“Endogenous Free Trade Agreements and Foreign Lobbying”

Web Appendix

Appendix A: Proofs

Proof of Proposition 1. Without political economy factors, equation (1) implies the following relationship between the external and internal tariffs:

\[ \varepsilon t^{ROW} = -\frac{1}{\sigma} + (\sigma - 1)t^P s^P + \frac{1 - \frac{\sigma - 1}{\sigma}}{1 + \alpha} s^H \]  

(1A)

Totally differentiating (1A) and assuming constant elasticity of import demand

\[
\left[ \varepsilon - \frac{\sigma - 1}{\sigma} \frac{1}{1 + \alpha} \frac{\partial s^H}{\partial t^{ROW}} - (\sigma - 1) \frac{t^P}{(1 + \alpha)} \frac{\partial s^P}{\partial t^{ROW}} \right] dt^{ROW} = \\
= \left[ \frac{\sigma - 1}{\sigma} \frac{1}{1 + \alpha} \frac{\partial s^H}{\partial t^P} + (\sigma - 1) \frac{t^P}{(1 + \alpha)} \frac{\partial s^P}{\partial t^P} \right] dt^P
\]

For any country \( j \), \( s^j = P^{\sigma - 1} (p^j)^{1 - \sigma} \) and \( \frac{\partial P^j}{\partial t^P} = \frac{s^j}{1 + t^P} \).

\[
\frac{\partial s^j}{\partial t^P} = (p^j)^{1 - \sigma} (\sigma - 1) P^\sigma \frac{\partial P^j}{\partial t^P} = \frac{(\sigma - 1) s^j s^i}{1 + t^i} \quad \text{for } i \neq j.
\]

\[
\frac{\partial s^i}{\partial t^i} = (p^j)^{1 - \sigma} (\sigma - 1) P^\sigma \frac{\partial P^i}{\partial t^i} + P^{\sigma - 1} (\sigma - 1) (p^j)^{-\sigma} \frac{\partial p^j}{\partial t^i} = -(\sigma - 1)(1 - s^i) \frac{s^i}{1 + t^i}
\]

With these results, the expression for the total differential can be re-arranged:

\[
\left[ \varepsilon - \frac{(\sigma - 1) s^{ROW}}{1 + t^{ROW}} \left( \frac{\sigma - 1}{\sigma} \frac{1}{1 + \alpha} s^H + (\sigma - 1) t^P s^P \right) \right] dt^{ROW} = \\
= \frac{(\sigma - 1) t^P}{1 + t^{ROW}} \left[ 1 + t^P + \frac{\sigma - 1}{\sigma} \frac{1}{1 + \alpha} s^H - (\sigma - 1) t^P (1 - s^P) \right] dt^P
\]

\[
\left[ \frac{\sigma}{\sigma - 1} - s^{ROW} - \frac{\sigma - 1}{\sigma} \frac{1}{1 + \alpha} s^{H,RW} - (\sigma - 1) t^P s^P s^{ROW} \right] dt^{ROW} = \\
= \left[ s^P + \frac{\sigma - 1}{\sigma} \frac{1}{1 + \alpha} s^{H,RW} - (\sigma - 1) t^P (1 - s^P) s^{ROW} \right] dt^P
\]

Using the definition of import tariff, the last expression in square brackets on the left-hand side takes the form:

\[
(\sigma - 1) \frac{t^P}{1 + t^{ROW}} s^P s^{ROW} = \frac{1}{(1 + \alpha)(1 + t^P)} \left( \frac{\sigma - 1}{\sigma} \right)^2 s^H s^P s^{ROW}
\]

Thus, the left-hand side can be written as \( \frac{\sigma}{\sigma - 1} - s^{ROW} - g_1 s^H - g_2 s^P \), where \( g_1 = -\frac{\sigma - 1}{\sigma} \frac{s^{ROW}}{(1 + \alpha)(1 + t^{ROW})} \) and \( g_2 = (\frac{\sigma - 1}{\sigma})^2 \frac{s^{H,RW}}{(1 + \alpha)(1 + t^{ROW})} \) are less than one, \( g_1, g_2 \in [0, 1] \). It can be seen the left-hand side is always positive for any \( \sigma > 1 \).

