jurisdiction of domestic gov
- Perhaps even less reason to think this policy instrument is available
  - introduce this policy constraint into the Benchmark Model

$$t_f^* \equiv 0 \quad (\text{Assumption 2})$$

- For simplicity, relax Assumption 1 so that original efficiency frontier still attainable with  $t_f = -(\gamma^* - 1) \cdot S_f^E$  (and  $t_f^* \equiv 0$ )
- Nash conditions for domestic gov unchanged by Assumption 2, so still possible to avoid direct negotiations over standards
  - bind  $\bar{t}_f = -(\gamma^* - 1) \cdot S_f^E$  (and  $t_f^* \equiv 0$ ) and add NT/TBT/NV
- Note: critical role for market power as source of international inefficiency is diminished under Assumption 2

# Open Questions

- Can sales taxes be as finely tuned to individual service industries as regulatory standards?
  - if not, the capacity of the NT rule applied to standards for channeling distortions into nondiscriminatory sales taxes is qualified
- Can the concept of “like product” central to the NT rule be reliably applied as a legal matter in the service sector?
  - if not, the utility of a shallow integration approach for services trade will be undermined
- Can govs measure and monitor with reasonable accuracy the changes in import volumes and prices that would be required for the reliable application of the NV rule in the service sector?
  - the fragmentary data on Mode 3 service trade currently available could pose a roadblock to shallow integration for services trade
- Are world prices determined by bargaining between Mode 3 service providers and purchasers rather than market clearing conditions?

# Conclusion

- There are striking differences between GATT and GATS
- We show that the broad structure of GATS can be understood through the lens of the ToT theory
  - but only if this theory is augmented with a set of restrictions on the policies available to govts, reflecting salient features of services trade
- The GATT/WTO has been highly successful in liberalizing goods trade; GATS has been largely unsuccessful in liberalizing services trade
- A potential reason: the distinct nature of integration that each agreement has attempted
- We find that a shallow-integration approach more in line with that taken by GATT might be possible in a trade-in-services agreement
  - thereby sidestepping some of the most contentious issues that may have stymied negotiation progress thus far