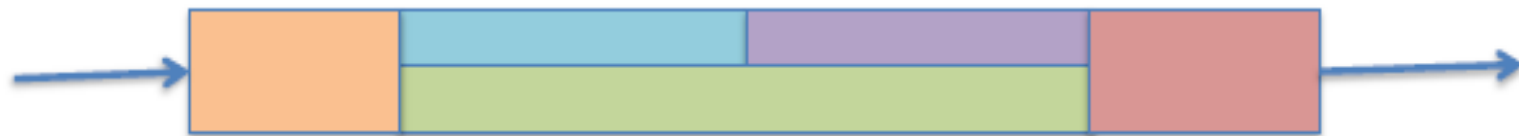
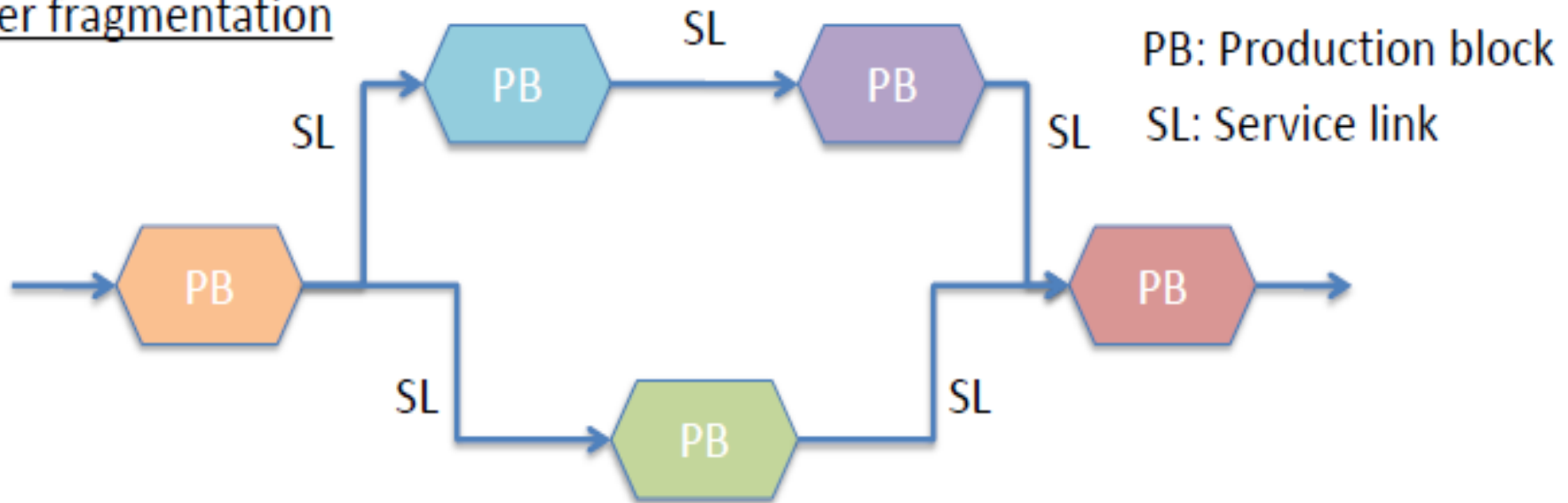


