Interconnectivity of Making Value

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CHERP
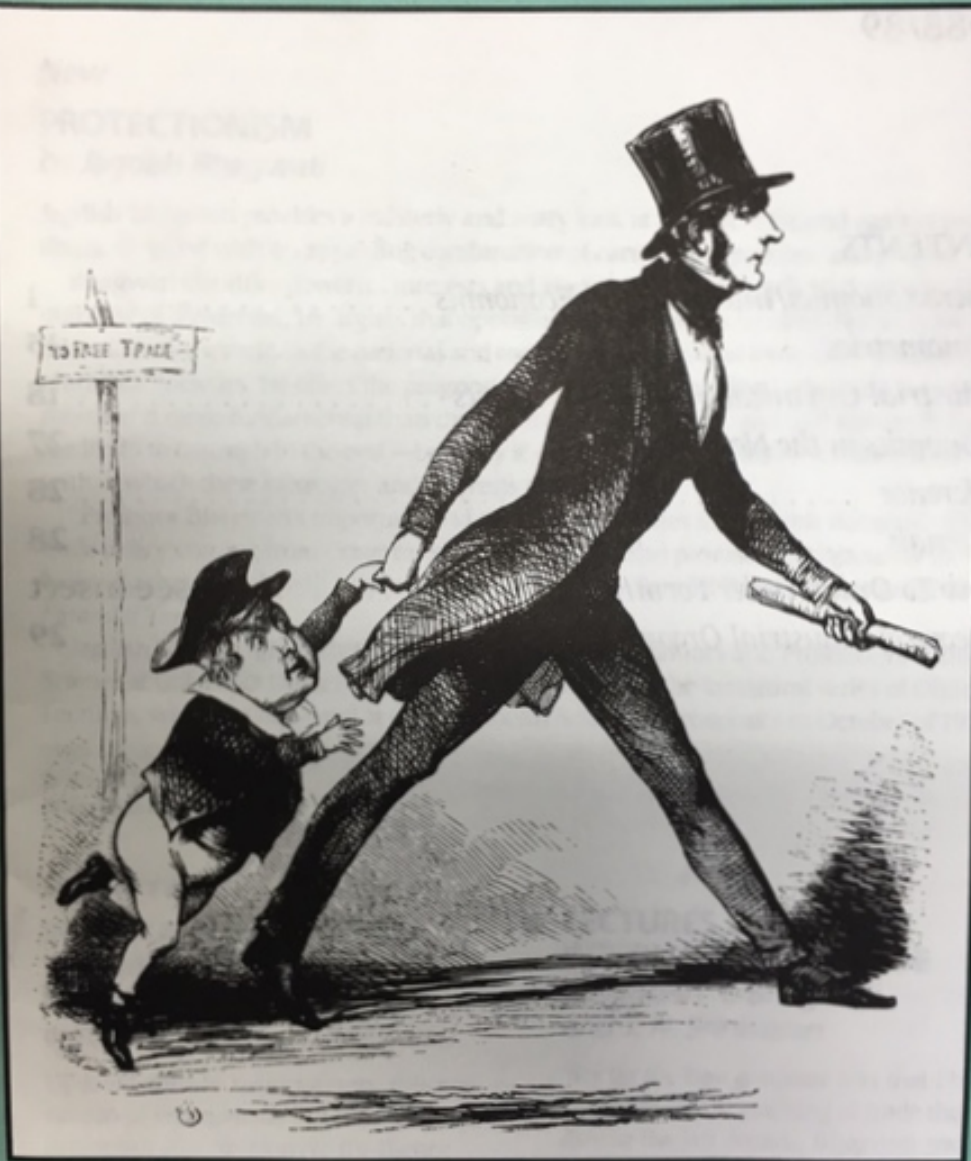
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- BREXIT, TPP, TTIP, and American foreign policy go toward Inward Looking?

Papa Cobden escorts Robert for outside the house toward free trade.

The 1845 cartoon from Punch shows Cobden leading Peel toward free trade, underlining Cobden's advocacy and Peel's later conversion.

Source: Jagdish Bhagwati (1988), Protectionism, The MIT Press.

In 1846, Peel cabinet demolished the Corn Law.

Purpose of analysis

- Globalization vs. Localization//Outward Looking vs. Inward Looking: Is it Political issue or Policy issue?

- Does Liberalization toward the market Integration reduce the employment or trade cost? Economists believe that the reduction in trade costs promote fragmentation across borders.

- OECD has released the skeptical report about the relation between import and employment over years.*

- How should we defend against Anti-Free Trade argument? Responsible for economist to give the evidence!

- * Richard Newfarmer* and Monika Sztajerowska (2012), "Trade and Employment in a Fast-Changing World", in D. Lippoldt (ed.), *Policy Priorities for International Trade and Jobs*, OECD.

OECD (2012), Policy Priorities for International Trade and Jobs.

- "There are also public fears about imports reducing domestic job opportunities. Here the evidence is also clear: there is no systematic long run link between import levels and unemployment. Very high import growth in OECD countries is uncorrelated with unemployment rates across the OECD area."

Conventional Tariff Indicator

- WTO (2015), **World Tariff Profiles 2015**
- World Tariff Profiles gives data on tariffs imposed by WTO members and other economies every year. Joint publication by the WTO, the International Trade Centre (ITC) and the UN Conference on Trade and Development (UNCTAD).
- https://www.wto.org/english/res_e/publications_e/world_tariff_profiles15_e.htm
- **Digital source:**

- World Bank, WITS (World Integrated Trade Solution) for visualization
- http://wits.worldbank.org/trade-visualization.aspx

New Indicator of Trade Costs to include Tariffs and Non-tariff measures

- **Relative Trade Cost Index**
- Anderson, J. and E. van Wincoop (2004), "Trade costs", Journal of Economic Literature, Vol. 42, No. 3, pp. 691-751.
- Novy, D. (2013), "Gravity redux: measuring international trade costs with panel data", Economic Inquiry, Vol. 51, No. 1, pp. 101-121.
- AID FOR TRADE AT A GLANCE 2015: REDUCING TRADE COSTS FOR INCLUSIVE, SUSTAINABLE GROWTH - © OECD, WTO 2015
- https://www.wto.org/english/res_e/booksp_e/aid4trade15_e.pdf

- **The World Bank UNESCAP Trade Costs Database**
- Estimated bilateral trade costs for 1995-2013, by agriculture, manufacture and aggregate sectors. Using trade and production data for 178 economies allows to estimate bilateral inverse Gravity Indicator proposed by Dennis Novy (2009, 2013).
- http://data.worldbank.org/data-catalog/trade-costs-dataset

Data availability in market Connectivity and Global Value Chain

- What should we explain in policy decision toward Globalization? Conventional gravity model uses geographical distance as a proxy of trade costs. Traditional "tariff rate" only explain a part of trade costs.