Using similar transformation of the negative term on the right-hand side, the expression in square brackets on the left-hand side becomes:

\[
s^P \left[ 1 + \left( \frac{\sigma - 1}{\sigma} \right) \frac{s^H}{(1 + \alpha)(1 + t^P)} - \left( \frac{\sigma - 1}{\sigma} \right)^2 \frac{(1 - s^P)s^H}{(1 + \alpha)(1 + t^P)} \right] > 0
\]
Therefore, without political economy factors, \( \frac{dI^R}{dt_{ROW}} \geq 0 \) for any \( \sigma \), for any country sizes (measured by the number of firms), and for any costs structure of domestic, partner country’s and ROW firms.

**Proof of Proposition 2.** Using (1) and (2), calculate partial derivatives of \( t_F^H \) and \( t_0^H \) with respect to the government’s valuation of contributions:

\[
\frac{\partial t_F}{\partial \alpha} = \frac{\sigma - 1}{\sigma} \left( \frac{1}{1 + \alpha} \left[ I^H s_F^H + b_l P s_F^P - c I^R_{ROW} (1 - s_F^H) \right] \right)
\]

\[
\frac{\partial t_0}{\partial \alpha} = \frac{\sigma - 1}{\sigma} \left( \frac{1}{1 + \alpha} \left[ I^H s_0^H - b_l P (k_0^P - s_0^P) - c I^R_{ROW} (k_0^R_{ROW} - s_0^R_{ROW}) \right] \right)
\]

where the difference between \( s_F^H \) and \( s_0^H \) comes only from the reduction of within-FTA tariff. The change in responsiveness of external tariff in a result of an FTA formation to governmental political bias takes the form:

\[
\frac{\partial (t_F - t_0)}{\partial \alpha} = I^H \sigma - 1 \left( \frac{1}{1 + \alpha} \left[ s_F^H - s_0^H \right] \right) + b_l P \sigma - 1 \left( \frac{1}{1 + \alpha} \left[ s_F^P + \frac{k_0^P - s_0^P}{\varepsilon_0} \right] \right)
\]

\[
-c I^R_{ROW} \sigma - 1 \left( \frac{1}{1 + \alpha} \left[ (1 - s_0^H) - \frac{k_0^P - s_0^P}{\varepsilon_0} \right] \right)
\]

(2A)

When only domestic producers are organized into lobbying \( \frac{\partial (t_F - t_0)}{\partial \alpha} = \sigma - 1 \left( \frac{1}{1 + \alpha} \left[ s_F^H - s_0^H \right] \right) \). First, \( s_F^H < s_0^H \) because preferential access of firms from an FTA partner country leads to market share reallocation from domestic producers and ROW importers to the partner country. Second, \( \varepsilon_F = \sigma - (\sigma - 1)s_F^R_{ROW} > \sigma - (\sigma - 1)(s_0^P + s_0^R_{ROW}) = \varepsilon_0 \) for any \( \sigma > 1 \), i.e. without trade agreement demand for imports is less responsive to tariff change since a larger set of differentiated varieties are subject to tariff. These two conditions imply that for domestic lobbying

\[
\frac{\partial (t_F - t_0)}{\partial \alpha} = \sigma - 1 \left( \frac{1}{1 + \alpha} \left[ s_F^H - s_0^H \right] \right) < 0, \text{ for } I^H = 1, I^P = I^R_{ROW} = 0 \quad (3A)
\]

The above result is similar to Ornelas (2005) and it suggests that the external tariff will fall more as a results of an FTA formation when there is only home lobbying and the government is more politically motivated. It follows from (3A) that when the government is politically biased (\( \alpha > 0 \)), presence of an organized domestic lobbying will cause a reduction in external tariff.