Before fragmentation



After fragmentation

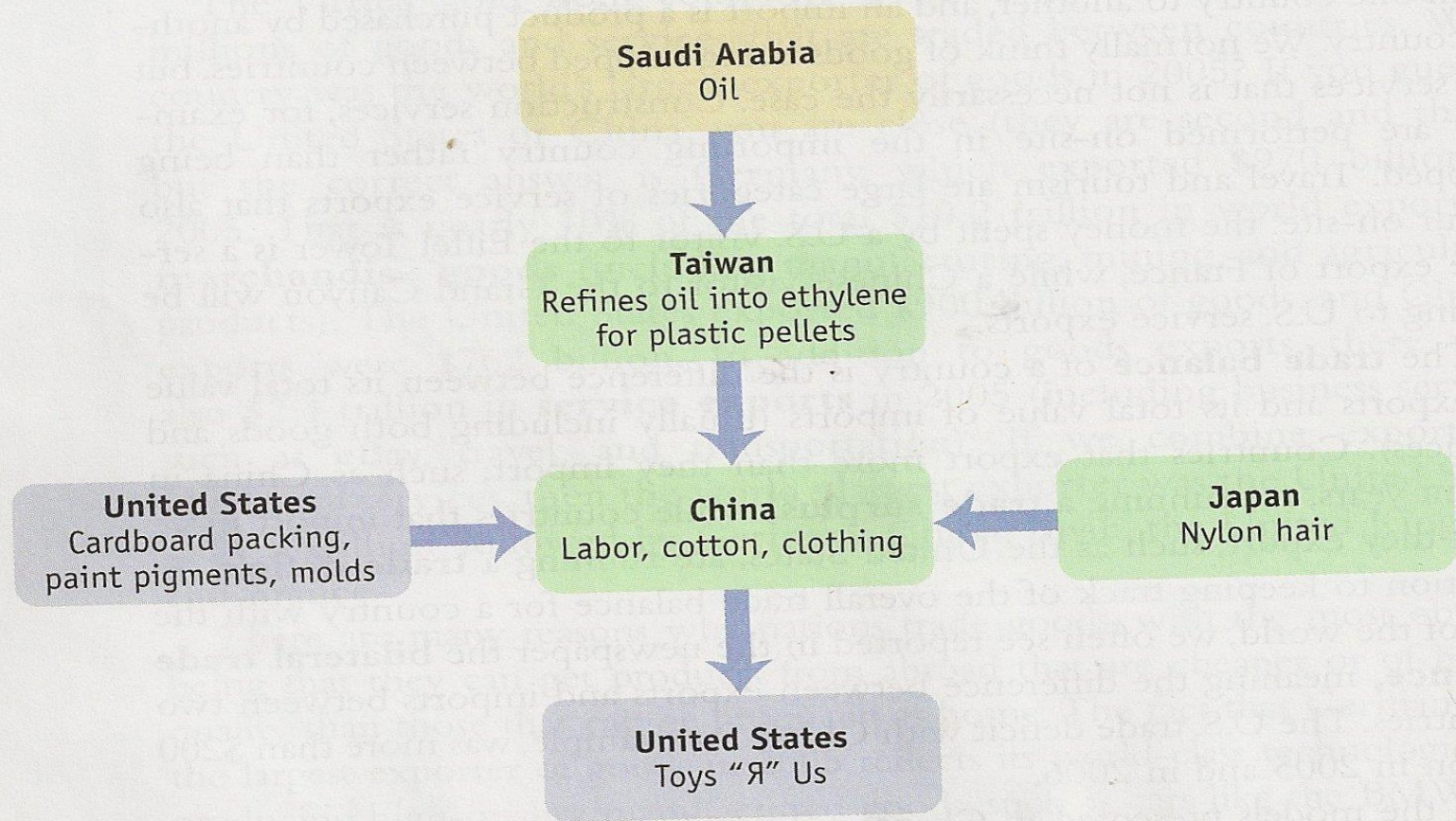




Cadeias de Valor Globais

- Direção Geral das Atividades Económicas da República Portuguesa:
“conjunto de atividades interligadas, divididas entre várias empresas, em diferentes locais geográficos, com vista à produção de mercadorias e serviços; assume um cariz internacional quando a sua expansão atinge um nível de diversidade global.”
-