- UNESCAP and World Bank adopted to make and release the indicator of bilateral trade cost as a comprehensive database, originally initiated Dennis Novy (2009, 2011).

- How to make up the indicator of bilateral trade costs?

- When a good is shipped from country i to j, bilateral variable transportation costs and other variable trade barriers drive up the cost of each unit shipped. Trade costs, makes product prices differ across countries. Specifically, if pi is the net supply price of the good originating in country i, then $pij = pi*tij$, is the price of this good faced by consumers in country j.

Anderson and van Wincoop's gravity equation (2003) with trade costs

$$x_{ij} = \frac{y_i y_j}{y^W} \left(\frac{t_{ij}}{\Pi_i P_j} \right)^{1-\sigma}$$

- where
- xij denotes nominal exports from i to j,
- yi is nominal income of country i and
- yw is world income defined as yw.
- σ>1 is the elasticity of substitution across goods.
- Πi and Pj : country i's and country j's price indices.

Calculating Trade Costs in Novy (2011)

$$\Pi_i P_i = \left(\frac{x_{ii}/y_i}{y_i/y^W} \right)^{\frac{1}{(\sigma-1)}} t_{ii}.$$

Former equation can be solved for the product of outward and inward multilateral Resistance. Novy's method measure the change in multilateral resistance over time as it does not depend on time-invariant trade cost proxies such as distance.

Novy's trade costs measured as:

$$\tau_{ij} \equiv \left(\frac{t_{ij} t_{ji}}{t_{ii} t_{jj}} \right)^{\frac{1}{2}} - 1 = \left(\frac{x_{ii} x_{jj}}{x_{ij} x_{ji}} \right)^{\frac{1}{2(\sigma-1)}} - 1$$

Designing analysis from Gravity Model to one with Fragmentation and Trade in Value Added (TiVA)

- *Conventional Gravity Model*
- $Xij = f(Yi, Yj, Distance\ ij)$ *(1)*
- *where Yi, Yj =National Income in the i-th and j-th economy; Dij = Distance between i-th and j-th economies*

- *Reduced trade costs promote Fragmentation across borders*
- $\Sigma VA\ j = f(VAi, VAj, TCij)$ *(2)*
- *where VAi, VAj =Value-Added by sourcing i-th and j-th economy; TCij =Trade Cost between i-th and j-th economy*

- *Estimation:*
- *Change of ΣVAj = f(Change of VAi, Change of VAj, Change of TCij)*   *(3)*

Bilateral Trade Cost

- "The **trade cost measure, based on Novy (2012)** is a comprehensive all-inclusive measure based on micro-theory and calculated using macro-economic data, providing an alternative measure of trade facilitation performance. Following release of a first version of the database in 2010 using trade and GDP data, an improved and expanded version was released in December 2011 - based on gross output data and providing sectoral trade cost estimates for about 100 countries." (ARTNet, June 2016)

- In 2011, United Nations ESCAP and the World Bank (WB) joined to develop and release a **relative trade cost**. The current data covers from 1995 to 2014 for over 180 countries.

- **UNESCAP ARTNer (Asia-Pacific Research and Training Network on Trade)(2016), ESCAP-World Bank Trade Cost Database**