Similarly, when only ROW lobbying is politically organized equation (2A) implies:

\[
\frac{\partial (t_F - t_0)}{\partial \alpha} = -c \sigma - 1 \left( \frac{1}{1 + \alpha} \left[ (1 - s_0^R_{ROW}) - \frac{k_0^R_{ROW} - s_0^R_{ROW}}{\varepsilon_0} \right] \right) < 0 \text{ for } I^R_{ROW} = 1, I^H = I^P = 0 \quad (4A)
\]

The expression in square brackets equals to

\[
\left[ \frac{1}{\varepsilon_F} - \frac{k_0^R_{ROW}}{\varepsilon_0} \right] + \left[ \frac{s_0^R_{ROW}}{\varepsilon_0} - \frac{s_0^R_{ROW}}{\varepsilon_F} \right]
\]

The second term is similar to (3A) and is always positive. The first term is also positive because

\[
\frac{k_0^R_{ROW}}{\varepsilon_0} = \frac{\sigma - (\sigma - 1) s_0^P + s_0^R_{ROW} )}{(s_0^P + s_0^R_{ROW})} = \frac{\sigma}{(s_0^P + s_0^R_{ROW})} - (\sigma - 1) s_0^R_{ROW} = \varepsilon_F - (\sigma - 1) (s_0^R_{ROW} - s_0^R_{ROW}) < \varepsilon_F
\]

Therefore, \( \frac{\partial (t_F - t_0)}{\partial \alpha} < 0 \) and it follows from (4A) that when the government is politically biased (\( \alpha > 0 \)), presence of an organized ROW lobbying will cause a reduction in external tariff.
When only partner country’s exporting firms are politically organized, equation (2A) implies:

$$\frac{\partial (t_F - t_0)}{\partial a} = \frac{b}{\sigma} - 1 \left[ \frac{k^P_F}{\varepsilon_F} + \frac{k^P_0 - s^P_0}{\varepsilon_0} \right] > 0, \text{ for } I^P = 1, I^H = I^{ROW} = 0$$ \hfill (5A)

Since $k^P_0 \geq s^P_0$, the above expression is always positive. The element $\frac{s^P_C}{\varepsilon_F}$ reflects an extra pressure by a partner country’s lobbying for more protection once FTA is formed, while $\frac{k^P_0 - s^P_0}{\varepsilon_0}$ represents the effect of terminating lobbying activity by a partner country against protection.

**Proof of Proposition 3.** The proof follows directly from (2A) when $I^P = I^H = I^{ROW} = 1$ and $b = c = 1$. In this case $\frac{\partial (t_F - t_0)}{\partial a} = 0$, which means that political bias of the government does not affect the FTA external tariff and the result will be the same as with the welfare-maximizing government in Proposition 1.

**Proof of Proposition 4.** I prove this proposition by showing that the derivative of the change in home and ROW political contributions caused by an FTA with respect to the government’s political bias parameter $a$ is negative. From equation (4) the change in political contributions from group $j$ equals to

$$\Delta_F C^j = a \sum_{i \neq j} v_i t^i \{ \Delta_F W^i(t_{-j}) - \Delta_F W^i(t_e) \} + \{ \Delta_F W(t_{-j}) - \Delta_F W(t_e) \}$$

I want to show that the derivative $\frac{\partial \Delta_F C^j}{\partial a}$ is negative for $j = \{ H, ROW \}$. In this case, whenever $a > 0$ contributions from country $j$ firms will decrease after the trade agreement is signed.

Recall that any equilibrium trade policy $t^*$ satisfies the first-order condition on the joint welfare function:

$$\frac{\partial W(t^*)}{\partial t^*} + a I^H \frac{\partial W^H(t^*)}{\partial t^*} + ab I^P \frac{\partial W^P(t^*)}{\partial t^*} + ac I^{ROW} \frac{\partial W^{ROW}(t^*)}{\partial t^*} = 0$$

