Determinants of Protection in Thai Manufacturing

by
Archanun Kohpaiboon


Issues
- While progress on tariff reduction has occurred as a consequence of the Uruguay Round, it is clear that much remains to be done.
- The recent considerable decline in average tariff rates in developing countries, especially in Asia and Africa seems to take place in an uneven manner thereby increasing tariff dispersion.
- This implies that countries with low average tariff rates are likely to have very high tariff peaks and exhibit escalation at higher levels of disaggregation.

Presentation’s Outline
- Issues
- Protection in Thai Manufacturing
- Analytical Framework
- Model
- Data
- Empirical Results
- Conclusions

Why is Thai manufacturing an interesting case study for this issue?

1. There has been no systematic analysis of the determinants of trade protection in Thailand. Previous studies for Thailand (e.g. see Akrasanee and Ajanant, 1986; World Bank, 1988; Athukorala, Jongwanich and Kohpaiboon, 2004; TDRI, 2006) are limited to estimating ERP.

2. As Thailand has pursued a cascading tariff structure over the past four decades, the level of protection has varied across industries considerably.

Such understanding would also contribute positively to the effort to further reduce tariffs and perhaps making substantial inroads into the other negotiations occurring as part of the World Trade Organisation’s (WTO) Doha round.

Despite its policy relevance, there are very few comprehensive treatments of the political and economic determinants of protection.

Therefore, this paper seeks to fill this gap through an in-depth case study of the Thai manufacturing sector.

Whilst there is a consensus regarding the benefits of freer trade and more neutralized trade policy regimes, in practice protection continues to exist.

Even though the traditional argument that interest groups lobby for protection could provide an explanation for dispersed protection across industries, this argument is, at best, tenuous.

A better understanding of what factors drive the divergence between theory and practice would help economists to convey to policymakers, and to the public, the benefits from freer trade.

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Protection in Thai Manufacturing

- As in other developing countries, Thailand implements both tariff and quantitative restrictions (QRs) as trade policy instruments, but historically, there has been greater reliance on tariffs rather than QRs.

- Thailand launched the first national economic development plan in 1961 with an import substitution regime to promote industrialization. Tariffs were the major instrument used to influence the country’s development path.

- Significant reductions in tariff began in 1988 starting with those on electrical and electronic goods as well as inputs into these products.

- As part of its commitments under the WTO, a comprehensive plan for tariff reduction and rationalization was proposed in 1990 and implemented between 1995 and 1997.

- In mid-1997, the reform process was temporarily interrupted by the financial crisis.

- Tariff restructuring has received renewed emphasis as an essential part of overall economic reforms aimed at strengthening efficiency and competitiveness after the crisis.

Table 2
Average Tariff Rates in Selected Asian Countries

<table>
<thead>
<tr>
<th>Year</th>
<th>China</th>
<th>Indo</th>
<th>Malay</th>
<th>Phil</th>
<th>Thai</th>
<th>Viet</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990-91</td>
<td>40.3</td>
<td>20.6</td>
<td>16.9</td>
<td>27.8</td>
<td>39.8</td>
<td>n.a.</td>
</tr>
<tr>
<td>1995-96</td>
<td>23.6</td>
<td>13.2</td>
<td>8.7</td>
<td>14.3</td>
<td>17.0</td>
<td>13.4</td>
</tr>
<tr>
<td>2000-01</td>
<td>17.5</td>
<td>8.4</td>
<td>10.2</td>
<td>7.5</td>
<td>18.4</td>
<td>16.5</td>
</tr>
<tr>
<td>2005-06</td>
<td>10.2</td>
<td>6.9</td>
<td>7.2</td>
<td>6.2</td>
<td>11.1</td>
<td>16.8</td>
</tr>
</tbody>
</table>

Table 3
Coverage Ratio of NTBs in Import Trade (per cent)

<table>
<thead>
<tr>
<th>Year</th>
<th>China</th>
<th>Indo</th>
<th>Malay</th>
<th>Phil</th>
<th>Thai</th>
<th>Viet</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984-87</td>
<td>10.6</td>
<td>23.2</td>
<td>11.3</td>
<td>5.7</td>
<td>2.1</td>
<td>n.a.</td>
</tr>
<tr>
<td>1988-90</td>
<td>9.4</td>
<td>4.0</td>
<td>2.6</td>
<td>1.5</td>
<td>2.8</td>
<td>1.8</td>
</tr>
<tr>
<td>1991-93</td>
<td>3.7</td>
<td>2.8</td>
<td>2.1</td>
<td>2.3</td>
<td>2.8</td>
<td>1.8</td>
</tr>
<tr>
<td>1997-2000</td>
<td>12.4</td>
<td>8.5</td>
<td>5.5</td>
<td>2.1</td>
<td>3.1</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Share of 4-Digit HS Categories of Tariffs in Thailand (1989–2008)