- http://artnet.unescap.org/databases.html#first
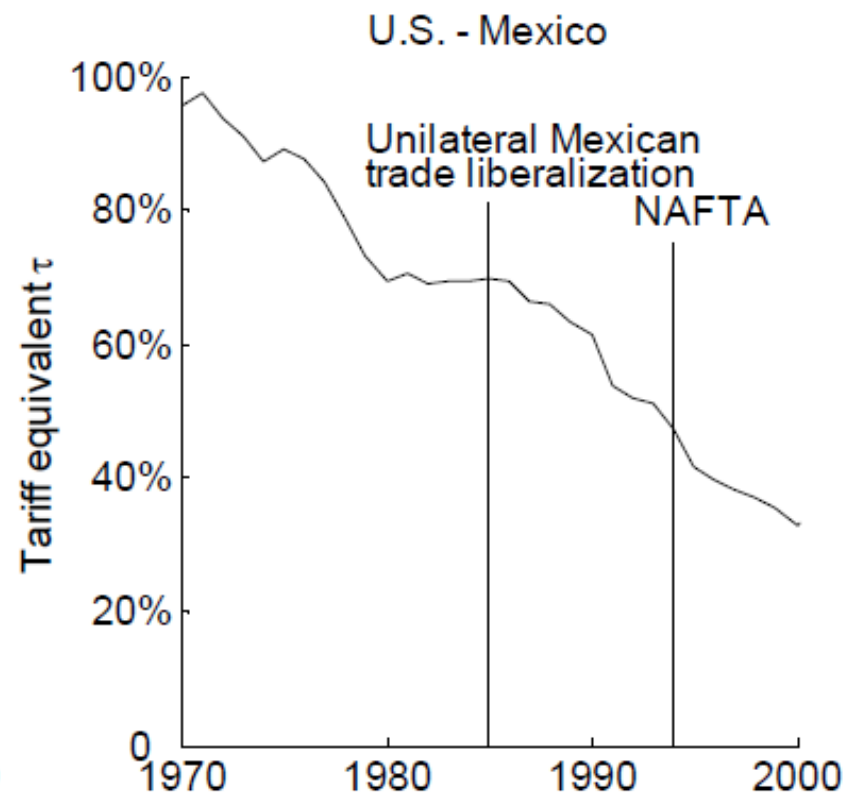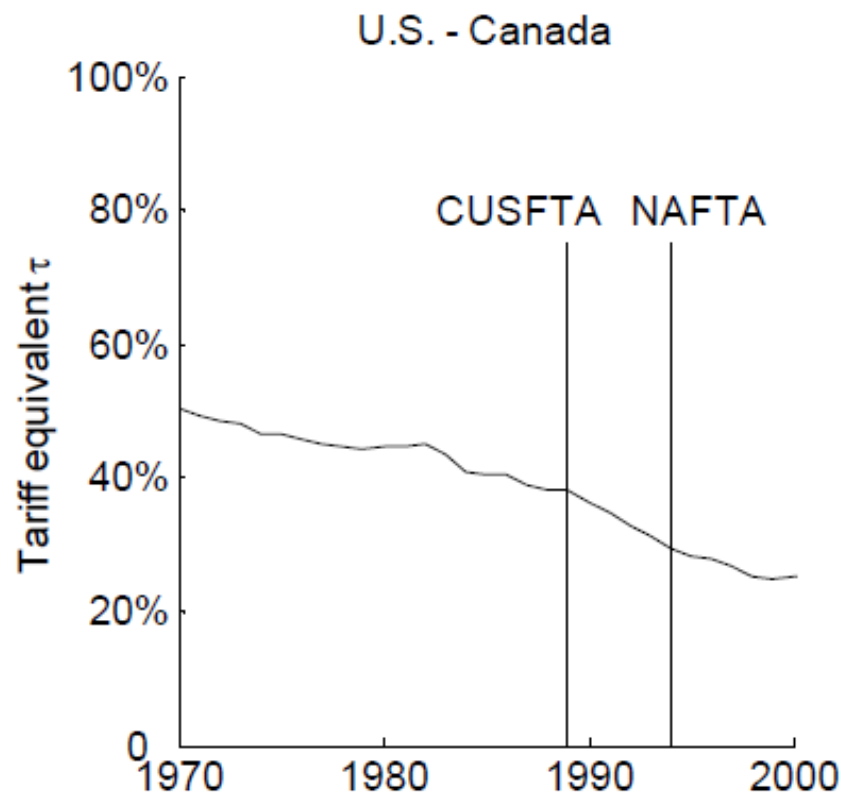
Trade Cost Measure for the U.S.
Source: Dennis Novy (2011), "Gravity Redux: Measuring International Trade Costs with Panel Data",

| Partner country | Tariff equivalent τ_{ij} in % | | Percentage change |
	1970	2000	
CANADA	50	25	−50
GERMANY	95	70	−26
JAPAN	85	65	−24
KOREA	107	70	−35
MEXICO	96	33	−66
UK	95	63	−34
Simple average	88	54	−38
Trade-weighted average	74	42	−44

The U.S. relative bilateral trade cost measure with Canada and Mexico
Source: D. Novy (2011).

Free Trade Agreement promotes the reduction of trade cost

- Novy (2011) found that "over the period from 1970 to 2000, U.S. trade costs declined by about 40 percent on average, consistent with improvements in transportation and communication technology. But coinciding with the formation of NAFTA, the decline in trade costs was considerably steeper for Canada and Mexico."

Fragmentation to be explained in TiVA data: Origin of value added in gross exports (change 1995-2011(%))

Origin of value added in gross exports: (change 1995-2011(%))

