Technical and Data Appendix for

"Ricardian Trade and The Impact of Domestic Competition on Export Performance"

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A.1 Free Entry, Zero Profit, and Market Clearing Conditions

The following equation defines the free entry condition for industry i such that that conditional on drawing a productivity parameter higher than $\phi_{d,ic}$, the expected stream of profits is equal to the entry cost:

$$[1 - G(\phi_{d,ic})] \frac{\overline{\pi}_{ic}}{\delta} = f_e w_c^{1-\eta} s_{ic}^{\eta}, \tag{A.1}$$

where $\frac{\overline{\pi}_{ic}}{\delta}$ is the discounted constant expected profit and δ is an exogenous per period probability of firm death. The expected profit is comprised of sales in the domestic market, where expected profits are $\overline{\pi}_{d,ic}$, and sales in the foreign market, where expected profits are $\overline{\pi}_{x,ic}$, weighted by the probability of exporting:

$$\overline{\pi}_{ic} = \overline{\pi}_{d,ic} + \underbrace{\frac{1 - G(\phi_{x,ic})}{1 - G(\phi_{d,ic})}}_{p_{x,ic}} \overline{\pi}_{x,ic}, \tag{A.2}$$

where $p_{x,ic}$ represents the probability of exporting conditional on successful entry. Expected domestic profits coincide with the profits of a firm characterized by composite productivity level defined as $\left(\overline{\phi}_{d,ic}\right)^{\sigma-1} = \frac{1}{1-G\left(\phi_{d,ic}\right)} \int_{\phi_{d,ic}}^{\infty} \phi^{\sigma-1} g\left(\phi\right) d\phi$. Expected exporting profits are based on an analogous composite productivity of exporting firms, $\left(\overline{\phi}_{x,ic}\right)^{\sigma-1} = \frac{1}{1-G(\phi_{x,ic})} \int_{\phi_{x,ic}}^{\infty} \phi^{\sigma-1} g\left(\phi\right) d\phi$. The zero profit cutoff conditions $\pi_{d,ic}\left(\phi_{d,ic}\right) = 0$ and $\pi_{x,ic}\left(\phi_{x,ic}\right) = 0$, yield the following relationships:

$$\overline{\pi}_{d,ic} = w_c^{1-\eta} s_{ic}^{\eta} f \left[\left(\frac{\overline{\phi}_{d,ic}}{\phi_{d,ic}}\right)^{\sigma-1} - 1\right], \tag{A.3}$$

$$\overline{\pi}_{x,ic} = w_c^{1-\eta} s_{ic}^{\eta} f_x \left[\left(\frac{\overline{\phi}_{x,ic}}{\phi_{x,ic}}\right)^{\sigma-1} - 1\right]. \tag{A.4}$$

A.2 Proof of Proposition 1

We first derive a number of intermediate results that will be subsequently employed in the proof of the Proposition (1). From the definition of $\overline{\phi}_{d,ic}$ and $\overline{\phi}_{x,ic}$ it is useful to derive the following expressions:

$$\left(\frac{\overline{\phi}_{d,ic}}{\phi_{d,ic}}\right)^{\sigma-1} = \left(\frac{\overline{\phi}_{x,ic}}{\phi_{x,ic}}\right)^{\sigma-1} = \frac{k}{k+1-\sigma}. \tag{A.5}$$

Combining equations (A.1)-(A.5) and using the Pareto CDF yields the following condition:

$$\delta f_e \frac{k+1-\sigma}{\sigma-1} = f\left(\frac{\phi_{m,ic}}{\phi_{d,ic}}\right)^k + f_x \left(\frac{\phi_{m,ic}}{\phi_{x,ic}}\right)^k. \tag{A.6}$$

Average firm revenues $\overline{r}_{ic}$ can be rewritten as $\frac{\overline{r}_{ic}}{\sigma} = \overline{\pi}_{ic} + w_c^{1-\eta} s_{ic}^{\eta} f + \frac{1-G(\phi_{x,ic})}{1-G\left(\phi_{d,ic}\right)} w_c^{1-\eta} s_{ic}^{\eta} f_x$. Using the free-entry condition (A.1) to substitute $\overline{\pi}_{ic}$ and the Pareto CDF, we obtain:

$$\frac{\overline{r}_{ic}}{\sigma w_c^{1-\eta} s_{ic}^{\eta}} = \delta f_e \left(\frac{\phi_{d,ic}}{\phi_{m,ic}}\right)^k + f + \left(\frac{\phi_{d,ic}}{\phi_{x,ic}}\right)^k f_x. \tag{A.7}$$

