Is the Growth of Regionalism as Significant as the Headlines Suggest? Perspectives from Ag. Trade

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Outline

• The significance of regionalism – counting RTAs (the WTO method)

• The significance of regionalism – the market share perspective

• The significance of regionalism – the empirical perspective
The WTO Headlines

• Proliferating Regionalism
  • 500 notifications of RTAs (in force, in negotiation, in consideration)
  • 239 in force (Jan. 2012)

• Since its inception, WTO has received an average of ~ 12 notifications/year
  • Almost 1/month

• All WTO members party to at least one RTA and most participate in multiple agreements (avg. = 13!)
<table>
<thead>
<tr>
<th>Year</th>
<th>CU</th>
<th>FTA</th>
<th>PSA</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>12</td>
<td>29</td>
<td>9</td>
<td>50 (Bilateral = 15)</td>
</tr>
<tr>
<td>2010</td>
<td>21</td>
<td>170</td>
<td>15</td>
<td>206 (Bilateral = 105)</td>
</tr>
</tbody>
</table>

**THE WTO METHOD**

Cumulative RTA Count
Counting RTAs can be misleading

• Assigns equal weight to all agreements

• Double counting going on in WTO statistics
  • WTO Headline: > 500 RTAs notified
  • Flawed: ~ ½ are notified twice because they include services!

• Some RTAs may be large but economically insignificant (Pomfret 2006; Baier & Bergstrand 2007, 2009)
Other Issues

1. “Regional” is bit of a misnomer

2. RTAs vary in the shape, size and level of ambition pursued (Free trade agreements ≠ trade that is completely “FREE” (i.e. agriculture)

3. More costly to oversee 13 agreements (avg/wto member) than 1 multilateral agreement (ROO, policy fragmentation, external tariffs)

4. On the outside looking in (aggressive regionalism in EU & Asia (ASEAN+6))

5. “Is there a barrier being drawn down center of pacific?” (Bergsten, 2009)

• On the other hand, RTAs can do more than the WTO in many areas
The Trade Share Method

Share of RTA trade in world agricultural trade = 60% in 2008

- 36% reflects trade within CUs
- 18% reflects trade within FTAs
- 6% reflects trade within PSAs

Customs Unions
Free Trade Agreements
Partial Scope Arrangements
Trade shares are not that illuminating either

- Assumes that RTAs cover all trade (agriculture in this case)
- Assigns no weight to agreement’s share in world trade
- The larger an RTA (e.g., EU-27) the larger will be its intra-regional trade share (obviously!)
- **Concentration/intensity** indices normalize by the agreement’s share in world trade
Trade Intensity Index

- Regional Trade Intensity Index (RTTI) identifies partners for which an RTA Bloc’s imports are concentrated

\[
RTTI = \frac{\frac{X_{iB}}{X_{iw}}}{\frac{X_{wB}}{X_{ww}}} = \frac{\text{Share of } i\text{'s exports sent to Regional Bloc } B}{\text{Share of World exports sent to Regional Bloc } B}
\]

\[0 < RTTI < \infty\]

\[-1 < SRTTI = \frac{RTTI - 1}{RTTI + 1} < 1\]
Symmetric Trade Intensity Indices
The Empirical Method

- Baier and Bergstrand (2007) FTAs double members’ trade (total merchandise)
- Grant and Lambert (2008) → RTAs increase Ag. trade by 149%
- Koo, Kenedy, and Skripnitchenko (2006) → 95%
- Lambert and McKoy (2009) → 153% (food); 101% (bulk)
- Similarly impressive RTA effects documented in:
  - Vollrath and Hallahan (2011),
  - Sun and Reed (2010),
  - Karemera and Koo (2007)
  - Vollrath, Hallahan and Gelhar (2009)
  - Jayasinghe and Sarker (2008)
  - Sarker and Jayasinghe (2007)
Basis of this Study

• While these studies have advanced our understanding of the trade creating potential of RTAs, an important policy question remains:

What factors are responsible for the impressive agricultural trade increases RTAs seem to generate?