Source country		<<				TPP					>>		APEC						>>					APEC	EU28
		AUS	BRN	CAN	CHL	JPN	MYS	MEX	NZL	PER	SGP	USA	VNM	CHN	HKG	IDN	KOR	PNG	PHL	RUS	THA	TWN	IND	DEU	APEC	EU28
Australia	AUS	3.31	0.50	1.59	5.73	5.13	2.47	14.56	0.79		2.88	2.61	50.66	22.39	1.19	1.43	8.30		1.68	14.68	8.73	5.44	34.64	5.06	3.80	3.63
Brunei Darussalam	BRN	123.71	4.13	6.25	18.35	6.55	5.31	19.78	334.37		-0.05	4.03	147.50	31.83	0.21	99.67	8.65		5.21	15.13	0.91	2.88	533.96	5.16	7.91	9.55
Canada	CAN	2.06	4.35	1.58	5.72	1.85	2.61	6.28	1.35		3.34	2.72	30.37	11.11	0.91	1.38	5.02		1.19	6.03	3.67	2.11	16.87	3.95	2.09	3.97
Chile	CHL	11.94	2.64	10.72	3.26	4.30	2.95	12.85	0.77		2.16	4.49	92.45	35.84	2.32	2.47	7.79		3.02	13.96	6.71	2.46	45.58	3.45	2.97	4.00
Japan	JPN	0.90	0.86	0.42	1.51	0.67	1.52	2.93	-0.23		0.01	-0.06	10.29	7.23	0.04	0.49	2.61		-0.20	6.89	2.55	0.98	9.86	1.14	0.68	0.96
Malaysia	MYS	11.53	1.30	1.38	6.29	4.07	2.39	7.74	3.29		0.55	0.42	30.06	23.21	0.77	7.19	6.05		2.34	13.37	5.31	3.61	33.02	2.96	2.43	2.08
Mexico	MEX	11.78	5.03	3.82	3.02	3.36	5.80	2.75	0.63		2.60	3.89	59.46	27.02	1.73	2.40	10.32		0.22	9.29	5.03	2.84	59.36	6.83	3.08	5.70
New Zealand	NZL	3.10	0.74	0.99	0.36	2.31	2.16	6.20	1.66		5.89	1.88	32.06	8.62	0.21	1.21	2.40		1.80	2.82	4.48	1.59	22.09	2.90	1.62	1.94
Peru	PER																									
Singapore	SGP	4.78	1.75	1.65	3.24	1.97	4.94	4.28	2.27		2.22	0.36	7.91	16.55	2.99	2.93	6.70		1.63	4.77	3.73	3.07	31.22	4.90	3.04	3.85
United States	USA	2.01	4.46	0.64	4.33	1.28	3.52	1.69	0.53		1.07	1.38	27.33	9.43	1.15	0.93	2.71		0.16	4.78	2.31	1.07	23.96	3.25	1.60	3.02
Viet Nam	VNM	15.51	9.48	17.06	30.75	8.35	30.94	28.90	14.66		2.30	28.51	10.37	49.37	4.64	14.46	31.88		1.72	35.61	10.13	8.55	196.23	16.65	12.53	15.49
China	CHN	22.96	9.75	18.79	56.49	17.50	30.29	95.74	11.33		14.33	15.81	113.47	12.98	2.51	18.02	25.37		15.90	57.81	28.34	18.44	182.92	26.38	20.29	30.04
Hong Kong	HKG	3.03	1.13	2.01	0.67	1.28	1.65	4.54	1.23		1.95	1.19	10.05	3.42	1.46	1.86	4.89		-0.04	15.55	2.93	1.32	16.64	3.66	1.32	3.20
Indonesia	IDN	8.05	3.45	3.07	3.61	4.34	12.31	7.77	2.60		3.50	2.14	31.29	14.34	2.92	2.87	8.37		4.23	11.09	13.59	5.09	59.02	3.44	3.80	3.74
Korea	KOR	1.60	0.69	1.45	1.97	2.49	3.28	8.12	0.36		1.08	0.93	12.66	11.30	0.06	1.59	2.10		0.67	6.33	4.08	2.60	20.86	3.70	2.50	3.58
Papua New Guinea	PNG																									
Philippines	PHL	3.45	2.12	1.41	4.78	3.79	7.60	11.19	1.94		2.38	0.18	30.87	41.97	0.21	5.06	6.28		2.05	18.24	7.40	4.34	84.36	3.80	2.63	2.77
Russia	RUS	26.68	4.49	4.91	8.67	7.66	7.20	4.31	23.08		8.73	5.88	30.75	9.46	2.16	7.07	14.31		5.84	5.26	9.56	3.13	16.04	8.55	5.14	9.54
Thailand	THA	4.92	0.66	1.09	2.51	2.93	5.57	6.18	1.56		0.90	0.68	20.01	15.93	0.42	7.02	6.88		1.85	16.94	1.99	2.06	24.03	2.16	2.31	2.02
Chinese Taipei	TWN	0.98	1.28	1.00	1.26	2.07	3.55	5.14	0.34		1.59	0.31	8.77	7.38	0.28	0.79	6.41		0.74	10.10	2.58	1.22	25.19	1.73	1.05	2.19
India	IND	8.07	8.19	9.21	9.78	5.81	14.12	16.61	4.07		15.77	10.13	78.20	63.61	10.30	12.08	20.20		10.97	7.31	13.08	12.32	8.72	17.17	17.49	17.08
Germany	DEU	1.81	0.13	1.93	2.43	1.86	3.11	4.32	1.31		1.80	1.62	19.26	13.28	1.65	0.20	4.78		0.03	4.19	2.38	1.23	13.79	1.31	3.84	1.74
APEC	APEC	3.36	4.02	1.48	3.35	0.78	2.77	2.85	1.63		1.91	1.41	12.11	12.13	1.39	2.82	2.63		1.74	5.38	2.43	1.47	29.54	4.16	2.62	4.13
EU28	EU28	1.89	1.10	1.61	3.00	1.98	2.55	4.43	0.75		2.81	1.66	17.88	12.16	1.30	0.58	4.54		0.22	4.39	2.74	1.45	15.99	1.44	3.70	1.75

Data extracted on 28 Aug 2016 13:49 UTC (GMT) from OECD iLibrary **Dataset: Origin of value added in gross exports**

Change of VA in gross export = (VAX2011 – VAX1995) / VAX1995
The above matrix was made by T. Hasegawa, CHERP.

Relative Trade Cost in TPP-APEC-OTHERS; 1996-2012 (advalorem %)