Using equation (3) we obtain:

$$\eta M_{ic} \sigma w_c^{1-\eta} s_{ic}^{\eta} \left(\delta f_e \left(\frac{\phi_{d,ic}}{\phi_{m,ic}}\right)^k + f + \left(\frac{\phi_{d,ic}}{\phi_{x,ic}}\right)^k f_x\right) = s_{ic} K_{ic}. \tag{A.8}$$

Since there are no imports in industry i, the entire share α of domestic expenditure spent on varieties produced in industry i accrues to domestic firms. Let us denote by $r_{d,ic}(\phi)$ the domestic revenues of a firm with productivity ϕ in industry i. If Y_c is aggregate income (which is equal to aggregate expenditure E_c) then $\alpha Y_c = M_{ic}\overline{r}_{d,ic}$, where $\overline{r}_{d,ic}$ are average revenues in the domestic market. Since $\overline{r}_{d,ic}/r_{d,ic}(\phi_{d,ic}) = \left(\frac{\overline{\phi}_{d,ic}}{\phi_{d,ic}}\right)^{\sigma-1}$ and $r_{d,ic}(\phi_{d,ic}) = \sigma f w_c^{1-\eta} s_{ic}^{\eta}$ then we can establish, using (A.5), the following condition:

$$\alpha Y_c = M_{ic}\frac{k\sigma f w_c^{1-\eta} s_{ic}^{\eta}}{k+1-\sigma}. \tag{A.9}$$

We employ conditions (A.6), (A.8), (A.9), and the following three conditions: the definition of the CES export price index (equation A.10) where $M_{x,i}$ is the mass of exporting firms, the zero-exporting profits condition for ϕ_{xi} (equation A.11), and the fact that the mass of exporting firms is equal to the mass of firms times the probability of exporting (equation A.12). We suppress the country subscript c for clarity for the moment.

$$P_{x,i}^{1-\sigma} = \left(\frac{\tau w^{1-\eta} s_{ic}^{\eta}}{\rho\phi_{x,i}}\right)^{1-\sigma} \frac{M_{x,i}k}{k+1-\sigma} \; i \in 1,2, \tag{A.10}$$

$$\alpha Y^W \left(\frac{\tau w^{1-\eta} s_{ic}^{\eta}}{\rho\phi_{x,i}P_{x,i}}\right)^{1-\sigma} \left(\frac{P_{x,i}}{P_i^W}\right)^{1-\epsilon} = \sigma f_x w^{1-\eta} s_{ic}^{\eta} \; i \in 1,2, \tag{A.11}$$

$$M_{x,i} = p_{i,x}M_i = \left(\frac{\phi_{d,i}}{\phi_{x,i}}\right)^k M_i \; i \in 1,2. \tag{A.12}$$

Substituting out the mass of firms (M_i), the mass of exporting firms (M_{ix}), and the CES export price index ($P_{x,i}$) to obtain the following three sets of equations:

$$\delta f_e \frac{k+1-\sigma}{\sigma-1} = \left(\frac{\phi_{m,i}}{\phi_{d,i}}\right)^k f + \left(\frac{\phi_{m,i}}{\phi_{x,i}}\right)^k f_x \; i \in 1,2, \tag{A.13}$$

$$\left(\frac{\phi_{d,i}}{\phi_{x,i}}\right)^k = \frac{f\left[ks_iK_i - \alpha\eta Y(k+1-\sigma)\right]}{\alpha\eta Y(k+1-\sigma)\left[\delta f_e\phi_{x,i}^k + f_x\phi_{m,i}^k\right]}\phi_{m,i}^k \; i \in 1,2, \tag{A.14}$$

$$\left[\frac{w\tau s_i^{\eta}}{\rho\phi_{xi}}\right]^{1-\epsilon} \left[\frac{\phi_{x,i}^k}{\phi_{d,i}^k}\right]^{\frac{\sigma-\epsilon}{\sigma-1}} \left[\frac{\alpha Y}{\sigma f w^{1-\eta} s_i^{\eta}}\right]^{\frac{\epsilon-1}{\sigma-1}} \left(P_i^W\right)^{\epsilon-1} = \frac{f_x Y}{f Y^W} \; i \in 1,2. \tag{A.15}$$

