Estimation Results

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This document presents results for 6 different alternatives of models: alternating eta and manually multiplying the elasticity of skill intensity with respect to sales by 10 to give more importance to this moment since I had not been able to replicate it.

I thus have 6 versions:

Model 1: $\eta = 1.6$, no reweighting of any moment
Model 2: $\eta = 1.6$, weight of δ_1=10
Model 3: $\eta = 2$, no reweighting of any moment
Model 4: $\eta = 2$, weight of δ_1=10
Model 5: $\eta = 4$, no reweighting of any moment
Model 6: $\eta = 4$, weight of δ_1=10

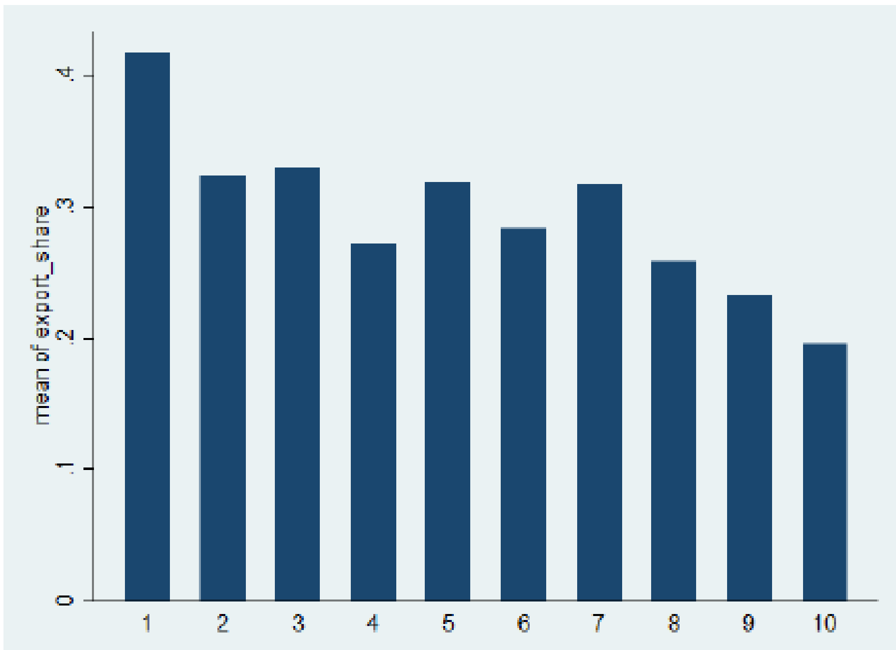
Estimated parameters

	Non-export-oriented industries					Export-oriented industries				
Model	1	3	4	5	6	1	3	4	5	6
ς	2.15	2.11	4.35	1.19	1.56	0.66	2.35	2.73	1.11	1.70
β_l	0.159	0.145	0.100	0.283	0.257	0.229	0.186	0.219	0.155	0.171
β_h	0.694	0.65	0.451	0.0824	0.256	0.842	0.604	0.322	0.671	0.215
a	9.69	9.16	13.7	5.49	9.70	6.96	8.16	11.9	9.67	10.8
α_h	0.618	0.508	0.180	0.970	0.516	0.456	0.342	0.192	0.521	0.553
R_l^*	2,126	2,285	1,107	41	2,635	2,286	268	1,218	2,228	1,476
R_h^*	360	151	0	0	9,494	4,236	0	146	6,056	4,782
f_L	675	778	773	4.6	887	408	108	553	570	474
f_X	8,133	10,945	15,022	1,039	8,179	3,502	1,481	3,539	2,367	1,846
f_H	1333170	80455	11380	114960	230880	23330	650	6710	39550	39600