• One important, although largely untested, factor is whether the depth of economic integration explains the success of these agreements (Magee 2008)
Formal Model of Trade Flows

• Controlling for heterogeneity in the depth of regional integration:

\[ \ln(AT_{ijt}) = \alpha_{ij} + \pi_{it} + \pi_{jt} + \sum_{d=1}^{3} \sum_{n=0}^{2} \lambda_n^d RTA_{ijt-n}^d + \epsilon_{ijt} \]

• Where:
  
  • \( \alpha_{ij} (ij \neq ji) \) is a set of bilateral pair fixed effects
  
  • \( \pi_{it} (\pi_{jt}) \) is a set of time-varying exporter (importer) fixed effects
  
  • \( RTA^d \) are three dummy variables that depend on the depth of economic integration pursued: \( d = CU, FTA, or PSA \)
Hypothesis (Test of Regional Integration)

- Conventional theory of economic integration motivates our core hypothesis (H1):

- H1: \( \sum_{n=0}^{2} \lambda_n^D > \sum_{n=0}^{2} \lambda_n^M > \sum_{n=0}^{2} \lambda_n^S \) (D = Deep; M = Moderate; S = Shallow)

The ranking of regional trade agreements in terms of their effect on members’ agricultural trade follows the conventional theory of economic integration whereby DIAs have the largest effect followed by MIAs, and finally, SIAs.
Data

• Reconciled UN Comtrade Data, 1964-2008 (4 yr avgs)
  – 206 Countries (with gaps) (~95 percent of ag. trade)
  – SITC Rev. 1
  – Mirrored Flows (Feenstra et al. 2005)

• 266,386 observations (42% are zero trade flows (155,785))

• 11% (16,514) occurs between RTA partners (DEEP = 5,048, MODERATE = 6,890, SHALLOW = 4,576)

• MODERATE RTAs in force > 8*DEEP and SHALLOW RTAs. However, No. of country-pair observations in MIAs ≠ 8*DEEP or SHALLOW agreements.

• DEEP RTAs encompass more countries *per agreement* whereas bilateral relationships dominate MODERATE AND SHALLOW RTAs
Econometric Results
<table>
<thead>
<tr>
<th></th>
<th>Year FE</th>
<th>Country-Time FE</th>
<th>Country-Time &amp; Pair FE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Generic</td>
<td>Depth</td>
<td>Generic</td>
</tr>
<tr>
<td>GDP (it)</td>
<td>0.62***</td>
<td>0.62***</td>
<td></td>
</tr>
<tr>
<td>GDP (jt)</td>
<td>0.68***</td>
<td>0.68***</td>
<td></td>
</tr>
<tr>
<td>Distance (ij)</td>
<td>-0.80***</td>
<td>-0.76***</td>
<td>-1.03***</td>
</tr>
<tr>
<td>Common Border (ij)</td>
<td>0.78***</td>
<td>0.78***</td>
<td>0.60***</td>
</tr>
<tr>
<td>Common Language (ij)</td>
<td>0.68***</td>
<td>0.68***</td>
<td>0.52***</td>
</tr>
<tr>
<td>Colonial Link (ij)</td>
<td>1.51***</td>
<td>1.52***</td>
<td>1.38***</td>
</tr>
<tr>
<td>Landlocked (i)</td>
<td>-0.12***</td>
<td>-0.12***</td>
<td></td>
</tr>
<tr>
<td>Landlocked (j)</td>
<td>-0.28***</td>
<td>-0.27***</td>
<td></td>
</tr>
<tr>
<td>Land Area (i)</td>
<td>0.09***</td>
<td>0.09***</td>
<td></td>
</tr>
<tr>
<td>Land Area (j)</td>
<td>-0.08***</td>
<td>-0.07***</td>
<td></td>
</tr>
<tr>
<td>RTA (ijt)</td>
<td>0.76***</td>
<td>0.60***</td>
<td>0.41***</td>
</tr>
<tr>
<td>DEEP (ijt)</td>
<td>1.44***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MODERATE (ijt)</td>
<td>0.68***</td>
<td>0.69***</td>
<td>0.27***</td>
</tr>
<tr>
<td>SHALLOW (ijt)</td>
<td>0.12</td>
<td>0.01</td>
<td>0.04</td>
</tr>
</tbody>
</table>