It follows that $a \sum_{i \neq j} v_i t^i \Delta_F W^i(t^*) + \Delta_F W(t^*) = -av_i \Delta_F W^j(t^*)$ for any equilibrium policy vector $t^*$. Taking into account that $W^j = \Pi^j$ for the partner country and ROW firms, we can re-write the expression for $\Delta_F C^j$ in a more convenient form as a function of a tariff for the ROW imports:

$$\Delta_F C^j = av_i \{ \Delta_F \Pi^j(t_e) - \Delta_F \Pi^j(t_{-j}) \}$$

Our object of interest is the derivative of $\Delta_F C^j$ with respect to $a$:

$$\frac{\partial \Delta_F C^j}{\partial a} = av_i \left\{ \frac{\partial \Delta_F \Pi^j(t_e)}{\partial a} - \frac{\partial \Delta_F \Pi^j(t_{-j})}{\partial a} \right\} =

= av_i \left\{ \frac{\partial \Pi^j(t_e)}{\partial a} \frac{\partial \Pi^j}{\partial t_e} - \frac{\partial \Pi^j(t_{-j})}{\partial a} \frac{\partial \Pi^j}{\partial t_{-j}} - \frac{\partial \Pi^j(t_e)}{\partial a} \frac{\partial t_e}{\partial t_{-j}} + \frac{\partial \Pi^j(t_{-j})}{\partial a} \frac{\partial t_{-j}}{\partial t_e} \right\}$$

The responsiveness of the external tariff with and without the FTA to the political bias parameter were derived in Proposition 2:

$$\frac{\partial t_F}{\partial a} = \frac{1}{\varepsilon_F} \left\{ \frac{\sigma - 1}{\sigma} \frac{1}{1 + \alpha} \left[ I^H s^H_F + b I^P s^P_F - c I^{ROW} (1 - s^{ROW}_F) \right] \right\}$$

$$\frac{\partial t_0}{\partial a} = \frac{1}{\varepsilon_0} \left\{ \frac{\sigma - 1}{\sigma} \frac{1}{1 + \alpha} \left[ I^H s^H_0 + b I^P (k^P_0 - s^P_0) - c I^{ROW} (k^{ROW}_0 - s^{ROW}_0) \right] \right\}$$
Profits of an organized group from country $j$ in the domestic market are proportional to the group’s market share: $\Pi^j = \sigma^{-1}s^j$. The derivatives of the market shares with respect to the import tariff in the presence of an FTA were derived in Proposition 1:

$$\frac{\partial s^j_F}{\partial t_e} = \frac{(\sigma - 1)s^j_F s^j_F}{1 + t_e} \quad \text{for } i \neq j,$$

$$\frac{\partial s^F}{\partial t_e} = -(\sigma - 1)\left(1 - s^F\right)\frac{s^F}{1 + t_e}$$

The same derivatives in the absence of an FTA differ from the ones above because without FTA the tariff change will affect larger set of imported products, which affects the responsiveness of the aggregate price index:

$$\frac{\partial s^H_0}{\partial t_e} = (p^k)^{1-\sigma}(\sigma - 1)P^\sigma \frac{\partial P}{\partial t_e} = (\sigma - 1)s^H_0 \left(\frac{s^P_0 + s^P_{ROW}}{1 + t_e}\right)$$

$$\frac{\partial s^P_0}{\partial t_e} = (p^P)^{1-\sigma}(\sigma - 1)P^\sigma \frac{\partial P}{\partial t_e} = (\sigma - 1)s^P_0 \left(\frac{1 - s^P_0 - s^P_{ROW}}{1 + t_e}\right)$$

$$\frac{\partial s^{ROW}_0}{\partial t_e} = (p^{ROW})^{1-\sigma}(\sigma - 1)P^\sigma \frac{\partial P}{\partial t_e} = (\sigma - 1)s^{ROW}_0 \left(\frac{1 - s^P_0 - s^P_{ROW}}{1 + t_e}\right)$$