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>t = 0</td>
<td>2.5</td>
<td>2.6</td>
<td>5.6</td>
<td>5.7</td>
<td>6.0</td>
</tr>
<tr>
<td>0 &lt; t ≤ 5</td>
<td>14.4</td>
<td>17.3</td>
<td>33.3</td>
<td>37.7</td>
<td>48.8</td>
</tr>
<tr>
<td>5 &lt; t ≤ 10</td>
<td>14.2</td>
<td>17.6</td>
<td>14.1</td>
<td>14.2</td>
<td>14.8</td>
</tr>
<tr>
<td>10 &lt; t ≤ 15</td>
<td>12.7</td>
<td>3.2</td>
<td>3.9</td>
<td>4.5</td>
<td>3.6</td>
</tr>
<tr>
<td>15 &lt; t ≤ 20</td>
<td>15.4</td>
<td>16.4</td>
<td>21.4</td>
<td>17.9</td>
<td>8.4</td>
</tr>
<tr>
<td>20 &lt; t ≤ 30</td>
<td>15.8</td>
<td>16</td>
<td>13.8</td>
<td>14.3</td>
<td>12.7</td>
</tr>
<tr>
<td>30 &lt; t ≤ 100</td>
<td>25</td>
<td>26.8</td>
<td>7.8</td>
<td>5.8</td>
<td>5.7</td>
</tr>
</tbody>
</table>

A cascading tariff structure has been the key characteristic of the tariff structure in Thailand over the past three decades, even though the government has tended to lower levels of tariff protection.

As a consequence of the cascading tariff structure, nominal protection does not provide a precise picture of protection in a particular industry. Effective protection in each industry depends not only on the tariff rate applicable to that sector, but also on tariffs of production input to that sector.
Hence, there is an incentive for interest groups to form
lobby group in order to exert political pressure for
protectionist actions.

The incentive to form interest groups depends on three
key industry characteristics;
1. Growth prospects
Industries that exhibit a declining trend and/or display
a rapid increase in import penetration levels are
likely to ask for protection.
2. Nature of market orientation
For industries with a high degree of export orientation,
gains from protection tend to less.

ERP variation across industries remained high, measured
by its coefficient variation.

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</tr>
</thead>
<tbody>
<tr>
<td>CV (% of mean)</td>
<td>120</td>
<td>200</td>
<td>131.3</td>
<td>143.9</td>
</tr>
</tbody>
</table>

Interestingly, the pattern of ERP estimates across
industries did not change significantly between 1980 and
2003 as indicated by the high rank correlation
coefficients during the period 1975-2002 and 1975-
2003, respectively (58 and 49 per cent).

The implication is that a sector that did receive high
protection in the past is likely to subject to relatively
high tariff by now.

3. Ownership structure.
Subsidiaries of multinational enterprises that are
engaged in considerable international trade in inputs and
outputs would prefer more liberal trade.

Furthermore, successes of lobby attempt depend on their
ability to overcome the "free-rider problem", i.e. benefits
do not accrue to a narrow group of stakeholders in the
protected industry, whereas costs are spread over a much larger number of
consumers, each of whom loses only a small amount.

Analytical Framework
A level of protection granted to a particular industry is
determined by the interaction between demand for, and
supply of protection.

Demand for Protection

The effect of imposing protection is asymmetric. The
benefits of trade protection likely accrue to a narrow
group of stakeholders in the protected industry, whereas
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consumers, each of whom loses only a small amount.
1. Temporary protection can be justified in industries that have potential to generate benefits for the rest of an economy (e.g., generating employment, creating value added and generating backward linkages) but need time to acquire production efficiency, (the ‘infant industry’ argument).

2. Governments tend to protect industries that are experiencing output contraction and/or are threatened by import competition to prevent severe structural change and undesirable side effects (the ‘Lean against the wind’ argument).