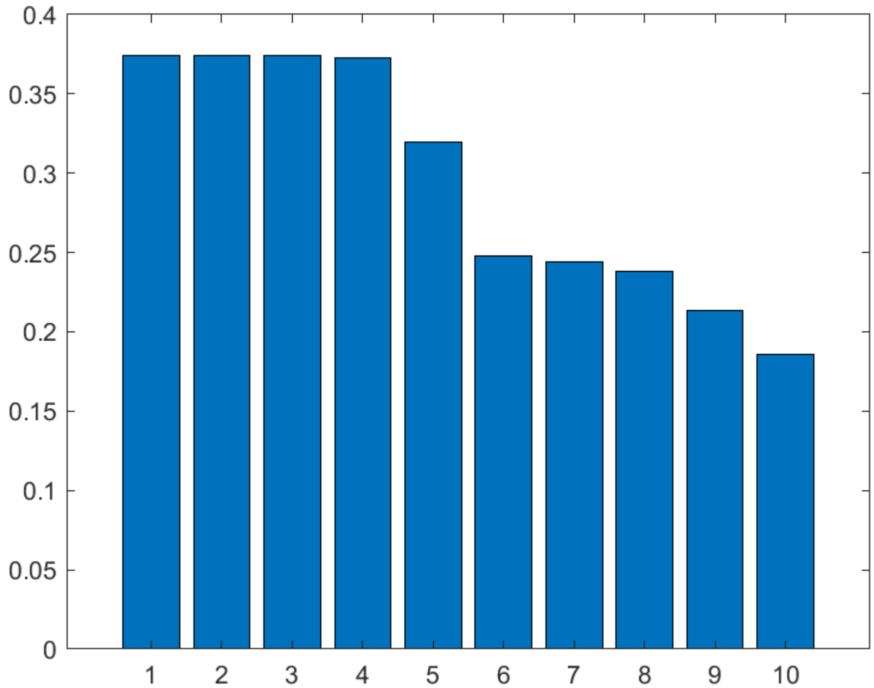
Model fit

	Non-export-oriented industries						Export-oriented industries					
	Data	Model					Data	Model				
		1	3	4	5	6		1	3	4	5	6
Elasticity of skill intensity wrt sales (non exporters)	0.0698	0.017	0.0283	0.0698	0.0698	0.0698	0.055	0.007	0.042	0.055	0.014	0.055
Skill intensity non-exporters	0.062	0.067	0.062	0.113	0.059	0.052	0.097	0.078	0.097	0.128	0.015	0.041
Skill intensity exporters	0.656	0.656	0.656	0.656	0.656	0.656	0.373	0.373	0.373	0.373	0.373	0.373
$\frac{\text{mean domestic sales}}{\text{s.d. domestic sales}}$	0.026	0.026	0.026	0.024	0.012	0.040	0.048	0.048	0.012	0.043	0.057	0.040
$\frac{\text{Domestic sales non-exporters}}{\text{Domestic sales exporters}}$	0.006	0.003	0.004	0.005	0	0.004	0.012	0.012	0.003	0.018	0.013	0.010
Exporters' average export intensity	0.281	0.273	0.274	0.281	0.281	0.272	0.302	0.302	0.307	0.298	0.301	0.299
Elasticity of $\frac{\text{Foreign sales}}{\text{Domestic sales}}$ w.r.t. $\frac{s}{u}$	-0.42	-0.42	-0.422	-0.331	2.53	-0.42	-0.338	-0.343	-0.273	-0.337	-0.341	-0.338
Fraction of firms that produce (%)[1]	90[2]	90	90	90	90	90	90	90	90	90	90	90
Export participation (%)[3]	0.59	0.59	0.59	0.59	0.59	0.59	1.7	1.7	1.7	1.7	1.7	1.7
Exporters prod high skilled task (%)[4]	53.6	53.6	53.6	53.6	53.6	53.6	54.6	54.6	54.6	54.6	54.6	54.6
Total difference		0.061	0.044	0.054	0.022	0.026		0.067	0.058	0.043	0.133	0.067
Total $\frac{S}{U}$	0.25	0.476	0.648	0.477	0.773	0.449						

"Sacrifice" of matching skill intensity of low skill task is not matching elasticity of sales to skill, plus much further in $\frac{S}{U}$



Data


0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
1
2
3
4
5
6
7
8
9
10

Step # 13:
I am after $P^*_{k_j}$, whhich is the price of foreign firms selling in domestic market. This does not correspond to foreign price (so estimated $R^*_{k_j}$ above is not informative of this price). However, this price will be required in order to perform the counterfactual analysis because as τ changes, so is going to change $P^*_{k_j}$.