Solving equation (A.14) for ϕ_{id} and substituting into equations (A.13) and (A.15) delivers

$$\delta f_e \frac{k+1-\sigma}{\sigma-1} = \frac{\delta f_e \alpha\eta Y(k+1-\sigma)\phi_{xi}^k + f_x k s_i K_i \phi_{mi}^k}{\left[k s_i K_i - \alpha\eta Y(k+1-\sigma)\right]\phi_{xi}^k} \; i \in 1,2, \tag{A.16}$$

$$\left[\frac{\tau w^{1-\eta} s_i^\eta}{\rho\phi_{xi}}\right]^{1-\epsilon} \left[\frac{\alpha Y}{\sigma f w^{1-\eta} s_i^\eta}\right]^{\frac{\epsilon-1}{\sigma-1}} \left[\frac{f\left[s_i k K_i - \eta\alpha Y(k+1-\sigma)\right]\phi_{m,i}^k}{\eta\alpha Y(k+1-\sigma)\left[\delta f_e \phi_{x,i}^k + f_x \phi_{m,i}^k\right]}\right]^{\frac{\sigma-\epsilon}{1-\sigma}} \left(P_i^W\right)^{\epsilon-1} = \frac{f_x Y}{f Y^W} \; i \in 1,2. \tag{A.17}$$

Solving equation A.16 for ϕ_{xi}^k, substituting into equation A.17, and dividing the expression for $i=1$ by $i=2$ gives the following expression:

$$\left[\frac{s_2 K_2 - \alpha\eta Y}{s_1 K_1 - \alpha\eta Y}\right]^{\frac{\sigma-\epsilon}{\sigma-1}} \left[\frac{s_1 K_1[s_2 K_2 - \alpha\eta Y]}{s_2 K_2[s_1 K_1 - \alpha\eta Y]}\right]^{\frac{\epsilon-1}{k}} \left(\frac{\phi_{m1}}{\phi_{m2}}\right)^{k(\epsilon-1)} \left(\frac{P_1^W}{P_2^W}\right)^{\epsilon-1} = \left(\frac{s_1}{s_2}\right)^{\frac{\eta\sigma(\epsilon-1)}{\sigma-1}}. \tag{A.18}$$

Reintroducing the country subscripts and dividing the expression for c by the analog for c' gives

$$\left[\frac{s_{2c}K_{2c} - \alpha\eta Y_c}{s_{1c}K_{1c} - \alpha\eta Y_c} \frac{s_{1c'}K_{1c'} - \alpha\eta Y_{c'}}{s_{2c'}K_{2c'} - \alpha\eta Y_{c'}}\right]^{\frac{\sigma-\epsilon}{\sigma-1}+\frac{\epsilon-1}{k}} \left(\frac{s_{1c}}{s_{2c}}\frac{s_{2c'}}{s_{1c'}}\right)^{\frac{\epsilon-1}{k}} \left(\frac{\phi_{m,1c}}{\phi_{m,2c}}\frac{\phi_{m,2c'}}{\phi_{m,1c'}}\right)^{\epsilon-1} = \left(\frac{s_{1c}}{s_{2c}}\frac{s_{2c'}}{s_{1c'}}\right)^{\frac{\eta\sigma(\epsilon-1)}{\sigma-1}}. \tag{A.19}$$

We now exploit the Cobb-Douglas nature of production and the definition of national income with the following two expressions keeping in mind our normalization of $w=1$:

$$\frac{(1-\eta)s_{ic}K_{ic}}{\eta} = w_c L_{ic} \; \frac{(1-\eta)s_{ic'}K_{ic'}}{\eta} = w_{c'} L_{ic'}, \tag{A.20}$$

$$Y_c = w_c(L_{1c} + L_{2c}) + s_{1c}K_{1c} + s_{2c}K_{2c} \; Y_{c'} = w_{c'}(L_{1c'} + L_{2c'}) + s_{1c'}K_{1c'} + s_{2c'}K_{2c'}. \tag{A.21}$$