GTT_1996			AUS	BRN	CAN	CHL	JPN	MYS	MEX	NZL	PER	SGP	USA	VNM	CHN	HKG	IDN	KOR	PNG	PHL	RUS	THA	IND	DEU
Australia	AUS	1996	..	..	123.84	177.25	93.09	79.79	196.52	57.92	238.51	128.70	102.76	..	122.66	77.74	112.98	92.33	..	127.33	201.06	106.23	151.17	123.74
		2012	..	250.86	126.08	117.33	88.99	73.98	158.71	52.93	207.04	112.23	94.44	87.91	82.60	80.36	103.99	85.04	55.10	127.69	204.46	75.69	112.06	111.56
		Change			0.02	-0.34	-0.04	-0.07	-0.19	-0.09	-0.13	-0.13	-0.08		-0.33	0.03	-0.08	-0.08		0.00	0.02	-0.29	-0.26	-0.10
Brunei Darussalam	BRN	1996	..	..																				
		2012	250.86	..	268.95		216.52	98.05	552.79	231.99	..	141.18	226.99	167.85	188.01	210.58	211.49	166.21	..	217.24	997.34	144.07	259.41	214.47
		Change			#VALUE!					#VALUE!														
Canada	CAN	1996	123.84	..	..	143.31	98.53	110.51	99.22	137.67	170.21	196.00	30.31	..	119.07	82.59	136.41	114.40	..	152.40	128.42	131.03	163.71	108.83
		2010	126.08	268.95	..	104.64	99.57	112.16	77.80	135.29	100.06	189.04	30.32	123.79	92.47	105.41	145.72	104.40	302.46	149.22	163.92	125.84	140.62	105.26
		Change	0.02	#VALUE!	#VALUE!	-0.27	0.01	0.01	-0.22	-0.02	-0.41	-0.04	0.00	#VALUE!	-0.22	0.28	0.07	-0.09	#VALUE!	-0.02	0.28	-0.04	-0.14	-0.03
Chile	CHL	1996	177.25	..	143.31	..	119.85	143.63	113.16	166.80	108.85	225.22	95.57	..	142.82	134.26	158.06	106.60	..	181.44	124.22	164.84	176.10	122.03
		2012	117.33	..	104.64	..	111.00	143.41	93.18	182.53	75.10	285.85	75.30	116.07	78.37	159.91	183.39	86.39	..	216.36	195.01	125.84	158.15	115.53
		Change	-0.34		-0.27		-0.07	-0.00	-0.18	0.09	-0.31	0.27	-0.21		-0.45	0.19	0.16	-0.19		0.19	0.57	-0.24	-0.10	-0.05
Japan	JPN	1996	93.09	..	98.53	119.85	..	61.66	138.68	105.56	168.11	117.06	67.38	..	83.00	62.06	93.07	76.03	..	90.03	94.65	74.25	140.86	93.39
		2012	88.99	216.52	99.57	111.00	..	70.13	120.37	109.47	157.58	124.27	75.24	67.24	67.43	79.25	93.70	63.74	159.31	82.20	118.87	62.63	121.26	92.19
		Change	-0.04		0.01	-0.07		0.14	-0.13	0.04	-0.06	0.06	0.12		-0.19	0.28	0.01	-0.16		-0.09	0.26	-0.16	-0.14	-0.01
Malaysia	MYS	1996	79.79	..	110.51	143.63	61.66	..	153.89	106.25	232.73	54.07	66.06	..	100.01	50.06	89.65	75.44	..	84.97	107.24	66.85	105.42	86.17
		2012	73.98	98.05	112.16	143.41	70.13	..	138.87	93.90	202.74	60.14	80.87	53.62	64.34	50.46	66.19	71.83	96.54	85.79	157.59	48.89	84.87	82.91
		Change	-0.07		0.01	-0.00	0.14		-0.10	-0.12	-0.13	0.11	0.22		-0.36	0.01	-0.26	-0.05		0.01	0.47	-0.27	-0.19	-0.04
Mexico	MEX	1996	196.52	..	99.22	113.16	138.68	153.89	..	191.28	152.26	202.01	42.38	..	195.16	137.96	195.14	137.13	..	203.49	154.01	192.93	220.92	127.75
		2012	158.71	552.79	77.80	93.18	120.37	138.87	..	171.11	130.43	202.22	35.83	153.88	116.72	127.69	209.45	119.31	..	200.97	179.75	139.79	166.97	95.82
		Change	-0.19		-0.22	-0.18	-0.13	-0.10		-0.11	-0.14	0.00	-0.15		-0.40	-0.07	0.07	-0.13		-0.01	0.17	-0.28	-0.24	-0.25
New Zealand	NZL	1996	57.92	..	137.67	166.80	105.56	106.25	191.28	..	229.12	177.61	118.85	..	152.66	104.27	155.53	126.53	..	162.93	153.91	144.67	186.27	137.21
		2010	52.93	231.99	135.29	182.53	109.47	93.90	171.11	..	200.42	153.00	114.40	123.41	109.66	116.53	136.30	111.58	126.57	152.20	214.17	110.10	168.62	131.94
		Change	-0.09	#VALUE!	-0.02	0.09	0.04	-0.12	-0.11		-0.13	-0.14	-0.04	#VALUE!	-0.28	0.12	-0.12	-0.12	#VALUE!	-0.07	0.39	-0.24	-0.10	-0.04
Peru	PER	1996	238.51	..	170.21	108.85	168.11	232.73	152.26	229.12	..	321.22	120.86	..	159.22	168.42	232.18	159.09	..	257.85	192.11	197.82	261.10	150.22
		2012	207.04	..	100.06	75.10	157.58	202.74	130.43	200.42	..	345.62	94.75	152.71	119.59	178.91	201.57	138.10	..	280.09	188.60	167.64	175.57	130.04
		Change	-0.13		-0.41	-0.31	-0.06	-0.13	-0.14	-0.13		0.08	-0.22		-0.25	0.06	-0.13	-0.13		0.09	-0.02	-0.15	-0.33	-0.13
Singapore	SGP	1996	128.70	..	196.00	225.22	117.06	54.07	202.01	177.61	321.22	..	111.89	..	149.72	79.64	..	122.79	..	129.24	146.00	96.71	161.93	141.87
		2012	112.23	141.18	189.04	285.85	124.27	60.14	202.22	153.00	345.62	..	129.12	102.85	115.32	69.98	100.67	101.16	136.99	115.85	223.92	99.97	125.73	144.63
		Change	-0.13		-0.04	0.27	0.06	0.11	0.00	-0.14	0.08		0.15		-0.23	-0.12		-0.10		-0.10	0.53	0.03	-0.22	0.02
United States	USA	1996	102.76	..	30.31	95.57	67.38	66.06	42.38	118.85	120.86	111.89	..	..	95.86	55.18	109.54	77.12	..	88.40	76.36	89.32	119.84	80.81
		2012	94.44	226.99	30.32	75.30	75.24	80.87	35.83	114.40	94.75	129.12	..	79.67	70.98	68.00	119.51	73.00	166.38	101.61	121.13	91.46	98.14	72.01