FIGURE 1-1

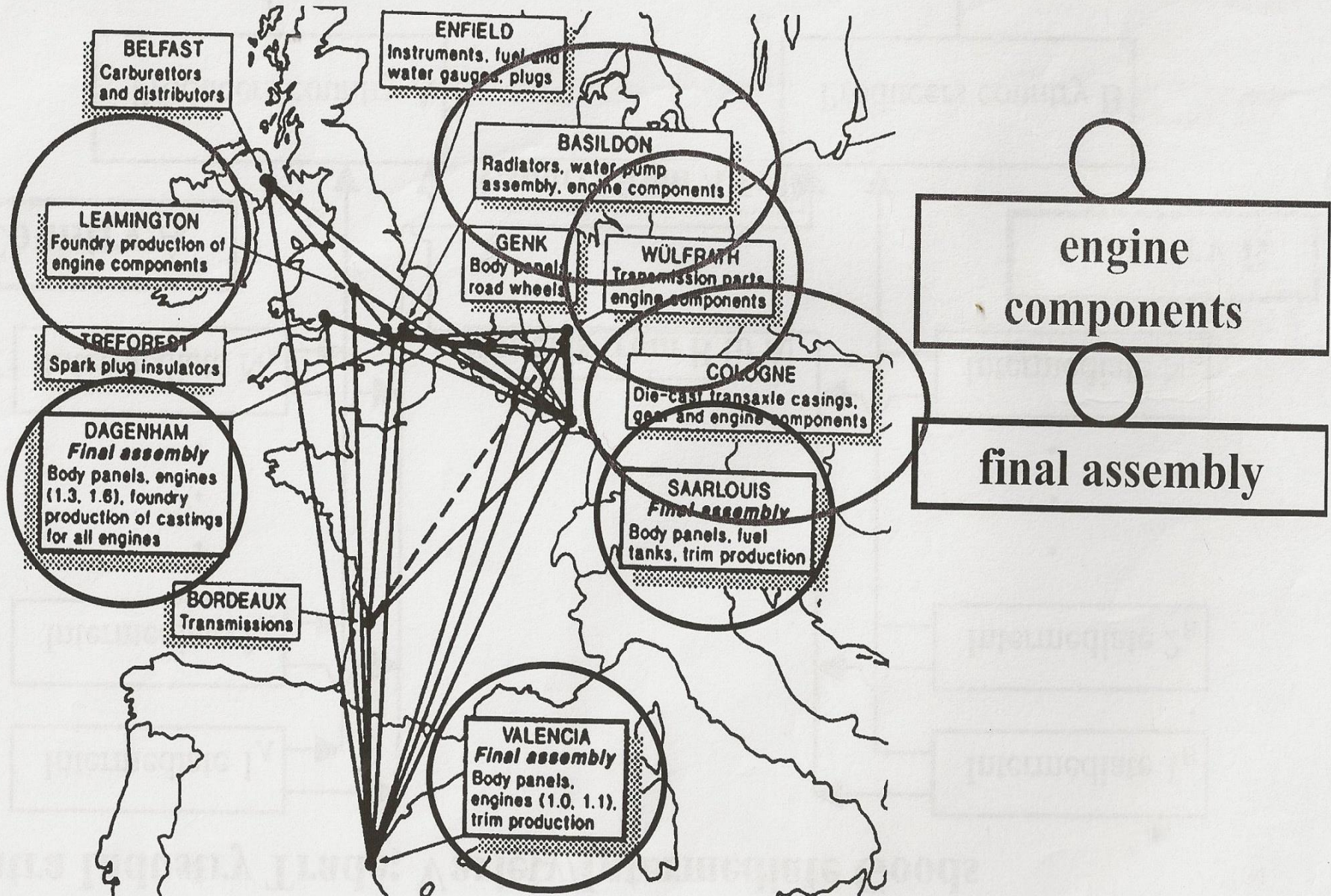


Barbie Doll Shown here are the products supplied by various countries for the manufacture of a Barbie doll sold in the United States. China provides labor, cotton, and clothing for the doll. Saudi Arabia supplies the oil that, after refining, produces ethylene.