Substituting these two expressions into equation A.19 gives the following equation:

$$\left[\frac{1-\alpha\left[1+\frac{s_{1c}}{s_{2c}}\right]}{1-\alpha\left[1+\frac{s_{2c}}{s_{1c}}\right]} \frac{1-\alpha\left[1+\frac{s_{2c'}}{s_{1c'}}\right]}{1-\alpha\left[1+\frac{s_{1c'}}{s_{2c'}}\right]}\right]^{\frac{\sigma-\epsilon}{\sigma-1}+\frac{\epsilon-1}{k}} \left(\frac{\phi_{m,1c}\phi_{m,2c'}}{\phi_{m,2c}\phi_{m,1c'}}\right)^{\epsilon-1} = \left(\frac{s_{1c}s_{2c'}}{s_{2c}s_{1c'}}\right)^{\frac{\eta\sigma(\epsilon-1)}{\sigma-1}+\frac{\sigma-\epsilon}{\sigma-1}}. \tag{A.22}$$

We can then proceed with a proof by contradiction. Suppose that $\frac{\phi_{m,1c}}{\phi_{m,2c}} < \frac{\phi_{m,1c'}}{\phi_{m,2c'}}$ so that the home country has a comparative advantage in industry 2. Suppose that there are no relative factor price differences such that $\frac{s_{1c}}{s_{2c}} = \frac{s_{1c'}}{s_{2c'}}$. The first set of terms in brackets on the left equals unity as does the term on the right of the equality. Therefore the left hand side is less than the right hand side, a contradiction. Now suppose that $\frac{s_{1c}}{s_{2c}} > \frac{s_{1c'}}{s_{2c'}}$. In this case, the right hand side is greater than one. However both terms on the left hand side are less than one, a contradiction. Therefore $\frac{s_{1c}}{s_{1c'}} < \frac{s_{2c}}{s_{2c'}}$.

To prove that the relative price indexes follow the hypothesized pattern, momentarily suppress the country subscripts and solve equation (A.16) for $phi_{x,i}$ to obtain

$$\phi_{x,i}^{k} = \frac{(\sigma-1) f_x s_i K_i \phi_{mi}^{k}}{\delta f_e (k+1-\sigma)\left[s_i K_i - \alpha\eta Y\right]} \quad \in 1,2. \tag{A.23}$$

Use (A.8)-(A.12) to obtain

$$\left(\frac{P_{x,i}}{P_i^W}\right)^{1-\epsilon} = \frac{k s_i K_i - \alpha Y \eta (k+1-\sigma)}{\alpha\eta(k+1-\sigma)\left(\delta f_e \phi_{x,i}^{k} + f_x \phi_{m,i}^{k}\right)} \frac{f_x}{Y^W} \quad i \in 1,2. \tag{A.24}$$

Combining (A.23) and (A.24) and dividing the equation for $i = 1$ by $i = 2$ delivers

$$\left(\frac{P_{x,2}}{P_{x,1}}\right)^{\epsilon-1} = \left(\frac{P_1^W}{P_2^W}\right)^{1-\epsilon} \frac{s_1 K_1 - \alpha\eta Y}{s_2 K_2 - \alpha\eta Y}. \tag{A.25}$$

Dividing this by its foreign analog, substituting in total factor payments for Y_c, and simplifying delivers

$$\left(\frac{P_{x,2c} P_{x,1c'}}{P_{x,1c} P_{x,2c'}}\right)^{\epsilon-1} = \frac{s_{1,c} s_{2,c'}}{s_{2,c} s_{1,c'}} \frac{1-\alpha\left(1+\frac{s_{2,c}}{s_{1,c}}\right)}{1-\alpha\left(1+\frac{s_{2,c'}}{s_{1,c'}}\right)} \frac{1-\alpha\left(1+\frac{s_{1,c'}}{s_{2,c}}\right)}{1-\alpha\left(1+\frac{s_{1,c}}{s_{2,c}}\right)}. \tag{A.26}$$

Because (without loss of generality) $\frac{s_{1,c}}{s_{2,c}} < \frac{s_{1,c'}}{s_{2,c'}}$, each of the three fractions on the right hand side are less than one. Therefore $\frac{P_{x,1c}}{P_{x,1c'}} > \frac{P_{x,2c}}{P_{x,2c'}}$. This concludes the proof to Proposition 1.