This information is enough to derive the required result for the home country lobby:

$$\frac{\partial \Delta e^H(t_e)}{\partial a} = \frac{\partial \Pi^H(t_e)}{\partial \Pi^H} \frac{\partial \Pi^H(t_0)}{\partial \Pi^H} \frac{\partial \Pi^H}{\partial \Pi^H} =$$

$$\begin{align*}
&= \left(\frac{\sigma - 1}{\sigma}\right)^2 \frac{s^{ROW}_{ROW} s^H_F}{(1 + \alpha)(1 + t_0)} \left\{ \frac{s^H_F}{\epsilon^F} \right. - \frac{s^H_{ROW} s^H_F}{\epsilon^F} + \frac{b}{(1 + \alpha)(1 + t_0)} \left( \frac{t^P s^P_F s^P_F}{\epsilon^F} + \frac{s^H_{ROW} s^{ROW}(k^P_0 - s^P_F)}{\epsilon^F} \right) \right\} - \\
&\quad - \left(\frac{\sigma - 1}{\sigma}\right)^2 \frac{s^{ROW}_{ROW} s^H_F}{(1 + \alpha)(1 + t_0)} \left\{ \frac{s^H_F}{\epsilon^F} \right. - \frac{s^H_{ROW} s^H_F}{\epsilon^F} + \frac{b}{(1 + \alpha)(1 + t_0)} \left( \frac{t^P s^P_F s^P_F}{\epsilon^F} + \frac{s^H_{ROW} s^{ROW}(k^P_0 - s^P_F)}{\epsilon^F} \right) \right\} - \\
&\quad - \left(\frac{\sigma - 1}{\sigma}\right)^2 \frac{s^{ROW}_{ROW} s^H_F}{(1 + \alpha)(1 + t_0)} \left\{ \frac{s^H_F}{\epsilon^F} \right. - \frac{s^H_{ROW} s^H_F}{\epsilon^F} + \frac{b}{(1 + \alpha)(1 + t_0)} \left( \frac{t^P s^P_F s^P_F}{\epsilon^F} + \frac{s^H_{ROW} s^{ROW}(k^P_0 - s^P_F)}{\epsilon^F} \right) \right\}
\end{align*}$$

$$\frac{\partial \Delta e^H(t_0)}{\partial a} = \frac{\partial \Pi^H(t_0)}{\partial \Pi^H} \frac{\partial \Pi^H(t_0)}{\partial \Pi^H} \frac{\partial \Pi^H}{\partial \Pi^H} =$$

$$\begin{align*}
&= -b \left(\frac{\sigma - 1}{\sigma}\right)^2 \frac{s^{ROW}_{ROW} s^H_F}{(1 + \alpha)(1 + t_0)} \left\{ \frac{t^P s^P_F s^P_F}{\epsilon^F} + \frac{s^H_{ROW} s^{ROW}(k^P_0 - s^P_F)}{\epsilon^F} \right\} - \\
&\quad + c \left(\frac{\sigma - 1}{\sigma}\right)^2 \frac{s^{ROW}_{ROW} s^H_F}{(1 + \alpha)(1 + t_0)} \left\{ \frac{t^P s^P_F s^P_F}{\epsilon^F} + \frac{s^H_{ROW} s^{ROW}(k^P_0 - s^P_F)}{\epsilon^F} \right\} - \\
&\quad - \left(\frac{\sigma - 1}{\sigma}\right)^2 \frac{s^{ROW}_{ROW} s^H_F}{(1 + \alpha)(1 + t_0)} \left\{ \frac{t^P s^P_F s^P_F}{\epsilon^F} + \frac{s^H_{ROW} s^{ROW}(k^P_0 - s^P_F)}{\epsilon^F} \right\}
\end{align*}$$

It follows that

$$\frac{\partial \Delta e^C}{\partial a} = \frac{\partial \Delta e^H(t_e)}{\partial a} - \frac{\partial \Delta e^H(t_0)}{\partial a} = \frac{(\sigma - 1)^2}{\sigma + (1 + \alpha)} \left\{ \frac{s^H_F}{\epsilon^F} \right. - \frac{s^H_{ROW} s^H_F}{\epsilon^F} + \frac{b}{(1 + \alpha)(1 + t_0)} \left( \frac{t^P s^P_F s^P_F}{\epsilon^F} + \frac{s^H_{ROW} s^{ROW}(k^P_0 - s^P_F)}{\epsilon^F} \right) - \\
$$

$$\text{(6A)}$$

Proposition 2 states that $\frac{s^H_F}{\epsilon^F} < \frac{s^H_F}{\epsilon^F} s^{ROW}_0 < s^H_F$ and $s^{ROW}_0 > s^H_F$, which implies that $\frac{\partial \Delta e^C}{\partial a} < 0$ and contributions from domestic firms as a result of a trade agreement will fall.