Estimating this moment is not simple since the imports by task are not observable (actually imports by sector are not observable either).

To get around this, we will use approximation of imports (either total imports/total manufacturing production in the whole economy, and assume that this is constant in all sectors).

For the rest of this section denote the observed price index in an industry as P_{k_h}; the price index of foreign firms selling in the domestic market as $P^*_{k_h}$; and domestic price index in the domestic market as $P^d_{k_h}$. The important thing to realize is that part of the point of this paper is comparative advantage, which implies that $\frac{P^*_{k_h}}{P^d_{k_h}} < \frac{P^*_{k_l}}{P^d_{k_l}}$.
Revenue of firm (k, φ) FROM TASK k_j performing task k_j is:

$$\alpha_{k_j} \bar{R}_k \bar{P}^{\sigma-1}_{k_j} p(\beta_{k_j}, \varphi)^{1-\sigma}$$

where $\bar{R}_k$ is total domestic absorption, ie, total sales of all firms in sector k (domestic and foreign sales)????? NO ME QUEDA TAAAAN CLAROOOO!!, and $\bar{P}_{k_h}$ is the final price index observed in task k_h, that is including foreign firms selling in domestic market. LO QUE APRENDI ES QUE YO TENGO DOMESTIC SALES TOTALES DE TOOOODO EL SECTOR, NO DEL TASK, QUE ES LO QUE QUIERO, LOS PRECIOS RELATIVOS DEL TASK. ENTONCES VOY A NECESITAR LA SUMA DE LOS DOS TASKSL. REVISAR ESTO MAÑANA!!!
But since $P_{k_j} = \left(\int_\omega p(\omega)^{1-\sigma} \partial\omega\right)^{\frac{1}{1-\sigma}}$, then we can say that $P^{1-\sigma}_{k_j} = P^{1-\sigma}_{k_j} + P^{*1-\sigma}_{k_j}$, which means that $\bar{P}^{\sigma-1}_{k_j} = \frac{1}{P^{1-\sigma}_{k_j} + P^{*1-\sigma}_{k_j}}$. Thus,

$$r(\beta_{k_h}, \varphi) = \alpha_{k_j} \bar{R}_k \bar{P}^{\sigma-1}_{k_j} p(\beta_{k_j}, \varphi)^{1-\sigma} = \alpha_{k_j} \bar{R}_k \frac{p(\beta_{k_j}, \varphi)^{1-\sigma}}{P^{1-\sigma}_{k_j} + P^{*1-\sigma}_{k_j}}$$

Doing some manipulation,

$$r(\beta_{k_h}, \varphi) = \alpha_{k_j} \bar{R}_k \frac{P^{1-\sigma}_{k_j}}{P^{1-\sigma}_{k_j} + P^{*1-\sigma}_{k_j}} \frac{p(\beta_{k_j}, \varphi)^{1-\sigma}}{P^{1-\sigma}_{k_j}}$$

Then, summing over all firms to get total revenue of task k_j:

$$\alpha_{k_j} \bar{R}_k \frac{P^{1-\sigma}_{k_j}}{P^{1-\sigma}_{k_j} + P^{*1-\sigma}_{k_j}} \frac{1}{P^{1-\sigma}_{k_j}} \int p(\beta_{k_j}, \varphi)^{1-\sigma} = \alpha_{k_j} \bar{R}_k \frac{1}{P^{1-\sigma}_{k_j} + P^{*1-\sigma}_{k_j}} \int p(\beta_{k_j}, \varphi)^{1-\sigma}$$

But again $\int p(\beta_{k_j}, \varphi)^{1-\sigma} = P_{k_j}^{1-\sigma}$, so we conclude

$$Totalsalestaskk_j = \alpha_{k_j} \bar{R}_k \frac{P_{k_j}^{1-\sigma}}{P_{k_j}^{1-\sigma} + P_{k_j}^{*1-\sigma}}$$