Domestic Entry Costs Matter More for the Skill Premium: A Comparative Analysis of Export and Domestic Entry Costs in a Model with Skill Flexibility

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Abstract

This paper develops a small open economy model with **skill flexibility** and quantitatively compares the relative importance of **export and domestic entry costs** for the **skill premium**. Motivated by Lazear (2005, 2012), skill is defined as flexibility, i.e., the ability to handle **the diversity of inputs**. Flexibility is measured by fixed labor setup costs based on Mitchell (2005). Higher skill level reflects a greater flexibility to handle input diversity, which translates into lower setup costs. The mechanism is that when export and/or domestic entry costs fall, the variety of intermediate inputs produced expands, raising demand for flexible high-skilled labor. In a model calibrated to the U.S. data (1985–2000) that incorporates technological change, we quantitatively show that most of the rise in the skill premium is accounted for by falling domestic entry costs, not export fixed costs or technology.

1. Introduction

The increased skill premium is one of the important issues in economics. There are studies (e.g., Kurokawa, 2010 and 2020; Atolia and Kurokawa, 2021) which theoretically or quantitatively show that as an alternative to technological change, a decrease in domestic entry costs is also an important factor that can increase the skill premium.

However, recent trade studies emphasize that export entry costs too are important as entry costs. This casts a doubt on the skill premium studies that focus on only domestic entry costs.

We now raise the question: How robust are the past results about the effect of domestic entry costs on the skill premium to the inclusion of export fixed costs in the model?

Using the model calibrated to the U.S. data over 1985-2000, our quantitative analysis shows that most of the increase in skill premium is accounted for by the decline of domestic entry costs, not export fixed costs or technological change.

2. Model

Environment

- A small open economy
- 2 types of labor: low- and high-skilled labor. The endowments are L and H.
- 2 types of goods: low- and high-skill type good. Each type i good is produced by n_i firms, $i = L,H$.
- Type i domestic good requires, as input, both domestic and imported goods and type i labor.
- Domestic goods are also exported.

Skill

- Types of labor differ in their flexibility to handle the diversity of inputs, which is measured by setup costs a_i, as it is in Mitchell (2005).
- Higher skill level reflects a greater flexibility to handle input diversity, which translates into lower setup costs a_i so that $a_L > a_H$.
- This is consistent with the evidence that workers who have a high-skill position, such as CEOs and managing directors, are 'generalists' (Lazear, 2005, 2012).

The consumer

$$Max\ u = c,$$

$$s.t.\ qc \le w_L L + w_H H - NX,$$
$$c \ge 0,$$

where $c = (n_L(c_{zL})^{\rho} + n_H(c_{zH})^{\rho} + n^*(c_{z*})^{\rho})^{1/\rho}$.

The producers

Every firm z, $z \in D_i$, $i = L, H$, has the production function

$$y_{zi} = max\ [A\{a_{xi}(x_{zi})^{\varepsilon} + (1 - a_{xi})((l_{iz} - a_i))^{\varepsilon}\}^{1/\varepsilon} - (F^D + F^X), 0\ ],$$

where $x_{zi} = (n_L(x^L_{z'L,\,zi})^{\rho} + n_H(x^H_{z'H,\,zi})^{\rho} + n^*(x^*_{z'*,\,zi})^{\rho})^{1/\rho}$.

The factor markets

$$\int_{D_H} l_{Hz}\,dz = H,$$
$$\int_{D_L} l_{Lz}\,dz = L\,.$$

3. Initial Calibration (1985)

Table: The parameterization of the model

Parameter values	Targets	Based on
$\rho = 5/6$	20% markup	Martins et al. (1996)
$\varepsilon = 1/6$	Elasticity of substitution of 1.2 between intermediate inputs and labor	Rotemberg and Woodford (1992)
$a_{XH}=0.539$ & $a_{XL}=0.599$	50% share of intermediate goods in gross output	Jorgenson et al. (1987)
$a_H=0.3183$ & $a_L=7.146$	14% share of fixed labor costs in total labor costs	Bartelsman et al. (2013)
$F^X=44/144$ & $F^D=100/144$	Export entry costs/domestic entry costs: 44/100	Hamano (2025)
$n^*=4.515$	Import variety/domestic variety in 1987: 91/149	Authors' calculation based on Kehoe and Ruhl (2013)
$q_{z^*}=2.019$ (import price)	Imports/gross output in 1985: 0.143	Authors' calculation based on BEA
$H=43.802$	$(w_H H/w_L L)/(w_H/w_L)$ in 1985: 0.682/1.557	Authors' calculation based on ASM

Normalizations: $q=1;\ L=100;\ A=1;\ F^D+F^X=1$

4. Numerical Experiments

Calibration from 1985 to 2000

(1) All: A ↑ by 7.3%, F^D ↓ by 54.496%, and F^X ↓ by 17%.

➔ The model captures actual changes in real gross output (42.747% ↑; BEA & St. Louis Fed), domestic entry costs (54.496% ↓; Nicoletti et al., 2001), and the skill premium (13.809% ↑; ASM) over 1985-2000.

Decomposition

(2) TFP: Only A ↑ by 7.3%.
(3) Both Entry Costs: F^D ↓ by 54.496%, and F^X ↓ by 17%.
(4) Domestic Entry Costs: Only F^D ↓ by 54.496%.
(5) Export Entry Costs: Only F^X ↓ by 17%.

Table: The data and the results for numerical experiments

	Data 1985-2000	(1) All	(2) TFP	(3) Both Entry Costs	(4) Domestic Entry Costs	(5) Export Entry Costs
w_H/w_L initial	1.557	1.557	1.557	1.557	1.557	1.557
w_H/w_L final	1.772	1.772	1.579	1.738	1.707	1.572
% change	13.809% ↑	13.809% ↑	1.413% ↑	11.625% ↑	9.634% ↑	0.963% ↑
(1) = 100%		100%	10.232%	84.184%	69.766%	6.974%
(3) = 100%				100%	**82.873%**	**8.284%**

5. Sensitivity Analysis

(1) Labor fixed costs/total labor costs: 14% (benchmark) => 20% (Ramey, 1991)
(2) F^X / F^D: 44% (benchmark) => 23.5% (Ghironi and Melitz, 2005)
(3) F^D ↓: 54.496% ↓ (benchmark) => 81.806% ↓ (Ebell and Haefke, 2009)

➔ Domestic entry costs remain dominant, and export entry costs have little or no impacts in all these sensitivity analysis experiments.

6. Conclusions

Our results: Most of the increase in the **skill premium** is accounted for by the decrease in **domestic entry costs**, while **export entry costs** and TFP (technological change) are comparable, but both are quantitatively much less important.

Next step: Extend the model to a model with several types of labor and compare the quantitative importance of export vs. domestic entry costs for the income distribution, such as below-top and within-top inequality.

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