Similarly, we can derive the derivative of the change in the ROW firms contributions:

$$\frac{\partial \Delta e^C_{ROW}}{\partial a} = \frac{\partial \Delta e^H_{ROW}(t_e)}{\partial a} - \frac{\partial \Delta e^H_{ROW}(t_0)}{\partial a} =$$

$$\begin{align*}
&= c \left(\frac{\sigma - 1}{\sigma}\right)^2 \frac{s^{ROW}(1 - s^{ROW})}{(1 + \alpha)(1 + t_0)} \left\{ \frac{t^P s^P_F}{\epsilon^F} + \frac{s^{ROW}(1 - s^{ROW})}{\epsilon^F} \frac{k^P_0 - s^{ROW}}{\epsilon^F} \right\} + \\
&\quad + c \left(\frac{\sigma - 1}{\sigma}\right)^2 \frac{s^P_F s^{ROW}}{(1 + \alpha)(1 + t_0)} \frac{(k^P_0 - s^{ROW})}{\epsilon^F}
\end{align*}$$

(7A)
The expression \( \frac{1 - s^0_{ROW}}{\varepsilon_F} - \frac{k^0_{ROW} - s^0_{ROW}}{\varepsilon_0} \) is positive from Proposition 2 and thus \( \frac{\partial \Delta_F C^{ROW}}{\partial a} > 0 \). This condition implies that whenever the government values political contributions, the formation of an FTA with one country will decreases the amount of contributions from the domestic …rms and increases the contributions from the third countries’ firms.

Following the same steps, we can derive the responsiveness of the profit change by the partner country’s firms as a result of the FTA formation to the government political bias parameter:

\[
\frac{\partial \Delta_F C^P}{\partial a} = \frac{\partial \Delta_F \Pi^P(t_c)}{\partial a} - \frac{\partial \Delta_F \Pi^P(t_{-i})}{\partial a} = \left( \frac{\sigma - 1}{\sigma} \right)^2 \frac{b}{(1 + \alpha)} \left( \frac{s^0_F \left( s^0_P \right)^2}{(1 + t_0)\varepsilon_F} - \frac{s^0_H s^0_P (s^0_P - s^0_F)}{(1 + t_0)\varepsilon_0} \right)
\] (8A)

The sign of this expression is indeterminate and depends on the relative market shares of domestic and ROW firms. I was able to show it only numerically (see Figure 1) that there exists a relationship \( s^0_{ROW}(s^0_H) \), where \( s^0_{ROW} \) is a decreasing function of \( s^0_H \), such that for \( s^0_{ROW} < s^0_{ROW}(s^0_H) \) contributions by partner country firms will decrease under an FTA \( \frac{\partial \Delta_F C^P}{\partial a} < 0 \) and for \( s^0_{ROW} > s^0_{ROW}(s^0_H) \) contributions will increase \( \frac{\partial \Delta_F C^P}{\partial a} > 0 \).

**Proof of Proposition 5.** Summing up (6A), (7A) and (8A), and using the fact that \( t^F = t^P \) before the FTA, we obtain the required result that \( \frac{\partial \Delta_F C}{\partial a} = 0 \) under the assumption that \( b = c = 1 \).

**Proof of Proposition 7.** The local government payoffs with and without the FTA are the following:

\[
G_0 = W_0 + aI^H C^H_0 + abI^P C^P_0 + acI^{ROW} C^{ROW}_0
\]

\[
G_F = W_F + aI^H C^H_F + abI^P C^P_F + acI^{ROW} C^{ROW}_F
\]

With multilateral trade liberalization (MTL) all import tariffs are eliminated and lobbying plays no role. Let government payoff under multilateral trade agreement be \( G_{MF} = W_{MF} \).