		Change	-0.08		0.00	-0.21	0.12	0.22	-0.15	-0.04	-0.22	0.15			-0.26	0.23	0.09	-0.05		0.15	0.59	0.02	-0.18	-0.11
Vietnam	VNM	1996	..	..																				
		2012	87.91	167.85	123.79	116.07	67.24	53.62	153.88	123.41	152.71	102.85	79.67	..	64.80	53.16	90.25	54.32	167.81	87.17	108.50	61.74	92.28	85.29
		Change			#VALUE!					#VALUE!														
China	CHN	1996	122.66	..	119.07	142.82	83.00	100.01	195.16	152.66	159.22	149.72	95.86	..	..	32.11	138.20	87.62	..	148.11	68.86	122.50	170.82	109.37
		2012	82.60	188.01	92.47	78.37	67.43	64.34	116.72	109.66	119.59	115.32	70.98	64.80	..	17.08	102.05	56.30	141.21	98.71	96.45	77.41	103.65	71.50
		Change	-0.33		-0.22	-0.45	-0.19	-0.36	-0.40	-0.28	-0.25	-0.23	-0.26			-0.47	-0.26	-0.36		-0.33	0.40	-0.37	-0.39	-0.35
Hong Kong	HKG	1996	77.74	..	82.59	134.26	62.06	50.06	137.96	104.27	168.42	79.64	55.18	..	32.11	..	90.43	67.73	..	78.67	118.45	69.15	112.04	70.55
		2012	80.36	210.58	105.41	159.91	79.25	50.46	127.69	116.53	178.91	69.98	68.00	53.16	17.08	..	115.92	46.95	164.12	67.91	152.37	53.75	69.68	102.21
		Change	0.03		0.28	0.19	0.28	0.01	-0.07	0.12	0.06	-0.12	0.23		-0.47		0.28	-0.31		-0.14	0.29	-0.22	-0.38	0.45
Indonesia	IDN	1996	112.98	..	136.41	158.06	93.07	89.65	195.14	155.53	232.18	..	109.54	..	138.20	90.43	..	106.52	..	148.67	153.23	119.32	146.45	120.38
		2012	103.99	211.49	145.72	183.39	93.70	66.19	209.45	136.30	201.57	100.67	119.51	90.25	102.05	115.92	..	93.87	158.69	119.66	166.22	83.18	106.86	126.65
		Change	-0.08		0.07	0.16	0.01	-0.26	0.07	-0.12	-0.13		0.09		-0.26	0.28		-0.12		-0.20	0.08	-0.30	-0.27	0.05
Korea, Rep.	KOR	1996	92.33	..	114.40	106.60	76.03	75.44	137.13	126.53	159.09	122.79	77.12	..	87.62	67.73	106.52	..	..	118.71	73.53	107.56	146.09	99.32
		2012	85.04	166.21	104.40	86.39	63.74	71.83	119.31	111.58	138.10	101.16	73.00	54.32	56.30	46.95	93.87	..	189.49	85.78	97.02	85.48	102.93	88.38
		Change	-0.08		-0.09	-0.19	-0.16	-0.05	-0.13	-0.12	-0.13	-0.18	-0.05		-0.36	-0.31	-0.12			-0.28	0.32	-0.21	-0.30	-0.11
Papua New Guinea	PNG	1996	..	..																				
		2010	55.10	..	302.46	..	159.31	96.54	..	126.57	..	136.99	166.38	167.81	141.21	164.12	158.69	189.49	..	156.21	331.35	147.72	229.62	156.67
		Change			#VALUE!					#VALUE!														
Philippines	PHL	1996	127.33	..	152.40	181.44	90.03	84.97	203.49	162.93	257.85	129.24	88.40	..	148.11	78.67	148.67	118.71	..	..	148.89	106.43	198.20	123.92
		2012	127.69	217.24	149.22	216.36	82.20	85.79	200.97	152.20	280.09	115.85	101.61	87.17	98.71	67.91	119.66	85.78	156.21	..	220.46	80.14	157.96	117.33
		Change	0.00		-0.02	0.19	-0.09	0.01	-0.01	-0.07	0.09	-0.10	0.15		-0.33	-0.14	-0.20	-0.28			0.48	-0.25	-0.20	-0.05
Russian Federation	RUS	1996	201.06	..	128.42	124.22	94.65	107.24	154.01	153.91	192.11	146.00	76.36	..	68.86	118.45	153.23	73.53	..	148.89	..	113.34	90.26	61.36
		2012	204.46	997.34	163.92	195.01	118.87	157.59	179.75	214.17	188.60	223.92	121.13	108.50	96.45	152.37	166.22	97.02	331.35	220.46	..	147.33	129.51	77.77
		Change	0.02		0.28	0.57	0.26	0.47	0.17	0.39	-0.02	0.53	0.59		0.40	0.29	0.08	0.32		0.48		0.30	0.43	0.27
Thailand	THA	1996	106.23	..	131.03	164.84	74.25	66.85	192.93	144.67	197.82	96.71	89.32	..	122.50	69.15	119.32	107.56	..	106.43	113.34	..	155.61	107.27
		2012	75.69	144.07	125.84	125.84	62.63	48.89	139.79	110.10	167.64	99.97	91.46	61.74	77.41	53.75	83.18	85.48	147.72	80.14	147.33	..	103.40	102.48
		Change	-0.29		-0.04	-0.24	-0.16	-0.27	-0.28	-0.24	-0.15	0.03	0.02		-0.37	-0.22	-0.30	-0.21		-0.25	0.30		-0.34	-0.04
India	IND	1996	151.17	..	163.71	176.10	140.86	105.42	220.92	186.27	261.10	161.93	119.84	..	170.82	112.04	146.45	146.09	..	198.20	90.26	155.61	..	120.82
		2012	112.06	259.41	140.62	158.15	121.26	84.87	166.97	168.62	175.57	125.73	98.14	92.28	103.65	69.68	106.86	102.93	229.62	157.96	129.51	103.40	..	102.38
		Change	-0.26		-0.14	-0.10	-0.14	-0.19	-0.24	-0.09	-0.33	-0.22	-0.18		-0.39	-0.38	-0.27	-0.30		-0.20	0.43	-0.34		-0.15
Germany	DEU	1996	123.74	..	108.83	122.03	93.39	86.17	127.75	137.21	150.22	141.87	80.81	..	109.37	70.55	120.38	99.32	..	123.92	61.36	107.27	120.82	..
		2012	111.56	214.47	105.26	115.53	92.19	82.91	95.82	131.94	130.04	144.63	72.01	85.29	71.50	102.21	126.65	88.38	156.67	117.33	77.77	102.48	102.38	..
		Change	-0.10		-0.03	-0.05	-0.01	-0.04	-0.25	-0.04	-0.13	0.02	-0.11		-0.35	0.45	0.05	-0.11		-0.05	0.27	-0.04	-0.15	

