Political Economy and Trade Policy
Motivation

- When asked “why no free trade?”, most international economists respond “it must be politics”
- In representative democracies, trade policy shaped not only by general electorate, but by special interests that lobby for what may be socially costly policies
- Two key approaches to modeling political process:
  - political competition: parties announce policies they will implement if elected (Magee et al., 1989)
  - political support: incumbent governments set policies to maximize political support (Stigler, 1971)
- Grossman and Helpman (1994) adopt latter approach in order to explain structure of trade protection
The Model

- Small economy where all individuals have identical preferences, but different factor endowments; each maximizes utility:
  \[ u = x_0 + \sum_{i=1}^{n} u_i(x_i) \]  
  where \( x_0 \) is consumption of good 0, and \( x_i \) is consumption of goods \( i = 1, 2, \ldots, n \)

- Good 0 is *numeraire* with world and domestic price of 1; \( p_i^* \) is world price of good \( i \), and \( p_i \) is domestic price

- Individual spending \( E \) consumes \( x_i = d_i(p_i) \) of \( i \), and expenditure on *numeraire* good is:
  \[ x_0 = E - \sum_{i} p_i d_i(p_i) \]
The Model

- Indirect utility takes form:

\[ V(p, E) = E + s(p) \]  \hspace{1cm} (2)

where \( p = (p_1, p_2, \ldots, p_n) \) is vector of domestic prices, and consumer surplus is,

\[ s(p) = \sum_i u_i [d_i(p_i)] - \sum_i p_i d_i(p_i) \]

- Good 0 produced from labor alone under constant returns with input-output coefficient of 1, labor supply being large enough that wage rate equals one

- Production of \( x_i \) uses labor and sector-specific inputs under constant returns, where specific factors are inelastic in supply

- With wage rate fixed, aggregate reward to specific factor in \( i \) depends on domestic price of \( i \), \( \Pi_i(p_i) \)
The Model

- Government can implement trade taxes and subsidies, driving wedge between domestic and world prices; net revenue/capita from all taxes and subsidies:

\[ r(p) = \sum_{i} (p_i - p_i^*) \left[ d_i(p_i) - \frac{1}{N} y_i(p_i) \right] \]  \hspace{1cm} (3)

where \( N \) is total voting population, and domestic output of good \( i \) is \( y_i(p_i) = \pi'_i(p_i) \)

- Government redistributes revenue uniformly to all voters, \( r(p) \) is net transfer to each one

- Typical individual derives income from wages and transfers, plus that from ownership of sector-specific inputs – income tied to production of good \( i \), hence they have direct stake in trade taxes/subsidies
The Model

- In some set of sectors $L$, specific-factor owners organize into lobbies making political contributions; remaining sectors/individuals make no contributions.

- Lobby in sector $i$ makes contribution contingent on trade-policy vector of government; $C_i(p)$ is contribution schedule of $i$, designed to maximize total welfare of members, i.e., income plus surplus less contributions.

- Joint welfare of lobby $i$ is $V_i = W_i - C_i$ where $W_i$ is gross-of-contributions joint welfare:

  $$W_i(p) \equiv \ell_i + \pi_i(p_i) + \alpha_iN[r(p) + s(p)]$$  

  (4)

  where $\ell_i$ is total labor supply (income) of owners of specific factors used in $i$ and $\alpha_i$ is share of population owning some of that factor.
The Model

- Contributions can be used to finance campaign spending, and voters more likely to re-elect government delivering high standard of living.

- Government objective function is:

\[ G = \sum_{i \in L} C_i(p) + aW(p) \quad a \geq 0 \quad (5) \]

\( W \) is aggregate, gross-of-contributions welfare, i.e., aggregate income plus trade tax revenues plus consumer surplus:

\[ W(p) \equiv \ell + \sum_{i=1}^{n} \pi_i(p_i) + N[r(p) + s(p)] \quad (6) \]

- Two-stage non-cooperative game where lobbies simultaneously choose contribution schedules in first stage, government sets policy in second stage.
Structure of Protection

- Result expressed in terms of *ad valorem* taxes/subsidies, i.e., \( t_i^0 = (p_i^0 - p_i^*) / p_i^* \)

