

Discussion of "Risk, Return, and Multinational Production" by Fillat and Garetto

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Outline

Three discussion points:

- 1 Is this a good theory of exporting and FDI?
- 2 Derive the relationship between earnings and firm value
- 3 Excess returns.

Model

Four key elements

- 1 Permanent, producer heterogeneity (a)
- 2 Startup Costs of Exporting & FDI (F_x, F_I)
- 3 Continuation Costs of Exporting & FDI (f_x, f_I)
- 4 Aggregate Uncertainty

Previous Literature:

Helpman, Melitz, Yeaple (04): no plant or aggregate uncertainty.

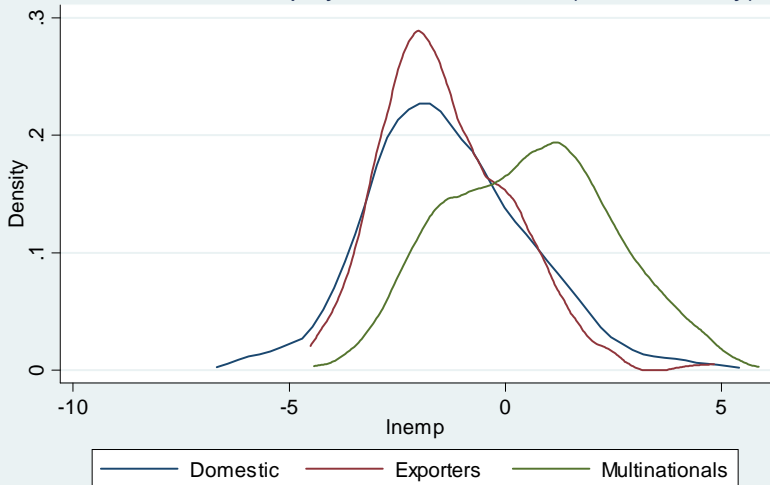
Alessandria & Choi (07): no FDI decision.

Model: Findings

Sunk Costs will deliver

- ① Firms doing FDI (Multinationals-MNs) bigger than exporters who are bigger than domestic firms
 - ▶ In employment, sales, etc
 - ▶ But there is substantial overlap in size.

Distribution of Employment Size in 2002 (kernel density)



kernel = epanechnikov, bandwidth = 0.4600

Model: Findings

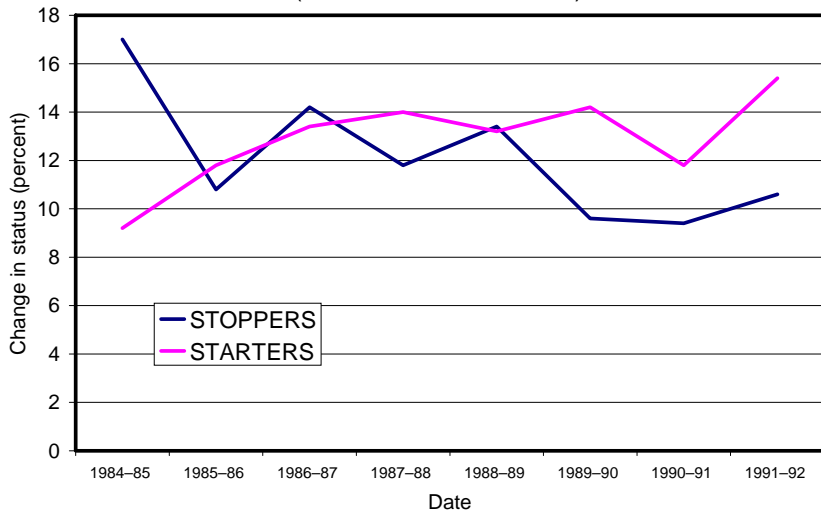
Sunk Costs will deliver

- 1 Firms doing FDI (Multinationals-MNs) bigger than exporters who are bigger than domestic firms
 - ▶ In employment, sales, etc
 - ▶ But there is substantial overlap in size.
- 2 International status persistent, but not permanent
 - ▶ 93% of Domestic_t stay Domestic_{t+1}
 - ▶ 90% of Exporters_t continue to Export_{t+1}
 - ▶ 98% of MN_t continue to MN_{t+1}

Quibbles: compare to BEA data (2002)

- 1 FDI dominant but not only method for serving foreign markets
 - ▶ 81 percent of foreign sales from foreign affiliates
 - ▶ But only 30 percent MN revenue (65 percent from US)
- 2 MNs do a lot of exporting too
 - ▶ 50 percent of US mfr exports
 - ▶ Sunk export costs matter for MN plants.
- 3 Important input-output structure of MN
 - ▶ 42 percent of US MN exports to foreign affiliates.
 - ▶ Domestic & FDI investment comove (Desai, Foley, Hines)
- 4 Transitions from firm shocks as important as agg. shocks.
 - ▶ Bernard & Jensen (99) show high exit & entry rate of exporters

Entry and Exit into Exporting among US plants (Bernard & Jensen 1999)



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Can easily extend model to capture these features.

Results 1: High earning-price ratio and trade

May arise from mean reversion.

