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:**

$$u = x_0 + \sum_{i=1}^{n} u_i(x_i) \qquad (1)$$

where x_0 is consumption of good 0, and x_i consumption of goods i =1,2,….,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:**

$$V(p,E) = E + s(p) \qquad (2)$$

where $p=(p_1,p_2,\ldots,p_n)$ is vector of domestic prices, and consumer surplus is, $s(p) \equiv \sum_i u_i[d_i(p_i)] - \sum_i p_i d_i(p_i)$

- **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:

$$r(p) = \sum_i (p_i - p_i^*)\left[d_i(p_i) - \frac{1}{N} y_i(p_i)\right] \qquad (3)$$

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:

$$W_i(p) \equiv \ell_i + \pi_i(p_i) + \alpha_i N[r(p) + s(p)] \qquad (4)$$

where ℓ_i is total labor supply (income) of owners of specific factors used in *i* and α_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:

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

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

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

- 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.,** $t_i^0 \equiv (p_i^0 - p_i^*) / p_i^*$

- **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 (α_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, (α_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:

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

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

$$\frac{t_i^0}{1+t_i^0} = h'(.)\left(\frac{z_i^0}{e_i^0}\right)$$

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**