1 Explaining Trade Policy

- Gawande and Krishna (Handbook chapter, 2003) have a nice survey of this literature.

- “If, by an overwhelming consensus among economists, trade should be free, then why is it that nearly everywhere we look, and however far back, trade is in chains?”
  - One answer: even in a neoclassical economy, trade policy might be optimal for a non-SOE. (Broda, Limao and Weinstein (2008) have recently improved support for this claim, as we will discuss later).
  - Another answer: we live in an imperfectly competitive world where it is possible that even a SOE would want import tariffs/export subsidies. (Helpman and Krugman, 1987 book).
  - Political economy answer: governments don’t maximize social welfare.

1.1 “First Generation” Empirical work I

- This body of work was impressive and large, but it always suffered from a lack of strong theoretical input that would suggest:
  - What regression to run.
  - What the coefficients in a regression would be telling us.
  - What endogeneity problems seem particularly worth worrying about.

- Still, theory provided some input, such as:
  - “Pressure Group model”: Olson (1965) on collective action problems within lobby groups. Suggests concentration as empirical proxy.
  - “Adding machine model”: Caves (1976) has workers voting for their industries. Suggests L force as proxy.
  - “Social change model”: governments aim to reduce income inequality. Suggests wage rate as proxy.
  - “Comparative cost model”: lobbies have finite resources and decide what to lobby for (between protection and other policies). Suggests that the import penetration ratio should matter.
“Foreign policy model”: governments have less international bargaining power if, eg, lots of its firms are investing abroad. Suggests FDI rate should matter.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Tariffs</th>
<th>Tariffs</th>
<th>Tariffs</th>
<th>Tariffs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baldwin (85)</td>
<td>Baldwin (85)</td>
<td>Baldwin (85)</td>
<td>Baldwin (85)</td>
</tr>
<tr>
<td>CONCENTRATION</td>
<td>0.005</td>
<td>−0.06</td>
<td>−0.04</td>
<td>−0.14</td>
</tr>
<tr>
<td>TARI</td>
<td>−0.06 (1)</td>
<td>−0.23 (1)</td>
<td>−0.1</td>
<td>−0.14</td>
</tr>
<tr>
<td>TARI</td>
<td>0.005 (1)</td>
<td>−0.03</td>
<td>−0.02</td>
<td></td>
</tr>
<tr>
<td>TARI</td>
<td>0.005 (1)</td>
<td>−0.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TARI</td>
<td>0.005 (1)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1.1.1 Trefler (JPE 1993)

- Trefler (1993) conducts a similar empirical exercise to Baldwin (1985), but for:
  - Focus on ‘NTB coverage ratios’ (the proportion of imports in an industry that are subject to any sort of NTB) rather than tariffs. This is attractive since US tariffs are so low in this period that there isn’t much variation. Also true that tariffs (being under the remit of GATT/WTO) are constrained by international agreements in a way that NTBs are not.
  - Attention to endogeneity issues and specification issues:
    * Simultaneity: Protection depends on import penetration ratio (IPR) but IPR depends on protection.
    * Truncation: IPR can’t go negative. NTB coverage ratio can’t go negative.
Trefler (1993) estimates the following system by FIML:

Where \( N^* = M\gamma_M + X_N\beta_N + \varepsilon_N, M^* = N\gamma_N + X_M\beta_M + \varepsilon_M, N \) is the NTB coverage ratio and \( M \) is the import penetration ratio.

\( X_N \) is Baldwin (1985) style variables explaining protection.

\( X_M \) is H-O style variable explaining trade flows.

\[ N = \begin{cases} M\gamma_M + X_N\beta_N + \varepsilon_N & M^* \\ 0 & M^* \end{cases} \]

\[ M = \begin{cases} N\gamma_N + X_M\beta_M + \varepsilon_M & M^* \\ 0 & M^* \end{cases} \]
"Second Generation" Empirical Work

- Grossman and Helpman (‘Protection for Sale’, AER 1994) provided a clean theoretical ‘GE’ (the economy is not really GE, but the lobbying of one industry does affect the lobbying of another) model that delivered an equation for industry-level equilibrium protection as a function of industry-level observables:

\[
\frac{t_i}{1 + t_i} = -\frac{\alpha_L}{\alpha_L + a} \left( \frac{z_i}{e_i} \right) + \frac{1}{\alpha_L + a} \left( I_i \times \frac{z_i}{e_i} \right).
\]

1.2 “Second Generation” Empirical Work

- Grossman and Helpman (‘Protection for Sale’, AER 1994) provided a clean theoretical ‘GE’ (the economy is not really GE, but the lobbying of one industry does affect the lobbying of another) model that delivered an equation for industry-level equilibrium protection as a function of industry-level observables:

\[
\frac{t_i}{1 + t_i} = -\frac{\alpha_L}{\alpha_L + a} \left( \frac{z_i}{e_i} \right) + \frac{1}{\alpha_L + a} \left( I_i \times \frac{z_i}{e_i} \right).
\]
- $t_i$ is the *ad valorem* tariff rate in industry $i$.
- $I_i$ is a dummy for whether industry $i$ is organized or not.
- $0 \leq \alpha_L \leq 1$ is the share of the population that is organized into lobbies.
- $a > 0$ is the weight that the government puts on social welfare relative to aggregate political contributions (whose weight is 1).
- $z_i$ is the inverse import penetration ratio.
- $e_i$ is the elasticity of import demand.

### 1.2.1 Goldberg and Maggi (1999)

- There a host of key challenges in taking the GH (1994) equation to the data:

  - How to measure $t_i$? Ideally want NTBs (not set cooperatively under GATT/WTO) measured in tariff equivalents. Absent this GM (1999) use coverage ratios, as in Trefler (1993). They experiment with different proportionality constants $(1/\mu)$ between coverage ratios and $t$ and also correct for censoring of coverage ratios.

  - Data on $e_i$ is obviously hard to get. GM (1999) use existing estimates but also consider them as measured with error, so GM (1999) take $e_i$ over to the LHS.

  - More challenges:

  - How to measure $I_i$? Can get data on *total* political contributions in the US by industry (by law these are supposed to be reported), but all ‘industries’ have at least some contributions, so all seem ‘organized’. GM (1999) experiment with different cutoffs in this variable. This isn’t innocuous since contributions are endogenous in the GH (1994) model. GM (1999) use as instruments for $I_i$ a set of typical Baldwin (1985)-style regressors, ie Trefler’s $N$ equation.

  - $z_i$ is endogenous (as Trefler (1993) highlighted). GM (1999) use Trefler-style instruments for $z_i$ (Trefler’s $M$ equation).
2 Subsequent Work

- A number of papers have extended this work in a number of directions:
  - Other countries: Mitra, Thomakos and Ulubasoglu (ReStat 2002) on Turkey and McCalman (RIE 2002) on Australia. Turkey paper has ‘democracy vs dictatorship’ element to it.
  - Heterogeneous firms and how organized an industry’s lobbying is: Bombardini (JIE 2008)
  - Nunn and Trefler (2009): rich/growing countries appear to put tariffs relatively more on skill-intensive goods. Perhaps this is because countries with good institutions have low $a$, and they recognize that skill-intensive sectors (might) have more positive externalities (eg knowledge spillovers) to them.