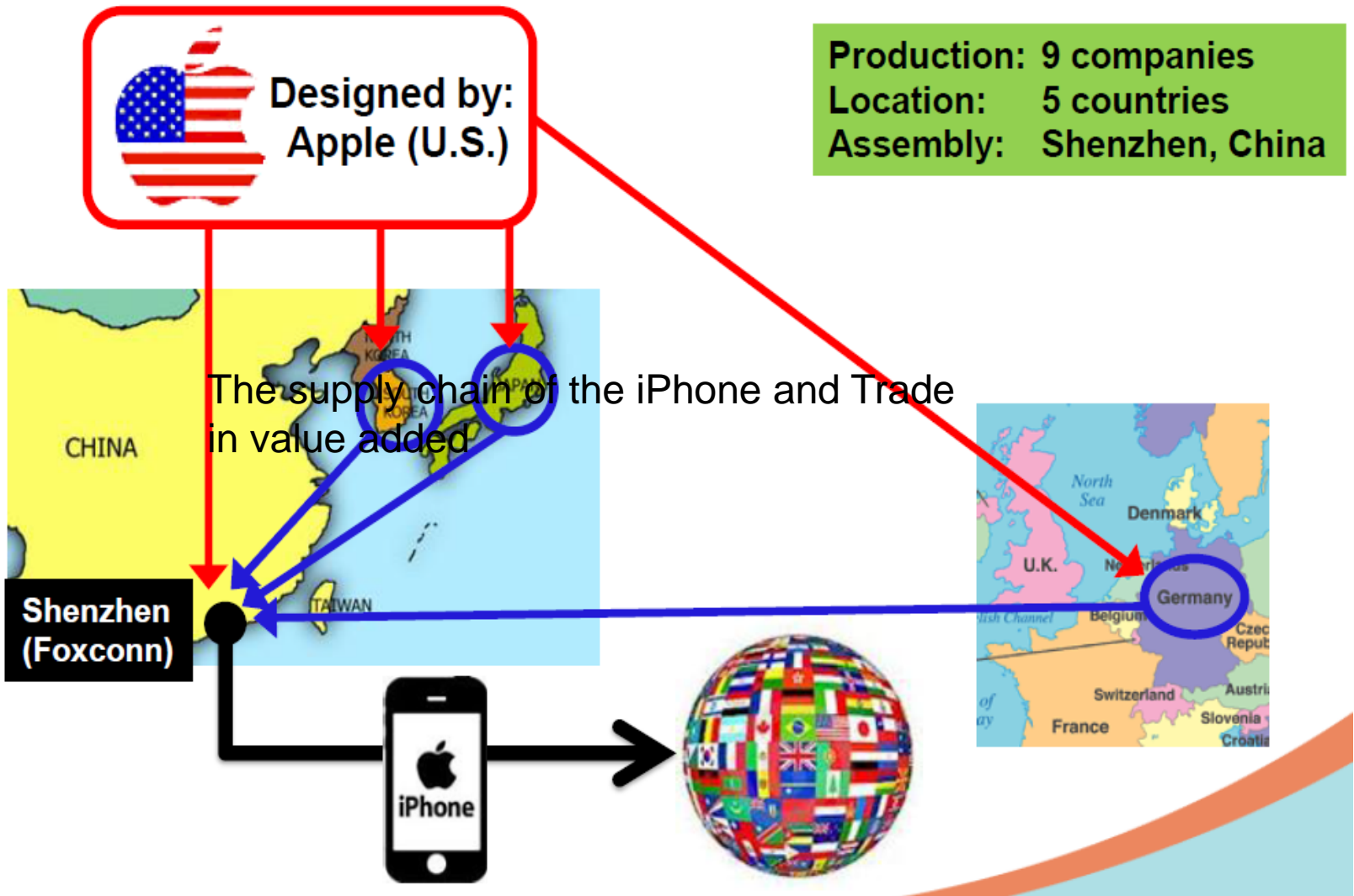
Taiwan uses the ethylene to produce vinyl plastic pellets that become Barbie's body, and Japan supplies her nylon hair. The United States provides paints and packaging materials for retailing.