Result of Estimation

- Estimation by Ordinary Least Squares
- *Change of ΣVAj = f(Change of VAi, Change of VAj, Change of TCij)   (3)*
- Missing values for series ====>   *VAij: 85, TCIJ: 45, TVAi: 1, TVAj: 1*
- Dependent variable: *VAij*   Number of observations: 380
- Mean of dep. var. = 14.0074   LM het. test = .237659 [.626]
- Std. dev. of dep. var. = 38.4207   Durbin-Watson = 1.82133 [<.059]
- Sum of squared residuals = 526441. Jarque-Bera test = 206759. [.000]
- Variance of residuals = 1400.11   Ramsey's RESET2 = .318977 [.573]
- Std. error of regression = 37.4180   F (zero slopes) = 7.86156 [.000]
- R-squared = .059023   Schwarz B.I.C. = 1925.48
- Adjusted R-squared = .051515   Log likelihood = -1913.60
-
-                Estimated   Standard

Variable	Coefficient	Error	t-statistic	P-value
C	-2.95551	4.12335	-.716774	[.474]
TCij	2.15898	10.4147	.207301	[.836]
TVAi	6.18485	2.48628	2.48759	[.013]
TVAj	10.0941	2.47823	4.07312	[.000]

Indicator of OECD FDI Restrictiveness works in explaining Globalisation

Table 3.1. OECD FDI restrictiveness index*

	ARG	AUS	BRA	CAN	CHN	REU	FRA	GER	IND	IDN	ITA	JPN	MEX	RUS	ZAF	KOR	TUR	GBR	US	ROW
Agric. etc	0.000	0.075	0.397	0.200	0.697	0.084	0.153	0.092	0.300	0.417	0.333	1.000	0.517	0.317	0.060	0.333	0.000	0.206	0.183	0.217
Proc. food	0.000	0.075	0.025	0.100	0.248	0.006	0.000	0.000	0.120	0.060	0.000	0.050	0.100	0.183	0.060	0.000	0.000	0.023	0.000	0.071
Other primary	0.000	0.088	0.025	0.150	0.390	0.018	0.009	0.000	0.525	0.085	0.020	1.000	0.100	0.943	0.060	0.000	0.050	0.023	0.100	0.191
Textiles etc	0.000	0.075	0.025	0.100	0.248	0.006	0.000	0.000	0.120	0.060	0.000	0.050	0.100	0.183	0.060	0.000	0.000	0.023	0.000	0.071
Wood etc	0.000	0.075	0.025	0.100	0.248	0.006	0.000	0.000	0.120	0.060	0.000	0.050	0.100	0.183	0.060	0.000	0.000	0.023	0.000	0.071
Chemicals	0.000	0.075	0.025	0.100	0.280	0.006	0.000	0.000	0.010	0.135	0.000	0.333	0.100	0.183	0.060	0.000	0.000	0.023	0.000	0.071
Metals	0.000	0.075	0.025	0.100	0.243	0.006	0.000	0.000	0.000	0.060	0.000	0.000	0.100	0.183	0.060	0.000	0.000	0.023	0.000	0.071
Vehicles	0.000	0.075	0.025	0.100	0.265	0.006	0.000	0.000	0.000	0.060	0.000	0.000	0.113	0.250	0.060	0.000	0.000	0.023	0.000	0.071
Elect. mach.	0.000	0.075	0.025	0.100	0.225	0.006	0.000	0.000	0.000	0.060	0.000	0.000	0.100	0.183	0.060	0.000	0.000	0.023	0.000	0.071
Other mach.	0.000	0.075	0.025	0.100	0.243	0.006	0.000	0.000	0.000	0.060	0.000	0.000	0.100	0.183	0.060	0.000	0.000	0.023	0.000	0.071
Electricity	0.000	0.075	0.025	0.100	0.608	0.060	0.000	0.000	0.000	0.110	0.000	0.000	0.100	0.250	0.060	0.417	0.000	0.023	0.222	0.282
Gas, water	0.000	0.075	0.025	0.100	0.608	0.060	0.000	0.000	0.000	0.110	0.000	0.000	0.100	0.250	0.060	0.417	0.000	0.023	0.222	0.282
Construction	0.000	0.075	0.025	0.100	0.265	0.006	0.000	0.000	0.000	0.310	0.000	0.000	0.100	0.183	0.060	0.000	0.000	0.023	0.000	0.132
Trade (**)	0.000	0.075	0.025	0.100	0.242	0.007	0.000	0.000	0.280	0.539	0.005	0.000	0.133	0.238	0.060	0.000	0.000	0.023	0.000	0.071
Other transp.	0.125	0.075	0.275	0.100	0.415	0.018	0.000	0.000	0.000	0.129	0.000	0.000	0.475	0.183	0.060	0.000	0.000	0.023	0.000	0.078
Water transp.	0.000	0.125	0.025	0.100	0.850	0.105	0.225	0.275	0.000	0.560	0.225	1.000	0.550	0.183	0.060	0.950	0.125	0.073	1.000	0.469
Air transp.	0.000	0.475	0.575	0.600	0.730	0.276	0.225	0.325	0.523	0.560	0.225	1.000	0.600	0.758	0.560	0.550	0.500	0.248	0.650	0.532
Communications	0.250	0.300	0.350	0.650	0.900	0.034	0.024	0.013	0.513	0.563	0.181	0.250	0.488	0.333	0.060	0.450	0.125	0.135	0.155	0.185
Other finance	0.000	0.138	0.025	0.100	0.515	0.016	0.047	0.008	0.160	0.135	0.027	0.000	0.150	0.471	0.085	0.030	0.000	0.025	0.063	0.127
Insurance	0.000	0.125	0.025	0.000	0.800	0.008	0.068	0.000	0.500	0.160	0.000	0.000	0.100	0.658	0.110	0.000	0.000	0.023	0.000	0.094
Other bus. serv.	0.000	0.103	0.025	0.100	0.138	0.064	0.003	0.000	0.500	0.560	0.000	0.000	0.103	0.308	0.385	0.000	0.125	0.023	0.000	0.141
Other services	0.000	0.400	0.000	0.000	0.275	0.304	0.000	0.000	0.000	1.000	0.000	0.100	0.167	0.733	0.010	0.000	1.000	0.000	0.000	0.311
OVERALL INDEX	0.025	0.127	0.116	0.164	0.457	0.045	0.038	0.023	0.223	0.331	0.073	0.257	0.225	0.350	0.085	0.131	0.074	0.061	0.084	0.152

ARG=Argentina, AUS=Australia, BRA=Brazil, CAN=Canada, REU=Rest of EU, FRA=France, GER=Germany, IND=India, IDN=Indonesia, ITA=Italy, JPN=Japan, MEX=Mexico, RUS=Russia, ZAF=South Africa, KOR=Republic of Korea, TUR=Turkey, GBR=Great Britain, United States=United States, ROW=Rest of world.   * (0 = no restriction, 1 = full restriction); ** Wholesale and retail trade.
Source: Kalinova, Palerm and Thomsen (2010).

