APPENDIX A

THE ARDL EXPRESSIONS FOR THE EXPORT SUPPLY MODEL

The conditional autoregressive distributed lag models underlying the empirical analysis of the relationship between trade liberalization and export supply are shown below.

The first ARDL expression as specified in equation 1A allows one to perform the bounds test for cointegration.

$$\Delta LQX_t = \beta_0 + \sum_{i=0}^{q_1} \beta_1 \ \Delta LPX_{t-i} + \sum_{i=0}^{q_2} \beta_2 \ \Delta LPD_{t-i} + \sum_{i=0}^{q_3} \beta_3 \ \Delta LREER_{t-i}$$

$$+ \sum_{i=0}^{q_4} \beta_4 \ \Delta LPGDP_{t-i} + \sum_{i=0}^{q_5} \beta_5 \ \Delta LXDTY_{t-i} + \sum_{i=1}^{q_6} \beta_6 \ \Delta LQX_{t-i}$$

$$+\beta_7 \ LQX_{t-1} + \beta_8 \ LPX_{t-1} + \beta_9 \ LPD_{t-1} + \beta_{10} \ LREER_{t-1}$$

$$+ \beta_{11} \ LPGDP_{t-1} + \beta_{12} \ LXDTY_{t-1} + \varepsilon_t \qquad (1A)$$

In conducting that test, equation (1A) is estimated with and without the lagged variables in level form. The null and alternative hypotheses for this test are as follows:

H_0: $\beta_7 = \beta_8 = \beta_9 = \beta_{10} = \beta_{11} = \beta_{12} = 0$ (no cointegration exists) (2A)

$H\alpha$: $\beta_7 \neq \beta_8 \neq \beta_9 \neq \beta_{10} \neq \beta_{11} \neq \beta_{12} \neq 0$ (cointegration exists) (3A)

Based on the results from estimating equation (1A) in keeping with equations (2A) and (3A), the F test statistic for the joint significance of the examined coefficients is calculated. When, for a given level of significance, α, the calculated F statistic falls above (below) the upper(lower)value of the critical bound, the null hypothesis of no cointegration among the examined variables in the model is rejected (accepted). When the value of the calculated F-statistic is, however, in between the value of the upper and lower bounds, a specific conclusion cannot be drawn. In this case, it would be necessary to determine the order of integration for the regressor variables before coming to a definitive conclusion.

The second ARDL model is specified as follows:

$$LQX_t = \phi_0 + \sum_{i=0}^{m_1} \phi_1 \; LPX_{t-i} + \sum_{i=0}^{m_2} \phi_2 \; LPD_{t-i} + \sum_{i=0}^{m_3} \phi_3 \; LREER_{t-i}$$

$$+ \sum_{i=0}^{m_4} \emptyset_4 \; LPGDP_{t-i} + \sum_{i=0}^{m_5} \emptyset_5 \; LXDTY_{t-i}$$

$$+ \sum_{i=1}^{m_6} \phi_6 \; LQX_{t-i} + \varepsilon_t \qquad (4A)$$

This model allows one to estimate the long-run elasticities for the aggregate export supply equation once cointegration has been established by the first model.

The third and final ARDL specification is as follows

$$\Delta LQX_t = \theta_0 + \sum_{i=0}^{n_1} \theta_1 \ \Delta LPX_{t-i} + \sum_{i=0}^{n_2} \theta_2 \ \Delta LPD_{t-i} + \sum_{i=0}^{n_3} \theta_3 \ \Delta LREER_{t-i}$$

$$+ \sum_{i=0}^{n_4} \theta_4 \ \Delta LPGDP_{t-i} + \sum_{i=0}^{n_5} \theta_5 \ \Delta LXDTY_{t-i} + \sum_{i=1}^{n_6} \theta_6 \ \Delta LQX_{t-i}$$

$$+ \theta_7 \, ECT_{t-1} + \varepsilon_t \qquad (5A)$$

This expression allows one to estimate the short-run coefficients for the aggregate export supply equation within an error correction framework. In equation 5A, the short-run dynamic coefficients are θ_1, θ_2, θ_3, θ_4, θ_5, and θ_6. Meanwhile, the coefficient for the lagged value of the error correction term (ECT), θ_7, indicates the speed of adjustment to the equilibrium value of exports when there is a deviation from the equilibrium value of exports.

APPENDIX B

THE ARDL EXPRESSIONS FOR THE POVERTY MODEL

For the analysis of the impact of trade liberalization on poverty, the follow ARDL unrestricted error correction model is used.

$$\Delta LPOV_t = b_0 + \sum_{i=0}^{q1} b_1 \Delta LXDTY_{t-i} + \sum_{i=0}^{q2} b_2 \Delta LRY_{t-i} + \sum_{i=0}^{q3} b_3 \Delta LEDU_{t-i}$$

$$+ \sum_{i=0}^{q4} b_4 \Delta LAGR_{t-i} + \sum_{i=1}^{q5} b_5 \Delta LPOV_{t-i} + b_6 LPOV_{t-1} + b_7 LXDTY_{t-1} + b_8 LRY_{t-1}$$

$$+ b_9 LEDU_{t-1} + b_{10} LAGR_{t-1} + \varepsilon_t \quad (1B)$$

To test for cointegration, the Pesaran et al. (2001) bounds test is applied to the above equation. The null and alternative hypotheses for that test are as follows:

H_o: $b_6=b_7=b_8=b_9=b_{10}=0$ (no co-integration exists) **(2B)**

H_α: $b_6\neq b_7\neq b_8\neq b_9\neq b_{10}\neq 0$ (co-integration exists) . **(3B)**