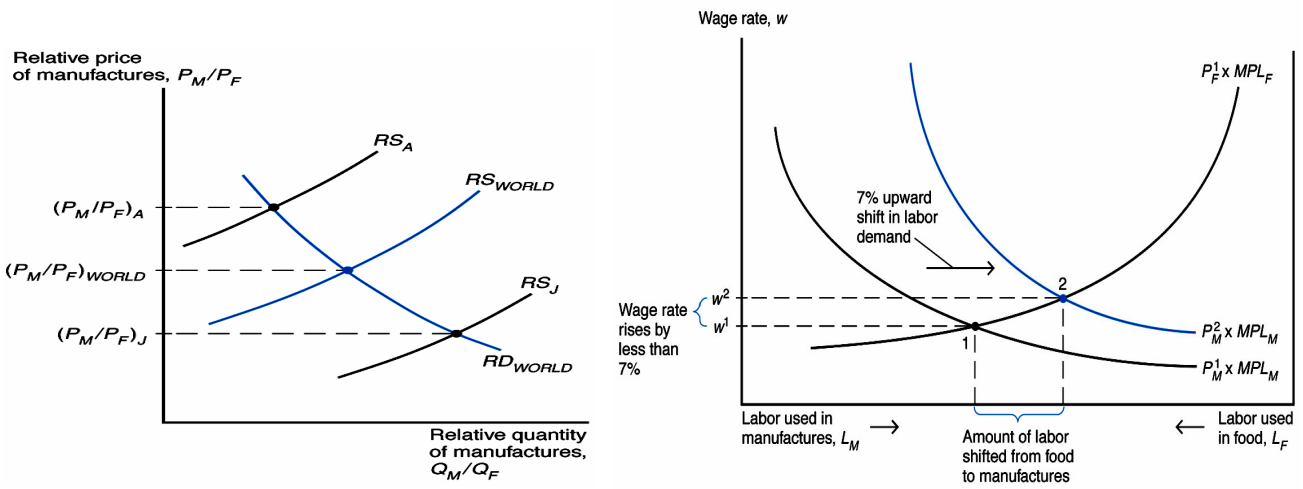
Lecture #6
Specific Factors Model, Part III
(Focus on Distributional Consequences of Trade)
Economics 181, International Trade

I. Summary from last class: Impact of Opening up to Trade on Labor



Recall that we are Japan. With trade, the relative price of manufactures rises relative to Japan's autarky relative price (left hand side diagram). So what happens to wages if Pm rises (and assume there is no change in Pf). We see that the Value of MPL curve (=Pm X PMLm) for manufactures shifts up and to the right as Pm rises, resulting in a higher w and more labor allocated to manufactures.

Although nominal w rises, impact of trade on the mobile factor is ambigious because its real income increases in terms of the imported good (food), and decreases in terms of the exported good (manufactures).

W rises (from w1 to w2)/Pf (no change) = real w rises in terms of food.

But w/Pm falls because Pm rise higher than w rise (we see this on the graph at upper right).

Overall gain to labor depends on how much of the exported and imported goods the workers consume.

II. What happens to return to capital (ie the return to the factor specific to the export sector?)

Capital owners in manufacturing are better off because
(1) The price of the good they produce increases and
(2) Workers move to their industry

Real income of capital owners rise in terms of both goods:

rm = Pm x MPKm implies that rm/Pm = MPKm rises

And rm/Pf rises because rm rises but there is no change in Pf

III. Return to Factor Specific to Food: (Land): The Factor specific to the import-competing sector.

This is the factor specific to the import-competing sector. Land-owners lose because:
(1) The price which at which they buy manufactures rises
(2) Their nominal return t falls.

How do we know?

Recall that Japan now produces more manufactures and less land. So labor flows out of the land sector. This means that MPTl falls. (recall our discussion of the CD function)

So real income of landowners falls in terms of both goods:

tf/Pm falls because tf falls and Pm rises

and tf/Pf falls because tf falls and there is no change in Pf.

IV. Summarizing the impact of an increase in Pm on returns to factors in Japan.

$\%\Delta rm > \%\Delta Pm > \%\Delta w > \%\Delta Pf=0 > \%\Delta tf$

Trade liberalization (opening up to trade):

- **Benefits factors of production specific to the export sector**
- **Hurts factors of production specific to the import-competing sector**
- **Has ambiguous effects on the mobile factors of production**

V. An Example

VI. The Budget Constraint (if there is time)

VI. Empirical Evidence (if there is the time)

(1) Relationship between poverty and trade in Colombia (Goldberg and Pavcnik, 2006)
If workers are "specific" to a sector, we will see poverty increases from import competition And poverty declines from export expansion.
(2) Attitudes towards international trade (Mayda and Rodrik, 2005)