\[ \text{Model} \]

\[ PRO_j = \alpha + \beta_j \text{CON}_j + \beta_j \text{G}_j + \beta_j \text{IMC}_j + \beta_j \text{EX}_j + \beta_j \text{FOR}_j + \beta_j \text{KL}_j + \beta_j \text{VAD}_j + \beta_j \text{MES}_j + \beta_j \text{BWL}_j + \beta_j \text{VRT}_j + \mu \]

\[ PRO_j = \text{Protection level of industry } j^{th}, \text{ measured alternatively by ERP and NRP} \]

\[ \text{CON}_j (+) = \text{Market concentration of industry } j^{th}, \text{ measured by CR5 and Herfindahl-Hirshman index} \]

\[ G_j (-) = \text{The average output growth of industry } j^{th} \]

\[ \text{IMC}_j (+) = \text{A change in import penetration ratio of industry } j^{th} \]

\[ \text{EX}_j (-) = \text{Export-output ratio of industry } j^{th} \]

\[ \text{FOR}_j (-) = \text{Foreign presence in industry } j^{th}, \text{ measured alternatively by output, employment and capital shares.} \]

\[ \text{KL}_j (-) = \text{Capital-labour ratio of industry } j^{th} \]

\[ \text{VAD}_j (+) = \text{Value added of industry } j^{th} \]

\[ \text{MES}_j (+) = \text{Average firm size of industry } j^{th} \]

\[ \text{BWL}_j (+) = \text{Backward (inputs) linkages of industry } j^{th} \]

\[ \text{VRT}_j (+/0) = \text{Value added as a percentage of total cost of industry } j^{th} \]

\[ \mu_j = \text{A stochastic error term, representing the omitted other influences} \]

**Rationale of test bargain in the political process by Caves (1976: 293)**

\[ \text{ERP}_j = \frac{\text{NRP}_j - \sum \text{a}_j \text{a}_j}{\text{1} - \sum \text{a}_j \text{a}_j} = \frac{\text{NRP}_j - (1 - \text{VRT}_j) \text{t}_j}{\text{VRT}_j} \]

\[ \text{NRP}_j = \text{VRT}_j \text{ERP}_j + (1 - \text{VRT}_j) \text{t}_j \]

If the bargaining is on \( \text{ERP} \), we would not observe significant relationship between \( \text{ERP} \) and \( \text{VRT}_j \)

**Data**

- NRP and ERP estimates are constructed, based on the input structure from Thailand’s input-output table 2000.

- Annual output growth (\( G \)), changes in import penetration ratio (\( IMC \)), export-output ratio (\( EX \)) and value added (\( VAD \)) are based on data available in the input-output tables in 1995 and 2000, obtained from The National Economic and Social Development Board (NESDB) in Thailand.

- Backward linkages (\( BWL \)) index is based on Leontief Inter-industry Accounting method.

- Data for capital-labour ratio (\( KL \)), concentration indices (i.e., Herfindahl-Hirshman index of concentration (\( HHI \)), market share of the first five largest plants (\( CR5 \)), the average firm size (\( MES \)) and measures of foreign presence (\( FOR \)) are compiled from unpublished returns to the Industrial Census 1997 (data for 1996) conducted by the National Statistics Office (NSO), the only available industrial census in Thai manufacturing so far.
Results

- As all independent variables are pre-determined, the model was estimated using ordinary least squares (OLS) with emphasis on diagnostic test performances relevant for inter-industry cross-sectional analysis (functional form, residual normality and heteroskedasticity).

- Cook’s Distance was used to identify suspected outliers. The effect of sample outliers is accommodated by introducing binary dummy variable.

- The results are not sensitive to alternative measures of foreign presence and industry concentration. Based on the overall statistical significant (F-test), output share and HHI are used.

Equation 6.4

$$ERP_i = 0.23 + 1.2HHI_i^2 + 0.36IMC - 0.18FOR - 0.06KL$$

$$(0.83) (1.70)*** (1.47)* (1.23)* (-2.10)***$$

$$+ 0.03MES + 0.15BWL$$

$$(1.00)* (1.09)*$$

# obs. = 68; Adj $R^2 = 0.49; F - Stat = 6.94 (p = 0.00);$$

RESET $\chi^2 = 1.67 (p = 0.20); JB$ $\chi^2 = 1.24 (p = 0.54);$

White $\chi^2 = 2.25 (p = 0.13)$

Conclusion

- Employment and backward linkage generations have been important factors in the decision to grant protection.

- One implication that can be further drawn together with the insignificance of $VAD$ is whether industries are or are not “footloose” is determined by employment and backward linkage generation rather than its created value added per se.

- The coefficient corresponding to MES suggests that protection can be granted on ground that it provides opportunities for industries to reach the minimum efficient scale and gain maturity.

- Protection tends to be granted to industries that have a high level of industry concentration and are experiencing increased import competition.

- The relatively open foreign investment policy regime in Thailand means that policymakers are more responsive to requests made by foreign investors, including requests for tariff cuts.

- The decision to grant protection to Thai industries is justified by the ability of industries to generate employment and backward linkage to the rest of the economy.