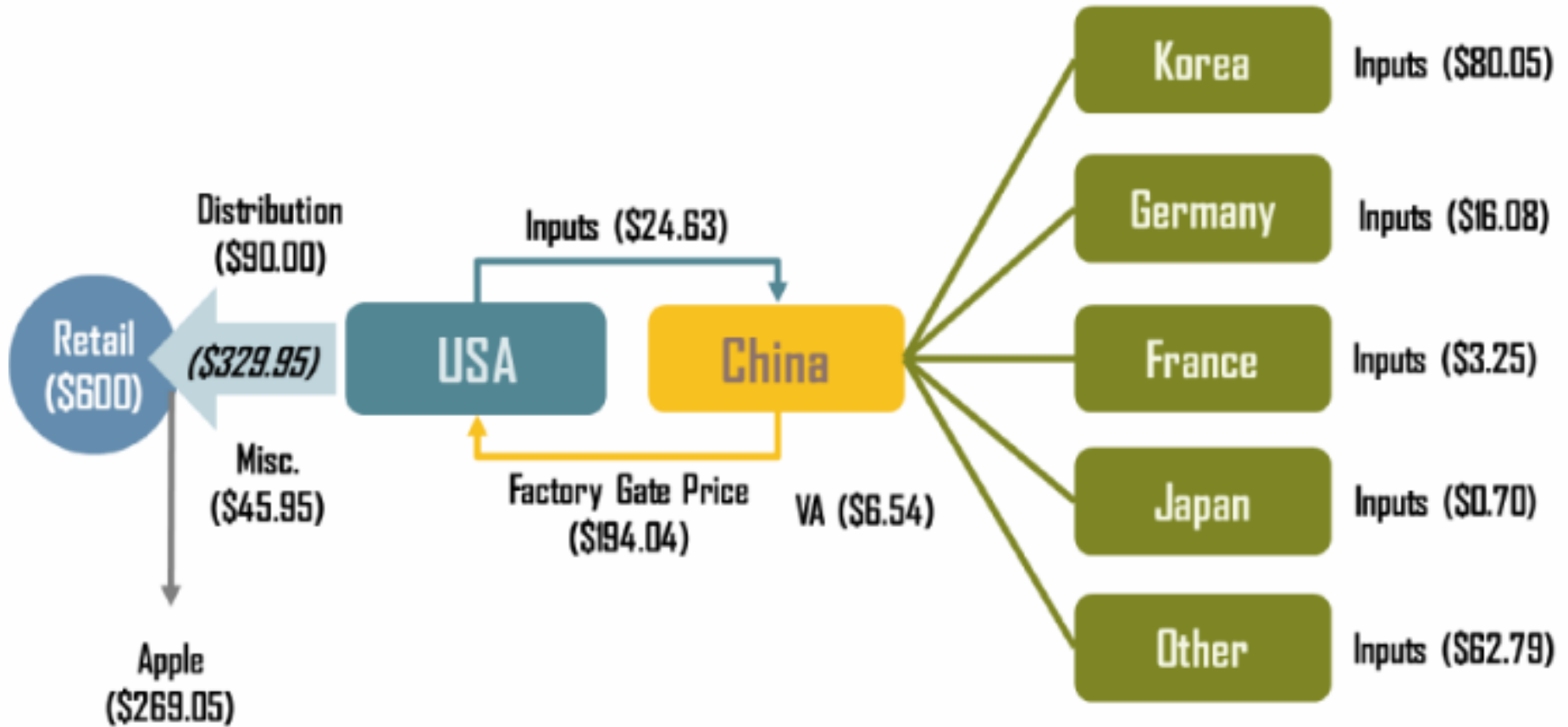
Intra Industry Trade; Variety/Intermediate Goods

Example: Ford Fiesta Network



The supply chain of the iPhone and Trade in value added





The Global Value Chain for Apple's iPhone 4

Vagas de globalização

- 1ª vaga-*outsourcing** de sectores + custos decrescentes de transacção dos bens
- 2ª vaga-*offshoring*** de tarefas + custos decrescentes de expansão das ideias