H1: DEEP = MODERATE
Prod > F
(0.00)
(0.00)

H2: DEEP = SHALLOW
Prod > F
(0.00)
(0.00)

H3: MODERATE = SHALLOW
Prod > F
(0.00)
(0.03)

“DEEP” integration largely responsible for trade increase.
“... the year an agreement is negotiated is different from the year it is ratified, which is in turn different from the year it goes into effect, which is in turn different from the year that the transition period of trade liberalization is completed” Frankel 1997 (pg. 78)
<table>
<thead>
<tr>
<th>Scenario</th>
<th>Variable</th>
<th>RTA</th>
<th>RTA_{t-4}</th>
<th>RTA_{t-8}</th>
<th>Trade Effect</th>
<th>H1: D=M</th>
<th>H2: D=S</th>
<th>H3: M=S</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a. Generic</td>
<td>RTA</td>
<td>0.28***</td>
<td>0.24***</td>
<td></td>
<td>68%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1b. Depth</td>
<td>DEEP</td>
<td>0.51***</td>
<td>0.50***</td>
<td></td>
<td>174%</td>
<td>81.6*** (0.00)</td>
<td>56.4*** (0.00)</td>
<td>5.53*** (0.00)</td>
</tr>
<tr>
<td>1b. Depth</td>
<td>MODERATE</td>
<td>0.20***</td>
<td>0.18***</td>
<td></td>
<td>46%</td>
<td>81.6*** (0.00)</td>
<td>56.4*** (0.00)</td>
<td>5.53*** (0.00)</td>
</tr>
<tr>
<td>1b. Depth</td>
<td>SHALLOW</td>
<td>0.14</td>
<td>-0.16</td>
<td></td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2a. Generic</td>
<td>DEEP</td>
<td>0.51***</td>
<td>0.35***</td>
<td>0.27***</td>
<td>209%</td>
<td>73.1*** (0.00)</td>
<td>43.9*** (0.00)</td>
<td>2.30 (0.13)</td>
</tr>
<tr>
<td>2a. Generic</td>
<td>MODERATE</td>
<td>0.18***</td>
<td>0.14***</td>
<td>0.10*</td>
<td>52%</td>
<td>73.1*** (0.00)</td>
<td>43.9*** (0.00)</td>
<td>2.30 (0.13)</td>
</tr>
<tr>
<td>2a. Generic</td>
<td>SHALLOW</td>
<td>0.12</td>
<td>-0.09</td>
<td>-0.06</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tests confirm theory of economic integration. Hierarchical trade flow effects continue to hold.
Robustness Checks: Structural Characteristics and EU Effect
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DEEP</td>
<td>0.82***</td>
<td>0.79***</td>
<td>0.68***</td>
<td>0.71***</td>
<td>0.69***</td>
</tr>
<tr>
<td>MODERATE</td>
<td>0.27***</td>
<td>0.32**</td>
<td>0.28***</td>
<td>0.29***</td>
<td>0.25***</td>
</tr>
<tr>
<td>SHALLOW</td>
<td>0.05</td>
<td>-0.48**</td>
<td>0.03</td>
<td>0.27**</td>
<td>-0.05*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EU</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>H₁: DEEP = MODERATE</td>
<td>74.5***</td>
<td>9.65***</td>
<td>7.72***</td>
<td>23.9***</td>
<td>18.5***</td>
</tr>
<tr>
<td>Prob &gt; F</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
</tr>
<tr>
<td>H₂: DEEP = SHALLOW</td>
<td>16.8***</td>
<td>23.7***</td>
<td>19.8***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prob &gt; F</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
<td>(0.00)</td>
</tr>
<tr>
<td>H₃: MODERATE = SHALLOW</td>
<td>4.33**</td>
<td>10.5***</td>
<td>6.14**</td>
<td>0.17</td>
<td>0.26</td>
</tr>
<tr>
<td>Prob &gt; F</td>
<td>(0.04)</td>
<td>(0.00)</td>
<td>(0.01)</td>
<td>(0.68)</td>
<td>(0.61)</td>
</tr>
<tr>
<td>H₄: EU = DEEP</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9.81***</td>
</tr>
<tr>
<td>Prob &gt; F</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.00)</td>
</tr>
</tbody>
</table>