The MTL is welfare-improving when \( W_{MF} > W_0 \), and the government would agree to eliminate all trade barriers whenever \( G_{MF} > G_0 \). Since there are no contributions under MTL, the government will never accept it if it does not increase national welfare. However, the government may block welfare-improving MTL if:

\[
W_{MF} \in [W_0, W_0 + aC_0]
\]

In a similar way, when the FTA is in place, the government will block welfare improving MTL if:

\[
W_{MF} \in [W_F, W_F + aC_F]
\]

Therefore, whenever \( a(C_F - C_0) \) is negative, the range of MTL outcomes the government is willing to block gets smaller, while it gets larger when \( a(C_F - C_0) > 0 \). From Proposition 4, the FTA lowers political contributions from the home country lobby and raises contributions by the partner country firms.

**Proof of Proposition 10.** Following the proof of Proposition 7, the welfare-improving MTL is blocked by politically biased government in the presence of the FTA if

\[
W_{MF} \in [W_F, W_F + aC_F]
\]
Therefore, whenever $a\Delta FC_F = a \left( I_H \Delta F \Pi^H + b^H I_P \Delta F \Pi^P + c^H I_{ROW} \Delta F \Pi_{C_{i,NEW}} \right)$ is positive, the range of welfare-improving FTAs adopted by the government gets smaller. Presence of the organized domestic or partner country industry that benefit from the agreement tends to raise $\Delta FC_F$, while if both FTA industries are organized $(\Delta F \Pi^H + \Delta F \Pi^P) > 0$ implies $\Delta FC_F > 0$ for $b^H = 1$. 
Appendix B

In the main text I illustrate the viability of a welfare-reducing trade agreement for one specific set of model parameters under the assumption that only partner country firms are involved in lobbying activity. This appendix analyzes how the likelihood of each type of inefficiency is affected by various model parameters. Here, I compare each counterfactual to the benchmark specification, holding fixed all other parameters of the model.

First, I trace out the effect of increased political bias in the prospective partner country on both types of inefficiencies on Figure 1A. In this case, the positive effect of an FTA on the home country’s welfare is greater since the partner country was more protectionist, making preferential access to its market more valuable thus shifting $\Delta_F W = 0$ to the right. The $\Delta_F \Pi^P = 0$ also shifts to the right because the higher the political bias of the government, the weaker is the lobbying power of organized interests in their domestic market under the FTA (Proposition 2), i.e. $\Delta_F \Pi^P$ gets smaller when the partner country government is politically biased. It follows that the $\Delta_F W + a \Delta_F C = 0$ intersects the $\Delta_F W = 0$ locus and the home country government can still find it optimal either to block the welfare-efficient FTA or to enter a welfare-reducing trade agreement under the pressure of foreign interests.

The second counterfactual experiment is the effect of tightening regulations regarding political funding from abroad. Prohibition on accepting contributions from foreign sources by domestic political parties leads to increased risk associated with foreign contributions and biases the government’s preferences toward domestic contributions (lowers $b^H$). This situation is depicted in Figure 2A. The effect of the reduction in $b$ on $\Delta_F W$ is straightforward: it weakens the government’s motive for trade distortions and shifts the $\Delta_F W = 0$ locus up. As for the $\Delta_F \Pi^P = 0$, the effect is twofold: a smaller $b$ lowers the political rent available both before and after the FTA becomes effective. It follows that for the threshold level of the ROW market size, the net effect is positive thus shifting the $\Delta_F \Pi^P = 0$ locus to the left. In order to enter a welfare-reducing trade agreement, the government’s political bias should be greater when $b$ is small, however, the set of parameter values when a country signs a welfare-reducing trade agreement is still non-empty.