A.3 Proof of Proposition 2

With CES preferences, the ratio of exporting sales accruing to country c to country c' in industry i will be $\frac{R_{ic}}{R_{ic'}} = \left(\frac{P_{x,ic}}{P_{x,ic'}}\right)^{1-\epsilon}$. Based on Proposition (1), the first result follows trivially. For the second result use equations (A.9), (A.10), (A.11), and (A.12) to obtain

$$\left(\frac{P_{x,i}}{P_i^W}\right)^{1-\epsilon} = \frac{f_x p_{x,i} Y}{f Y^W}. \tag{A.27}$$

Taking differences in differences and reapplying the country subscript gives the desired result based on Proposition (1)

$$\left(\frac{P_{x,1c}}{P_{x,1c'}}\frac{P_{x,2c'}}{P_{x,2c}}\right)^{1-\epsilon} = \frac{p_{x,1c}\ p_{x,2c'}}{p_{x,1c'}\ p_{x,2c}}. \tag{A.28}$$

A.4 Proof of Proposition 5

Combining equations (A.6), (A.8), and (A.9) gives the following expression:

$$\alpha\eta\delta f_e(k+1-\sigma)Y\phi_{d,i}^k = f(\sigma-1)s_i K_{ic}\phi_{m,i}^k.$$

Taking differences-in-differences and reapplying the country subscript delivers the following:

$$\left(\frac{\phi_{d,1c}}{\phi_{d,2c}}\frac{\phi_{d,1c'}}{\phi_{d,2c'}}\right)^k = \frac{s_{1c}s_{1c'}}{s_{2c}s_{2c'}}\left(\frac{\phi_{m,1c}}{\phi_{m,2c}}\frac{\phi_{m,1c'}}{\phi_{m,2c'}}\right)^k. \tag{A.29}$$

The desired result then comes from a direct application of Proposition (1).

A.5 Construction of Equation (6)

Start with equations (2), (A.11), and (A.27). Substitute out $P_{x,ic}$ and $\phi_{x,ic}$. The desired result follows. The explicit meaning of the constants A_i' and A_c is as follows:

$$A_i' = \sigma f_x \left[\frac{A_i}{\sigma f_x}\left(\frac{\tau}{\rho}\right)^{1-\tau}\left(P_i^W\right)^{\sigma-\epsilon}\left[\frac{f_x}{fY^W}\right]^{\frac{\sigma-\epsilon}{1-\epsilon}}\right]^{\frac{(\epsilon-1)(\sigma-1)}{k(\sigma-\epsilon)+(\sigma-1)(\epsilon-1)}}\left[\frac{k}{k+1-\sigma}\right]^{\frac{k(\sigma-\epsilon)}{k(\sigma-\epsilon)+(\sigma-1)(\epsilon-1)}}$$

and

$$A_c = Y_c^{\frac{(1-\sigma)(\sigma-\epsilon)}{k(\sigma-\epsilon)+(\epsilon-1)(\sigma-1)}}.$$

B Data Appendix for Online Publication Only

The key to making international comparisons of productivity involves making the Chilean and Colombian plants as similar as possible. This involves making measures of inputs and output comparable. We explain these in turn. In addition to the measures below, we have verified that the plant-level data aggregates to values nearly identical to those reported in the World Bank Trade and Production data set that is based on UNIDO 3-digit ISIC data. We thank Veronique Pavenka for clarifying issues associated with UNIDO data collection. In addition, we only consider plants with at least 10 employees in each data set because this is the minimum plant size in the Chilean data set.

B.1 Value Added

The gross production variable in the Colombian data set included: the value of all goods and by-products sold, revenue from work done for third parties, value of electricity sold, value of operational income (value of installation, repair, and maintenance), change in Business inventories, and tax certificate revenue. The value of intermediate inputs is subtracted to obtain value added.

Revenue is reported in thousands of nominal Colombian Pesos. They are transformed into thousands of non-PPP adjusted 1980 Colombian Pesos using the 3-digit ISIC producer price index which is available at: $http://www.banrep.gov.co/statistics/sta\_prices.htm$. The specific spreadsheet is provided in link containing the spreadsheet $i\_srea\_015.xls$. All variables are the June values with all observations indexed so that the value for 1980=1.00.