Hierarchical ranking still holds (even after EU Effect is removed)

EU Effect is significant
Conclusions

• Trade liberalizing ambition of RTAs differs widely which leaves open the question of whether the world economy is *actually becoming more regionalized*?

• Investigated trade creating potential of three types of RTAs with different levels of trade liberalization ambition:
  - “Shallow” (i.e., partial scope arrangements)
  - “Moderate” (i.e., free trade agreements)
  - “Deep” (i.e., customs unions, common markets and single economic unions)
Conclusions

• The Punch Line:

  – While some agreements important, others appear largely inconsequential

  – “DEEP” RTAs largely responsible for the impressive agricultural trade increases found in the literature

  – Multiple comparisons tests of the hierarchy of RTAs (Balassa 1961; Viner 1950; Meade 1955) largely confirms the theory: **the benefits of regionalism are an increasing function of the depth of economic integration!**
Implication?

• "Shallow" and "Moderate" integration agreements collectively account for 90 percent of RTAs currently in force

• With relatively modest (sometimes insignificant) trade flow impacts, it’s hard to escape conclusion that the growth of regionalism may not be as significant as the headlines suggest

• Perhaps RTAs motivated for reasons other than agricultural trade liberalization
  – Bargaining power in international negotiations
  – Cross-border problems such as national security or migration
  – Or, procurement of trade-related investment or service sector liberalization
“Plug” for the CATPRN Trade Matrix

• Completing documentation for a NEW CATPRN Trade Matrix

• Available to CATPRN Members, but not for re-distribution

• Features
  – Reconciled bilateral trade flows
  – 1980-2010 (every year)
  – 10 Ag. Sectors
    • Cereals
    • Fruits and Vegetables
    • Sugar
    • Dairy
    • Cotton
    • Live animals and meat
    • Beverages & Tobacco
    • Oilseeds, oil, meal
    • Coffee/Tea/Spices
    • Other
  – 75 Countries (>90 % world ag. trade)
# Geographic Structure of Ag. Trade

Columns = destination region  
Rows = origin region

<table>
<thead>
<tr>
<th></th>
<th>Africa</th>
<th>Asia</th>
<th>Europe</th>
<th>North Am.</th>
<th>Oceania</th>
<th>Other Am’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>1964</td>
<td>7.5%</td>
<td>20.7%</td>
<td>38.2%</td>
<td>24.0%</td>
<td>4.6%</td>
<td>4.9%</td>
</tr>
<tr>
<td>2008</td>
<td>15.8%</td>
<td>23.2%</td>
<td>28.0%</td>
<td>12.7%</td>
<td>4.0%</td>
<td>16.3%</td>
</tr>
</tbody>
</table>

- **Europe**
  - 1964: 38.4%  
  - 2008: 74.5%
- **North Am.**
  - 1964: 20.1%  
  - 2008: 3.4%
- **Oceania**
  - 1964: 6.1%  
  - 2008: 4.8%
- **Other Am’s**
  - 1964: 13.3%  
  - 2008: 10.2%
Thankfully, we’re not in charge of the Rules of Origin!

Add:
Korea
Singapore
Columbia
Chile
Morocco
Australia