Figure 3A contrasts results for the benchmark specification to the one with a more competitive market structure. When the elasticity of substitution gets larger, both the $\Delta_F W = 0$ and $\Delta_F \Pi^P = 0$ loci shift to the right, and so does the $\Delta_F W + a \Delta_F C = 0$ locus. The intuition comes from the fact that the equilibrium tariff rate depends inversely on the import demand elasticity and, therefore, in a more competitive market there are fewer possibilities for foreign interests to lobby for protection. This result implies that the government of a more competitive economy could enter a welfare-reducing FTA only if it has stronger preferences for political contributions. It is also true that the range of parameters values when a welfare-reducing trade agreement may be signed remains positive.

The viability of the FTA with a more productive partner country, as reflected by 20% higher costs of
production at home, is displayed in Figure 4A. Cost advantage of the partner country leads to a reallocation of market shares towards the more productive firms, making foreign lobbying more effective. As such, the FTA with a technologically advanced and politically organized industry would imply greater upward pressure for the external tariff, making the agreement more trade diverting and more attractive for partner country firms.

Finally, the analysis looks at the combined effect of domestic and foreign lobbying on the government’s decision regarding the structure of trade regime. If only domestic industries are politically organized, the FTA is always welfare-improving since the external tariff will always decrease and there is no room for trade diversion. However, the second type of inefficiency is still possible: lower contributions from domestic industries due to the FTA can outweigh an increase in welfare when the government’s preference for political contributions is high. Therefore, for large values of $a$ the presence of domestic organized interest groups would prevent the government from entering a welfare-improving FTA.

Figure 5A examines the viability of the FTA in the presence of both domestic and partner country lobbying. This can also reflect the case when a trade agreement is formed under the pressure of binational corporations operating on both countries. Solid lines show the zero isowelfare and government’s isoutility curves for the case when foreign and domestic political contributions are valued equally by policymakers. Cooperatively, domestic and partner country industries can successfully lobby for higher tariffs under the FTA, which raises their aggregate profits at the expense of third countries producers. Therefore, the $\Delta F C = 0$ locus coincides with the $n_{ROW} = 0$ line and do not cross zero isowelfare curve, which has the similar shape as before. In this case, the viability condition always lies above the zero isowelfare curve and there exists a non-empty set of parameter values for which the government can choose to sign a welfare-reducing trade agreement. However, since organized interests never lose from this FTA, they would never lobby against welfare-improving trade agreements.

The equilibrium with restrictions on foreign political contributions is represented by dashed lines in Figure 5A. A smaller $b^H$ implies that the government is less influenced by foreign interests and reluctant to set higher import tariffs. As a result, the zero isowelfare curve shifts up, while the $\Delta F C = 0$ locus shifts to the right to reflect strong negative profit-shifting and free-riding effects. $\Delta F \Pi_{F}^P$ and $\Delta F \Pi_{F}^{H}$ are both negative when the number of ROW firms is small because the external tariff would fall. Qualitatively, the outcome with domestic and foreign lobbies, where government is biased towards domestic contributions, is similar to the one with solely foreign lobbies (Figure 1): there is a range of parameter value where a government approves a welfare-reducing and blocks a welfare-improving trade agreement for political economy reasons. However, when $b^H$ falls too much, the isowelfare curve will continue to move up and to the right eventually ceasing to cross the $\Delta F C = 0$ locus, so that the viability condition will always lie below the zero isowelfare curve.
Figure 1A: Viability of a welfare-reducing FTA with a politically biased government in a partner country ($a^P = 1$).

Figure 2A: Viability of a welfare-reducing FTA with government’s preference for domestic contributions ($b^H = 0.5$).
Figure 3A: Viability of a welfare-reducing FTA with a more competitive market structure ($\sigma = 5$).

Figure 4A: Viability of a welfare-reducing FTA under cost disadvantage ($c^H = 1.2$).
Figure 5A: Viability of a welfare-reducing FTA with domestic and partner country lobbying.

\[
\Delta W = 0, I^1 = 1, b^H = 1 \\
\Delta F_W + a \Delta C = 0, I^1 = 1, b^H = 1 \\
\Delta W = 0, I^1 = 1, b^H = 0.75 \\
\Delta W + a \Delta C = 0, I^1 = 1,
\]