There are two measures of output for the Chilean Data. There is income which includes sales of goods produced, sales shipped to other establishments, resales, work done for third parties and repairs done for third parties. Then there is gross output which includes income, electricity sold, buildings produced for own use, machinery produced for own use, vehicles produced for own use and final inventory of goods in process. We use gross output. Industry level output deflators are available from the Instituto Nacional de Estadisticas and was graciously provided by David Greenstreet. The value of intermediate inputs is subtracted to obtain value added

To make output comparable across countries in a given industry we constructed country-industry level output deflators from the *disaggregated* PPP benchmark data that is available from the Penn World Tables and was used in Morrow (2010). Unfortunately, the benchmark data are only available at five year intervals. In addition, the level of disaggregation changes from year to year. We choose to use the values from 1980 because Chile and Colombia are not covered in the 1985 survey. One fortuitous aspect of the 1980 benchmark is that it is available at the greatest level of disaggregation. The 1980 benchmark covers 155 industrial groupings, the 1985 benchmark covers 135 industrial groupings, and the 1996 benchmark only covers 31 industrial groupings. Consequently, we choose to use the 1980 data. This means that we are making the implicit assumption that all changes in the PPP deflator after 1980 can sufficiently be accounted for by a country fixed effect in which all industry level PPP deflators grow at the same rate. The mean (across industries) relative PPP deflator for Chile relative to Colombia is 1.747 and the median is 1.440. These can be compared to relative values of the PPP GDP deflator of 1.409, and 1.061 for investment goods. This suggests that PPP adjusted prices were higher in Chile than in Colombia.

B.2 Labor

For the Colombian data, we take "skilled" workers to be "management" and "skilled workers" as defined in the original data set. "unskilled" workers are taken to "local technicians", "foreign technicians", "unskilled workers", and "apprentices." For the Chilean data, "skilled" workers are the sum of "owners", "white collar production workers", "white collar executives", and "white collar administrative workers." "Unskilled workers" are taken to be the sum of "blue collar production workers", "blue collar non-production workers", and "home workers." No adjustment is made to the effectiveness of these workers as any country-level constant will be controlled for in the country fixed effect in our regressions. Data on educational attainment at the firm level is unavailable for both countries. At a referee's request, we have experimented with firm level measurement of the effective labor assuming that skilled labor has four more years of education than unskilled labor. Such adjustments make no difference in our results and are available from the authors upon request.

B.3 Rauch Classifications

"Homogenous" goods are those that are sold on established exchanges. "Reference priced" goods do not have exchanges but are those for which stated prices exist in reference publications. "Differentiated" goods comprise the remainder. We start by merging these classifications with Robert C. Feenstra's World Trade Flows data at the 4-digit SITC level to establish levels of Chilean and Colombian exports and the Rauch classification of each industry. We then use the SITC-ISIC concordance prepared by Marc-Andreas Muendler to derive *shares* of each ISIC classification that fall into the three Rauch classifications. We use Rauch's "conservative" classification. The Muendler concordance is available at *http://econ.ucsd.edu/muendler/html/resource.html#sitc2isic*.

B.4 Robustness

This section explores the robustness of our results in two ways. First, we ensure that our results are not due to a specific industry. Towards that goal, we perform the exercise of table 5 dropping one industry at a time. Second, we examine the possibility that industry productivity is merely picking up higher order terms for plant productivity. We show that our baseline results as well as our results using the Rauch classification are robust to that possibility.

Due to the relatively small number of industries upon which our analysis is based, we are concerned about the stability of our results. Table A1 replicates table 5 except that industries are dropped one by one to show that the results involving the Rauch classifications are not overly sensitive to a single industries. Each row reports the relevant column coefficients from table 5 dropping the industry indicated in the far left hand column. For all specifications, the coefficient on industry productivity interacted with % differentiated is negative as indicated by theory. In addition the coefficients on industry wage and industry wage interacted with % differentiated are negative and positive as indicated by theory. Implied values of σ and ϵ are included for completeness.

Table A2a presents baseline specifications including a quadratic term for own plant productivity to control for non-log-linear effects for which industry productivity may be proxying. The results show a convexity in the relationship between own plant productivity and value added/exports. There is a slight concavity in the propensity to export. However the coefficient on industry productivity changes little relative to the results in tables 2 and 3. Table A2b shows that the results involving Rauch classifications are robust to these higher order terms as well.

