International Trade: Assignment 2

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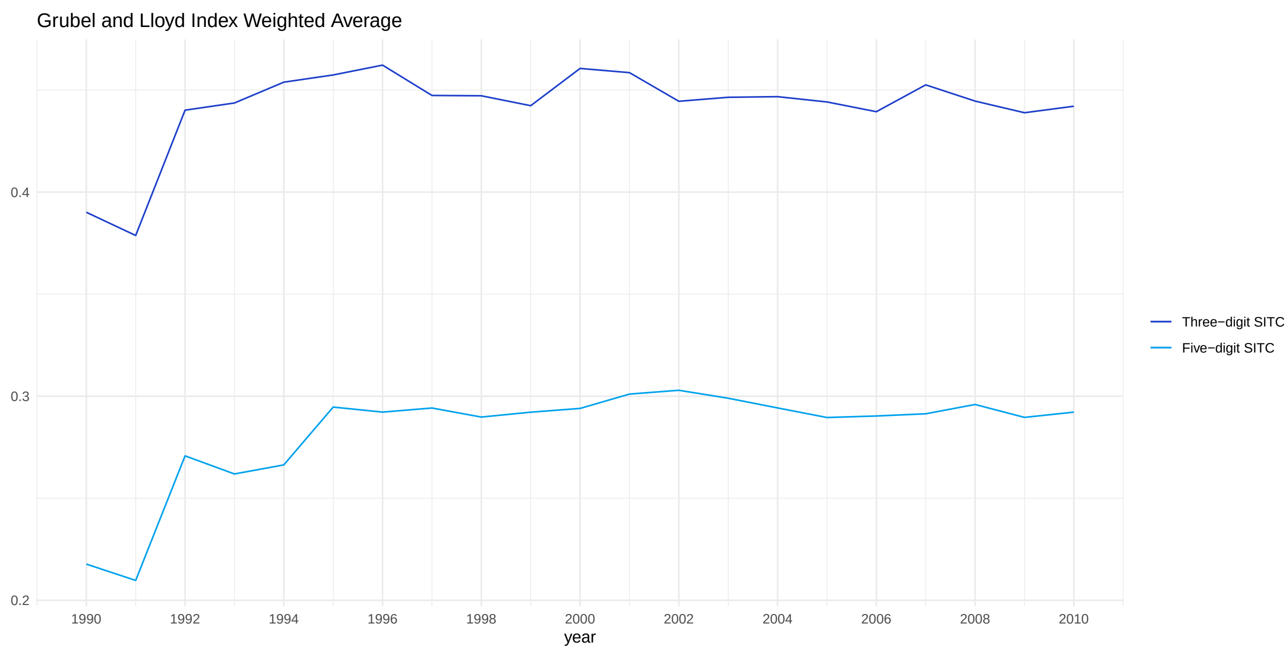
Data section



In general, the share of imports and exports is very similar in each industry or they offset each other, as we can see with three-digit SITC. Nevertheless, this difference increases as our labels (product cohorts) increase with five-digit SITC. Therefore, we can conclude that there are some products we only import / export. Actually, it is not hard to observe that even variability increases. In the medium term, there is some stability probably strongly related to NAFTA, which can be reflected in an observable decrease in variability after 1994.

See the **theoretical part** on the next page.

1.-

i) Household

$$C = \left[\sum_{i=1}^{N} c_i^{\frac{\sigma-1}{\sigma}}\right]^{\frac{\sigma}{\sigma-1}}$$

Production

$$\frac{p_i}{w} = \left(\frac{1}{\varphi} + \frac{f}{q_i}\right) \qquad \frac{p_i}{w} = \frac{\sigma}{\sigma-1}\,\frac{1}{\varphi}$$

Mkt Clearing

$$q = (L + L^{*})\,C$$

$$q = 2LC$$

$$\frac{\sigma}{\sigma-1}\,\frac{1}{\varphi} = \frac{1}{\varphi} + \frac{f}{q_i}$$

$$\frac{\sigma}{\sigma-1}\,\frac{1}{\varphi} = \frac{1}{\varphi} + \frac{f}{2LC}$$

$$C_i^{T} = \frac{f\varphi(\sigma-1)}{2L}$$

$$q^{T} = f\ell(\sigma-1)$$

$$q_1 = LC_1 + L^{*}C_1$$

$$\frac{q_1}{L^{*}C_1} = \frac{LC_1}{L^{*}C_1} + 1 \qquad \frac{q_1}{L^{*}C_1} = 2$$

$$1 = \frac{LC_1 + L^* C_1}{q_1} \rightarrow 1 - \frac{LC_1}{q_1} = \frac{L^* C_1}{q_1}$$

$$1 - \frac{L\left(\frac{f\varphi(\sigma-1)}{2\cancel{\ell}}\right)}{f\varphi(\sigma-1)} = \frac{L^* C_1}{q_1} = 1/2$$

ii)

$$l_1 = \frac{q_1}{\varphi} + f$$

$$L = \sum_{i=1}^{N} l_i$$

$$L = N l_i \Rightarrow L = N\left(\frac{q_1}{\varphi} + f\right), \; L = N\left(\frac{f\varphi(\sigma-1)}{\varphi} + f\right)$$

$$L = N(f((\sigma-1)+1))$$

$$N = \frac{L}{f\sigma} \quad \text{if } \uparrow\sigma \rightarrow N \text{ increases}$$

$\uparrow\sigma$ means that the household can substitute better between varieties
This reduces firm mark up, making some leave the market before $\pi = 0$

$$\frac{P_i}{w} = \frac{\sigma}{\sigma-1}\frac{w}{\varphi} \qquad \uparrow\sigma \rightarrow \text{Less markup} \quad \downarrow p_i$$

$$P = \left[\sum_{i=1}^{n} p_i^{1-\sigma}\right]^{\frac{1}{1-\sigma}} \qquad p_i = p \;\forall i \rightarrow P\left[\sum_{i=1}^{n} p^{1-\sigma}\right]^{\frac{1}{1-\sigma}}$$

$$(Np^{1-\sigma})^{1/1-\sigma}$$

$$N^{1/1-\sigma} p$$

$\uparrow \sigma \Rightarrow \downarrow p$

$\uparrow \sigma$ makes mark up smaller, this makes the price of the firms smaller. This means an increase in house hold welfare because they can consume more

iii)

$$q_i = (L + L^*) c_i$$

$$\Rightarrow q_i = f\varphi(\sigma - 1) = (L + L^*) c_i \Rightarrow c_i = \frac{f\varphi(\sigma-1)}{L+L^*}$$

if

q_i = output and $L^* c_i$ = exports

$$\text{Then} = \frac{\frac{L^*(f\varphi)(\sigma-1)}{L+L^*}}{f\varphi(\sigma-1)} = \frac{L^*}{L+L^*} > \frac{1}{2}$$