Table 8--Poverty and Trade Exposure Among the Employed Individuals

	$1	$2	$3	$4	$5	$7	$1	$2	$3	$4	$5	$7
Tariff	-0.007	-0.008	-0.011	-0.005	0.01	0.021*	-0.00822*	-0.01042*	-0.01900**	-.015	.002	.018
	[0.167]	[0.199]	[0.131]	[0.537]	[0.217]	[0.086]	[0.097]	[0.088]	[0.026]	[0.203]	[0.889]	[0.419]
Lagged Imports							0.00001**	0.00002***	0.00002	0.00003***	0.00006**	0.00008**
							[0.018]	[0.001]	[0.158]	[0.002]	[0.012]	[0.032]
Lagged Exports							-0.00002	-0.00004	-0.00009**	-0.00012*	-0.00012*	-0.00008
							[0.482]	[0.300]	[0.014]	[0.089]	[0.091]	[0.516]
Year Indicators	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Industry Indicators	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
R^2	0.022	0.057	0.099	0.138	0.171	0.217	0.022	0.057	0.099	0.138	0.171	0.217
Observations	97,798	97,798	97,798	97,798	97,798	97,798	97,798	97,798	97,798	97,798	97,798	97,798

Note: P values based on standard errors that are clustered on industry are reported in parenthesis. ***, ** and * indicate 1, 5 and 10 % significance, respectively. The top row indicates the poverty line used to create the poverty indicator in a given column. All regressions also include controls for age, age squared, gender, whether a person is married, head of the household, education indicators, household size, literacy indicator, whether a person lives in Bogota, occupation indicators, type of employer indicators, whether a person was born in urban area, time in current residency, and the interaction of urban birth with time in current residency. Number of observations refers to number of employed individuals that had nonmissing household income (and thus nonmissing measure of poverty).

Table 1a: Summary Data on Individual Attitudes towards Trade (ISSP data set)

Country	*Trade Opinion*						*average Trade Opinion*		*Pro-Trade Dummy*		*Against-Trade Dummy*	
	agree strongly (1)	agree (2)	neithera agree nor disagree (3)	disagree (4)	disagree strongly (5)	can't choose (8) NA, refused (9)						
Germany West	0.1513	0.2371	0.1849	0.2683	0.0952	0.0632	2.9134	*3*	0.3635	*2*	0.3885	*20*
Germany East	0.2598	0.3039	0.1699	0.1732	0.0474	0.0458	2.4178	*11*	0.2206	*13*	0.5637	*13*
Great Britain	0.2316	0.4017	0.1853	0.1238	0.0142	0.0435	2.2549	*16*	0.1380	*18*	0.6333	*10*
USA	0.2129	0.4309	0.1602	0.1039	0.0293	0.0629	2.2592	*16*	0.1331	*19*	0.6437	*9*
Austria	0.3784	0.3198	0.1092	0.1261	0.0387	0.0278	2.1021	*20*	0.1648	*15*	0.6981	*5*
Hungary	0.4540	0.2580	0.1580	0.0690	0.0260	0.0350	1.9171	*21*	0.0950	*22*	0.7120	*3*
Italy	0.2578	0.3473	0.1453	0.1609	0.0658	0.0229	2.4163	*12*	0.2267	*11*	0.6051	*11*
Ireland	0.2425	0.4135	0.1087	0.1962	0.0272	0.0121	2.3442	*14*	0.2233	*12*	0.6559	*7*
Netherlands	0.0512	0.2393	0.2824	0.3193	0.0551	0.0527	**3.0925**	*1*	**0.3743**	*1*	**0.2906**	*23*
Norway	0.0910	0.2849	0.2737	0.2279	0.0491	0.0733	2.8481	*4*	0.2770	*5*	0.3759	*21*
Sweden	0.1242	0.2809	0.2924	0.1752	0.0640	0.0633	2.7586	*5*	0.2392	*10*	0.4051	*19*
Czech Republic	0.2556	0.2655	0.1773	0.1719	0.0954	0.0342	2.5713	*8*	0.2673	*6*	0.5212	*15*
Slovenia	0.2403	0.2683	0.1795	0.2046	0.0396	0.0676	2.5010	*9*	0.2442	*9*	0.5087	*17*
Poland	0.3004	0.3486	0.1270	0.1176	0.0263	0.0801	2.1531	*18*	0.1439	*17*	0.6489	*8*
Bulgaria	0.5357	0.2380	0.0498	0.0326	0.0452	0.0986	**1.6837**	*23*	**0.0778**	*23*	**0.7738**	*1*
Russia	0.3558	0.2448	0.1174	0.1502	0.0681	0.0637	2.2844	*15*	0.2183	*14*	0.6006	*12*
New Zealand	0.1764	0.3423	0.1937	0.1985	0.0499	0.0393	2.5868	*7*	0.2483	*7*	0.5187	*16*
Canada	0.1413	0.3169	0.2158	0.2184	0.0603	0.0473	2.7265	*6*	0.2787	*4*	0.4582	*18*
Philippines	0.1275	0.5375	0.1633	0.1517	0.0083	0.0117	2.3685	*13*	0.1600	*16*	0.6650	*6*
Japan	0.1409	0.1680	0.2954	0.1497	0.1903	0.0557	3.0852	*2*	0.3400	*3*	0.3089	*22*
Spain	0.2121	0.5012	0.1097	0.0925	0.0098	0.0745	2.1212	*19*	0.1024	*21*	0.7133	*2*
Latvia	0.5019	0.2079	0.0987	0.0900	0.0412	0.0603	1.8940	*22*	0.1312	*20*	0.7098	*4*
Slovak Republic	0.2666	0.2875	0.1599	0.1614	0.0857	0.0389	2.4925	*10*	0.2471	*8*	0.5540	*14*
Mean	0.2357	0.3122	0.1780	0.1666	0.0548	0.0526	2.4643		0.2214		0.5480	
Standard Deviation	0.4245	0.4634	0.3825	0.3727	0.2275	0.2233	1.2021		0.4152		0.4977	