Consider economy but with no sunk component

$$\begin{aligned}V(a) &= \max \{V_D(a), V_X(a), V_I(a)\} \\V_D(a) &= \frac{a}{\theta} C + \beta EV(a) \\V_X(a) &= \frac{a}{\theta} C + \frac{a\kappa}{\theta} C^* - f_x + \beta EV(a) \\V_I(a) &= \frac{a}{\theta} C + \frac{a}{\theta} C^* - f_l + \beta EV(a)\end{aligned}$$

Note $\kappa < 1$ and $f_x < f_l$

Results 1: High earning-price ratio and trade

There exist two marginal firms $\{a_x, a_l\}$ satisfying

$$V_D(a_x) = V_X(a_x) \rightarrow \frac{a_x \kappa C^*}{\theta} = f_x$$

$$V_X(a_l) = V_l(a_l) \rightarrow \frac{(1 - \kappa) C^* a_l}{\theta} = f_l - f_x$$

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Rewrite value function of exporters & MNs

$$V_X(a) = \frac{a}{\theta} C + \frac{(a - a_x) \kappa}{\theta} C^* + \beta EV(a) \text{ if } a \geq a_x$$

$$V_I(a) = \frac{a}{\theta} C + \frac{(a - a_l)}{\theta} C^* + \beta EV(a) \text{ if } a \geq a_l$$

Results 1: High earning-price ratio and trade

Let $a' = a$ with Prob λ & draw new a with prob $1 - \lambda$ then

$$V_D(a) = \frac{\frac{a}{\theta}C}{1 - \lambda\beta} + \frac{1 - \lambda}{1 - \lambda\beta}\beta EV(a)$$

$$V_X(a) = \frac{\frac{a}{\theta}C + \frac{(a - a_x)\kappa}{\theta}C^*}{1 - \lambda\beta} + \frac{1 - \lambda}{1 - \lambda\beta}\beta EV(a)$$

$$V_I(a) = \frac{\frac{a}{\theta}C + \frac{(a - a_I)}{\theta}C^*}{1 - \lambda\beta} + \frac{1 - \lambda}{1 - \lambda\beta}\beta EV(a)$$

Results 1: High earning-price ratio and trade

Use value functions, compare price to earnings (V/π)

$$\frac{V_D(a)}{\pi(a)} = \frac{1}{1-\lambda\beta} + \frac{1-\lambda}{1-\lambda\beta} \frac{\beta EV(a)}{\frac{a}{\theta} C}$$

$$\frac{V_X(a)}{\pi(a)} = \frac{1}{1-\lambda\beta} + \frac{1-\lambda}{1-\lambda\beta} \frac{\beta EV(a)}{\frac{a}{\theta} C + \frac{(a-a_x)\kappa}{\theta} C^*}$$

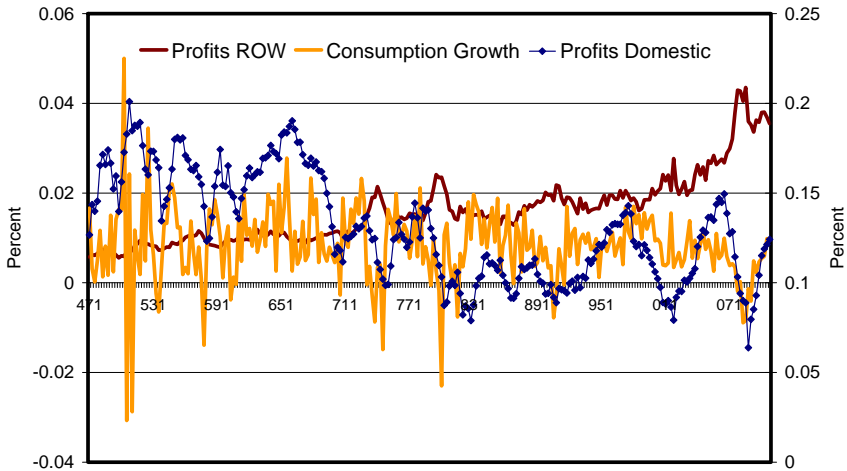
$$\frac{V_I(a)}{\pi(a)} = \frac{1}{1-\lambda\beta} + \frac{1-\lambda}{1-\lambda\beta} \frac{\beta EV(a)}{\frac{a}{\theta} C + \frac{(a-a_I)}{\theta} C^*}$$

As long as $\lambda < 1 \rightarrow \frac{\pi}{V_D} < \frac{\pi}{V_X} < \frac{\pi}{V_I}$

Results 2: Excess Return of MNs & Exporters

- Define returns: $r_{it} = \frac{\pi_{it} + V_{it+1}}{V_{it}}$
- The fact: $r_{it}^D < r_{it}^{EX} < r_{it}^{MN}$
- Attribute to covariance of profits with aggregates consumption.
 - ▶ In sensitivity show lower comovement changes returns ordering.
- Somewhat puzzling: expect foreign profits to be a good hedge against domestic business cycle
 - ▶ This seems to be the case in the data
 - ▶ From NIPA, consider domestic, foreign corporate profits & ΔC
 - ▶ $\text{Corr}(\Delta C, \Delta \Pi^D) = 0.26$ $\text{Corr}(\Delta C, \Delta \Pi^{ROW}) = 0$

US Domestic and Foreign Corporate Profits and Consumption Growth



Results 2: Excess Return of MNs & Exporters

- Requires investments in exporting and FDI to make foreign profits a bad hedge.
- But, this seems to be showing up domestic profits in the aggregate.

Summary

- Really interesting mix between data and theory
- Develop first GE model of dynamics of FDI/Exporting.
- Seems to deliver returns and earnings
 - ▶ Big changes in nature of trade and firms, has it shown up in returns and valuations?
- Ready to ask lots of questions.
 - ▶ What is the nature of trade frictions (startup/continuation cost export/FDI)
 - ▶ How do the welfare gains to trade depend on trade costs.
 - ▶ How does comovement change?