- Government chooses taxes and subsidies satisfying:

\[
\frac{t_i^0}{1 + t_i^0} = \frac{l_i - \alpha_L}{a + \alpha_L} \left( \frac{z_i^0}{e_i^0} \right) \quad \text{for } i = 1, 2, \ldots, n
\]

where \( z_i^0 = y_i(p_i^0) / m_i(p_i^0) \) is equilibrium ratio of domestic output to imports, and elasticity of import demand is \( e_i^0 = -m'_i(p_i^0)p_i^0 / m_i(p_i^0) \)
Structure of Protection

- *Ceteris paribus*, industries with high import demand elasticities (in absolute value), have smaller *ad valorem* deviations from free trade

- This result follows for two reasons:
  - government bears political cost from creating deadweight loss (if $a>0$); hence, it will prefer to raise contributions from sectors where cost is low
  - even if $a=0$, if $\alpha_L>0$, members of lobbies as a group bear deadweight loss from trade policy; owners of specific factors in industries other than $i$ bid to avoid protection in $i$, the greater the social cost
Structure of Protection

Deadweight loss issues modified by political variables in determination of equilibrium structure of protection:

- all sectors with lobbies protected by import tariffs/export subsidies, and sectors without representation face import subsidies and export taxes; i.e., organized lobbies raise prices where they get profit income, and lower prices of goods they consume

- political power of organized lobbies reflected in ratio of domestic output to imports – with large domestic output, specific-factor owners gain from price increase; but, for a given import demand elasticity, economy has little to lose from protection when import volume is low
Structure of Protection

- the less weight attached to aggregate welfare compared to campaign financing, the larger are trade taxes/subsidies; however, even if $a=0$, interest groups will not want distortions to grow too large

- as share of voters that are members of lobby increases, rates of protection for organized industries decline; in limit if all voters are in lobby ($\alpha_L=1$) and all lobbies are represented ($I_i=1$ for all $i$), free trade prevails in all markets – groups neutralize each other

- if all interest-group members are small fraction of voting population, ($\alpha_L=0$) no trade taxes/subsidies applied to goods not represented by a lobby ($I_i=0$) – when political contributors are few, stand little to gain from intervention in sectors other than their own
Motivation

- Evidence suggest industries experiencing losses more likely to get protection, e.g., Trefler (1993) finds it is higher where import penetration has increased.

- Not consistent with models predicting protection should be applied to expanding sectors.

- Freund and Özden (2008) construct political support model where preferences display behavioral characteristics such as loss aversion and reference dependence.

- Changes dynamics of protection: *standard effect* – protection is increasing in output of domestic industry; *behavioral effect* – protection increases after negative shock.
Model

- Specific-factors model with lobbying for protection and incorporate behavioral assumptions

- Key insight is that welfare is dependent on both *current* state and *change* in states; following Kahneman and Tversky (1991):
  - *reference dependence*: gains and losses relative to reference point matter
  - *loss aversion*: losses have larger effect on welfare than gains
  - *diminishing sensitivity*: marginal value of gains and losses decrease with their size

- Introduce elements into Grossman and Helpman (1994)
Trade Policy

Optimal trade tax is:

\[
\frac{t_i^0}{1 + t_i^0} = \frac{(l_i - \alpha_L) + [(a + l_i)h'\left(\frac{\pi(\bar{p}_i) - \pi(p_i)}{\alpha_L N}\right)]}{a + \alpha_L},
\]

Behavioral term [...] has important implications – even if all sectors are organized \((l_i=1)\), and everyone is in a lobby group \((\alpha_L=1)\), trade is still distorted if some agents experience loss aversion at free trade:

\[
\frac{t_i^0}{1 + t_i^0} = h'(\cdot)\left(\frac{z_i^0}{e_i^0}\right).
\]
Protection of US Steel Sector

Freund and Özden argue US steel industry is one where loss aversion has mattered:

- protection in 1980s and early-1990s prevented domestic prices falling below reference price
- move away from compensating protection in late-1990s as world prices fell further and US firms lost market share
- loss-making sector of industry, high-cost integrated steel mills, lobbied for protection

Incorporating loss aversion and reference dependence into utility functions helps explain structure and dynamics of protection