Trade Opinion gives responses to the following question: "How much do you agree or disagree with the following statement: (respondent's country) should limit the import of foreign products in order to protect its national economy." The six columns under *Trade Opinion* present the fraction of individuals in a country giving each of the six possible answers.

Average Trade Opinion is the average of Trade Opinion excluding can't choose (8) and NA, refused (9) answers.

Pro-Trade Dummy is coded as follows: Pro-Trade Dummy=1 if Trade Opinion=4 or 5; 0 if Trade Opinion=1,2,3,8, or 9.

Against-Trade Dummy is coded as follows: Against-Trade Dummy=1 if Trade Opinion=1 or 2; 0 if Trade Opinion=3,4,5,8, or 9.

The second column of each variable gives the ranking of countries according to that variable. Bold numbers correspond to highest and lowest values.

Mean and standard deviation are across individuals in the full sample.

Table 3: Sector Specific Model (ISSP data set)

Probit with country dummy variables	1	2	3	4	5
Dependent variable	**Pro-Trade Dummy**				
age	-0.0004	-0.0004	-0.0005	-0.0005	-0.0004
	0.0004	0.0004	0.0004	0.0004	0.0005
male	0.0802	0.0805	0.0811	0.0808	0.0846
	0.0129**	0.0125**	0.0130**	0.0128**	0.0131**
citizen	-0.0695	-0.0691	-0.068	-0.0678	-0.0693
	0.0390+	0.0387+	0.0396+	0.0392+	0.0413+
education (years of education)	0.019	0.0189	-0.1332	-0.1303	-0.124
	0.0028**	0.0030**	0.0238**	0.0254**	0.0241**
education*gdp			0.016	0.0157	0.0154
			0.0025**	0.0027**	0.0026**
CA sector	-0.0133		-0.0207		0.0115
	0.0239		0.0187		0.0358
CD sector	-0.0252		-0.0204		-0.0168
	0.0116*		0.0122+		0.0311
exports		-271.602		-242.337	
		408.5989		416.4975	
imports		-1,807.68		-1,567.50	
		721.0540*		703.3980*	
education*willingness to move					-0.0336
					0.0308
education*gdp*willingness to move					0.0027
					0.003
willingness to move					0.126
					0.0671+
CA*willingness to move					-0.0454
					0.0574
CD*willingness to move					0.002
					0.0449
number of obs	12432	12432	12432	12432	11473
Pseudo R-squared	0.07	0.07	0.07	0.07	0.07

The table contains the estimated marginal effect on the probability of being pro-trade, given an increase in the value of the relevant regressor, holding all other regressors at their mean value. The standard errors of the marginal effect of each relevant regressor - adjusted for clustering on country - are presented under each marginal effect.

+ significant at 10%; * significant at 5%; ** significant at 1%. *Pro-Trade Dummy* is coded as follows: Pro-Trade Dummy=1 if Trade Opinion=4 or 5; 0 if Trade Opinion=1,2,3,8, or 9

gdp is the log of per capita GDP in 1995, PPP (current international dollars). *Willingness to move*, which varies between 0 and 1, measures the stated willingness to move to another city/town, in order to improve work or living conditions.

A sector is defined as a *CA* (comparative-advantage) sector if its adjusted net imports are less than zero and as a *CD* (comparative-disadvantage) sector if its adjusted net imports are greater than zero. *exports* refers to the value of exports in the respondent's sector of employment, normalized by GDP.

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