- FDI restrictions are spread across both the developed and the developing world. They are particularly severe in developing countries such as China and Indonesia and in some emerging countries such as Russia. They also feature in at least some services sectors in developed countries such as Australia, Canada, Japan and the United States.

G20のFDI規制指数

日本の輸送、通信分野の規制は強い

Table 4.1. OECD FDI restrictiveness indices for G20 economies, 2010 0 denotes fully open; 1 fully closed

FDI RR INDEX 2010	AVE-RAGE ALL*	OECD	NON-OECD **	AUS	CAN	FRA	DEU	ITA	JPN	KOR	MEX
Manufacturing	0.041	0.029	0.063	0.075	0.100	0.000	0.000	0.000	0.077	0.000	0.103
Electricity	0.123	0.118	0.133	0.075	0.100	0.000	0.000	0.000	0.000	0.417	0.100
Construction	0.055	0.027	0.111	0.075	0.100	0.000	0.000	0.000	0.000	0.000	0.100
Distribution	0.062	0.029	0.128	0.075	0.100	0.000	0.000	0.000	0.000	0.000	0.150
Transport	0.252	0.228	0.300	0.225	0.267	0.150	0.200	0.150	0.667	0.500	0.542
Hotels & restaurants	0.047	0.030	0.082	0.075	0.100	0.000	0.000	0.015	0.000	0.000	0.100
Media	0.221	0.168	0.328	0.200	0.700	0.048	0.025	0.363	0.000	0.400	0.625
Communications	0.134	0.107	0.188	0.400	0.600	0.000	0.000	0.000	0.500	0.500	0.350
Financial services	0.078	0.046	0.142	0.133	0.067	0.054	0.005	0.018	0.000	0.020	0.133
Business services	0.109	0.075	0.178	0.103	0.100	0.003	0.000	0.000	0.000	0.000	0.103
FDI INDEX TOTAL	0.114	0.091	0.159	0.127	0.164	0.038	0.023	0.073	0.257	0.131	0.225

FDI RR INDEX 2010	TUR	GBR	USA	ARG	BRA	CHN	IND	IDN	RUS	SAU	ZAF
Manufacturing	0.000	0.023	0.000	0.000	0.025	0.252	0.026	0.075	0.197	0.180	0.060
Electricity	0.000	0.023	0.222	0.000	0.025	0.608	0.000	0.110	0.250	0.180	0.060
Construction	0.000	0.023	0.000	0.000	0.025	0.265	0.000	0.310	0.183	0.180	0.060
Distribution	0.000	0.023	0.000	0.000	0.025	0.238	0.420	0.685	0.183	0.243	0.060
Transport	0.208	0.114	0.550	0.042	0.292	0.665	0.174	0.416	0.375	0.430	0.227
Hotels & restaurants	0.000	0.023	0.000	0.000	0.025	0.250	0.000	0.248	0.348	0.180	0.060
Media	0.250	0.248	0.300	0.500	0.675	1.000	0.600	0.716	0.383	0.590	0.060
Communications	0.000	0.023	0.010	0.000	0.025	0.800	0.425	0.410	0.283	0.305	0.060
Financial services	0.000	0.024	0.042	0.000	0.025	0.610	0.273	0.143	0.533	0.263	0.093
Business services	0.125	0.023	0.000	0.000	0.025	0.138	0.500	0.560	0.308	0.305	0.385
FDI INDEX TOTAL	0.074	0.061	0.084	0.025	0.116	0.457	0.223	0.331	0.350	0.350	0.085

* Average calculated over all 49 countries included in the database.
** Average calculated over all non-OECD countries amongst the 49 countries included in the database.

Table I.4. Selected indicators of FDI and international production, 2015 and selected years　FDIは外国での事業展開で大規模な雇用創出をもたらす

Item	Value at current prices (Billions of dollars)				
	1990	2005–2007 (pre-crisis average)	2013	2014	2015
FDI inflows	207	1 418	1 427	1 277	1 762
FDI outflows	242	1 445	1 311	1 318	1 474
FDI inward stock	2 077	14 500	24 533	25 113	24 983
FDI outward stock	2 091	15 104	24 665	24 810	25 045
Income on inward FDI[b]	75	1 025	1 526	1 595	1 404
Rate of return on inward FDI[b]	*4.4*	*7.3*	*6.5*	*6.7*	*6.0*
Income on outward FDI[b]	122	1 101	1 447	1 509	1 351
Rate of return on outward FDI[b]	*5.9*	*7.5*	*6.1*	*6.3*	*5.6*
Cross-border M&As	98	729	263	432	721
Sales of foreign affiliates	5 101	20 355	31 865	34 149[c]	36 668[c]
Value added (product) of foreign affiliates	1 074	4 720	7 030	7 419[c]	7 903[c]
Total assets of foreign affiliates	4 595	40 924	95 671	101 254[c]	105 778[c]
Exports of foreign affiliates	1 444	4 976	7 469	7 688[d]	7 803[d]
Employment by foreign affiliates (thousands)	21 454	49 565	72 239	76 821[c]	79 505[c]
Memorandum					
GDP[e]	22 327	51 288	75 887	77 807	73 152
Gross fixed capital formation[e]	5 072	11 801	18 753	19 429	18 200
Royalties and licence fee receipts	29	172	298	311	299
Exports of goods and services[e]	4 107	15 034	23 158	23 441	20 861

Source: ©UNCTAD.

- International production continues to expand. Sales and value added of MNEs' foreign affiliates rose in 2015 by 7.4 per cent and 6.5 per cent, respectively. **Employment of foreign affiliates reached 79.5 million** (table I.4). However, the return on FDI of foreign affiliates in host economies worsened, falling from 6.7 per cent in 2014 to 6.0 per cent in 2015.
- The foreign operations of the top 100 MNEs retreated in the wake of falling commodity prices, although employment increased.
- Source: **UNCTAD (2016), WORLD INVESTMENT REPORT** Investor Nationality: Policy Challenges .

Thank you for listening