Table A1
Sensitivity to Specific Industries (pooled)
[Dep. variable=(log) export value]

Excluded Industry	(log) VA per Worker$_{fic}$	(log) VA per Worker$_{ic}$	(log) VA per Worker$_{ic}$ x(% diff)$_i$	(log) wage per worker $_{ic}$	(log) wage per worker$_{ic}$ x(% diff)$_i$	Implied σ	Implied ϵ
311	0.89***	0.61	-1.60**	-2.22	1.10	1.89	1.55
312	0.80***	0.67	-1.34**	-2.81**	0.75	1.80	1.67
321	0.86***	0.16	-1.40***	-3.72***	0.58**	1.86	1.10
322	0.81***	0.51	-1.21**	-2.83**	0.88	1.81	1.62
323	0.80***	0.53	-1.24**	-2.69**	0.90	1.80	1.61
324	0.79***	0.46	-1.20**	-2.54*	0.86	1.79	1.57
331	0.82***	0.31	-0.90**	-1.97	0.74	1.82	1.64
332	0.80***	0.52	-1.32***	-2.86**	0.91*	1.80	1.56
341	0.77***	0.41	-1.18**	-2.42*	0.84	1.77	1.52
342	0.78***	0.60	-1.37***	-3.14**	0.95*	1.78	1.58
351	0.76***	1.09	-1.93**	-3.72***	1.37*	1.76	1.64
352	0.83***	0.68	-0.98^{+}	-5.78**	3.39	1.83	1.83
355	0.78***	0.50	-1.21**	-2.54*	0.92	1.78	1.58
356	0.81***	0.64*	-1.30***	-3.12**	1.05	1.81	1.67
369	0.77***	0.55	-1.30**	-2.86*	0.96	1.77	1.57
381	0.79***	0.51	-1.24**	-2.68**	0.92	1.79	1.59
382	0.81***	0.51	-1.26**	-2.67**	0.95	1.81	1.59
383	0.80***	0.51	-1.27**	-2.76**	0.92	1.80	1.59
384	0.77***	0.52	-1.25**	-2.70**	0.90	1.77	1.57
390	0.80***	0.65*	-1.51***	-3.37***	1.04*	1.80	1.56

Robust and clustered standard errors in parentheses. Clustered standard errors by country-industry panel (e.g. Chile 311).
***p<0.01, ** p<0.05, * p<0.1,$^{+}$ p<0.11.

Table A2a
Non-Linear Plant Productivity
[Dep. variable=(log) export value]

	1990		1991	
	Exports	Pr(exp>0)	Exports	Pr(exp>0)
(log) VA per Worker$_{fic}$	0.37	1.49***	0.73*	1.86***
	(0.25)	(0.47)	(0.37)	(0.38)
(log) VA per Worker$^2_{fic}$	0.069	-0.038	0.022	-0.077
	(0.04)	(0.08)	(0.05)	(0.06)
(log) VA per Worker$_{ic}$	-0.25	-0.62*	-0.56**	-0.96***
	(0.29)	(0.32)	(0.28)	(0.26)
Observations	1251	7478	1491	7109
Industries	20	20	20	20
Industry FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes

Robust and clustered standard errors in parentheses. Clustered standard errors by country-industry panel (e.g. Chile 311).
***p<0.01, ** p<0.05, * p<0.1.

Table A2b
Non-Linear Plant Productivity With Rauch
[Dep. variable=(log) export value]

	(1)	(2)	(3)
(log) VA per Worker$_{fict}$	0.53*	0.55*	0.54*
	(0.29)	(0.30)	(0.29)
(log) VA per Worker$^2_{fict}$	0.047	0.040	0.042
	(0.046)	(0.047)	(0.046)
(log) VA per Worker$_{ict}$	-0.047	0.37	0.62
	(0.35)	(0.36)	(0.46)
(log) VA per Worker$_{ict}$ x (% diff)$_i$	-0.66*	-1.14**	-1.33**
	(0.39)	(0.48)	(0.52)
(log) Wage per Worker$_{fict}$		-1.79*	-5.43**
		(1.03)	(2.58)
(log) Wage per Worker$_{fict}$ x (% diff)$_i$			3.88
			(2.73)
Observations	2742	2742	2742
Industries	20	20	20
Industry FE	Yes	Yes	Yes
Country FE	Yes	Yes	Yes

Robust and clustered standard errors in parentheses. Clustered standard errors by country-industry panel (e.g. Chile 311).
***p<0.01, ** p<0.05, * p<0.1.