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

George Alessandria

FRB Philadelphia

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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

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)

- **Density**
  - X-axis: \(\ln(\text{emp})\)
  - Y-axis: Density

- **Groups**
  - Domestic
  - Exporters
  - Multinationals

- **Kernel** = Epanechnikov
- **Bandwidth** = 0.4600

\(\text{kernel} = \text{epanechnikov}, \text{bandwidth} = 0.4600\)
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)
Quibbles: compare to BEA data (2002)

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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

\[
V(a) = \max \{ V_D(a), V_X(a), V_I(a) \}
\]
\[
V_D(a) = \frac{a}{\theta} C + \beta EV(a)
\]
\[
V_X(a) = \frac{a}{\theta} C + \frac{a\kappa}{\theta} C^* - f_X + \beta EV(a)
\]
\[
V_I(a) = \frac{a}{\theta} C + \frac{a}{\theta} C^* - f_I + \beta EV(a)
\]

Note \( \kappa < 1 \) and \( f_X < f_I \)
Results 1: High earning-price ratio and trade

There exist two marginal firms \( \{ a_x, a_I \} \) satisfying

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

\[
V_X(a_I) = V_I(a_I) \rightarrow \frac{(1 - \kappa) C^* a_I}{\theta} = f_I - f_x
\]
Results 1: High earning-price ratio and trade

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\]

Rewrite value function of exporters & MNs

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

\[
V_I(a) = \frac{a}{\theta} C + \frac{(a - a_I)}{\theta} C^* + \beta EV(a) \quad \text{if } a \geq a_I
\]
Results 1: High earning-price ratio and trade

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

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

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

\[
V_I(a) = \frac{a}{\theta} C + \frac{(a-a_I)\theta}{C^*} + \frac{1 - \lambda}{1 - \lambda \beta} \beta EV(a)
\]
Results 1: High earning-price ratio and trade

Use value functions, compare price to earnings ($V / \pi$)

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

\[ \frac{V_X (a)}{\pi (a)} = \frac{1}{1 - \lambda \beta} + \frac{1 - \lambda}{1 - \lambda \beta} \frac{a C + (a_x - a) \kappa}{\theta C} \]

\[ \frac{V_I (a)}{\pi (a)} = \frac{1}{1 - \lambda \beta} + \frac{1 - \lambda}{1 - \lambda \beta} \frac{\beta EV (a)}{\theta C} + \frac{(a - a_I) \kappa}{\theta C} \]

As long as $\lambda < 1 \rightarrow \frac{\pi}{V_D} < \frac{\pi}{V_X} < \frac{\pi}{V_I}$
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 & $\Delta C$
- $\text{Corr}(\Delta C, \Delta \Pi^D) = 0.26$ $\text{Corr}(\Delta C, \Delta \Pi^{ROW}) = 0$
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?