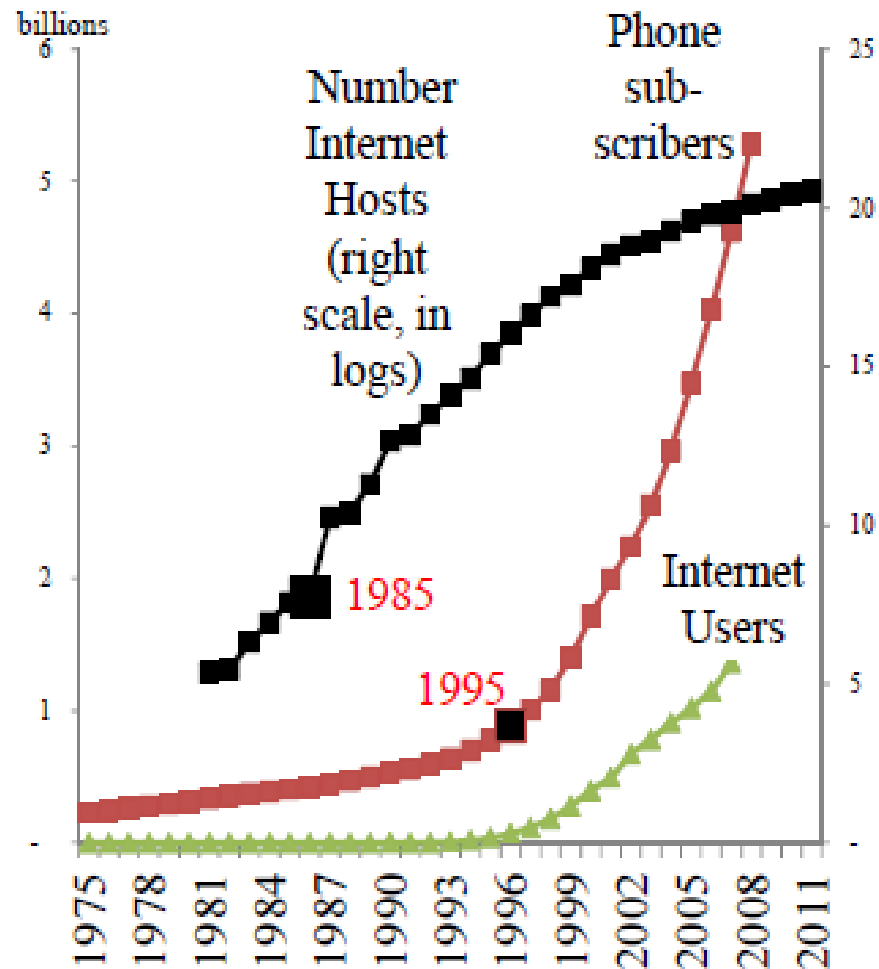
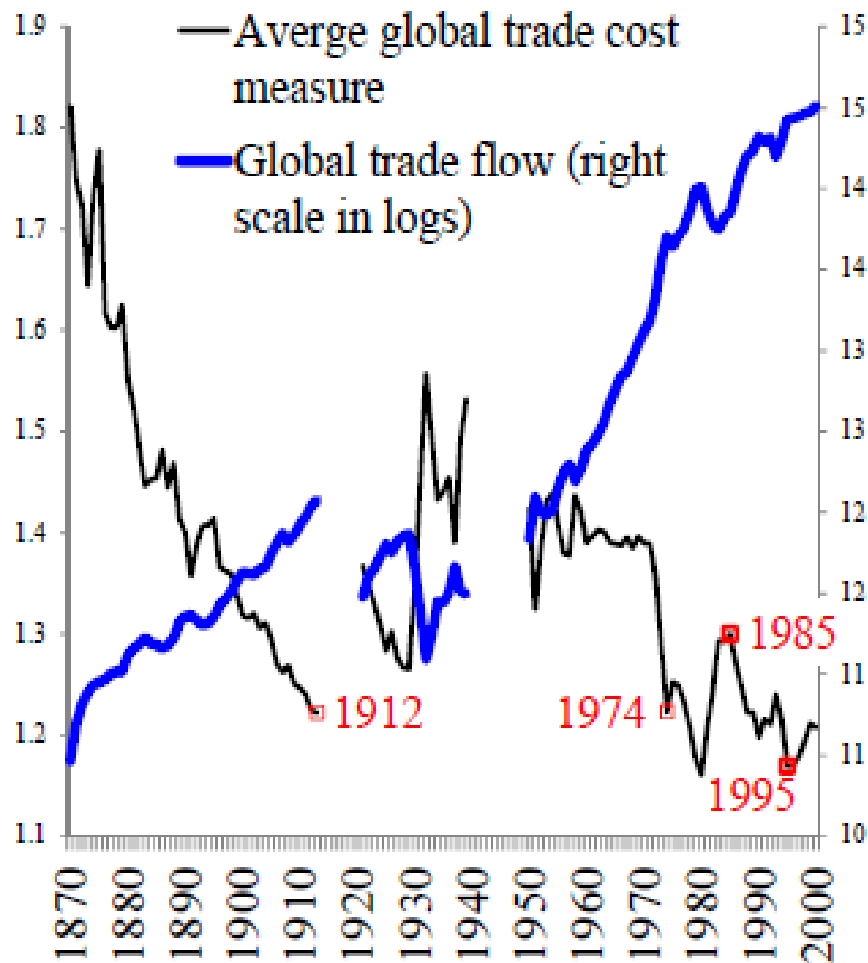
* across sectors

** *across nations*

1ª vaga de globalização

▶ 1850-1914

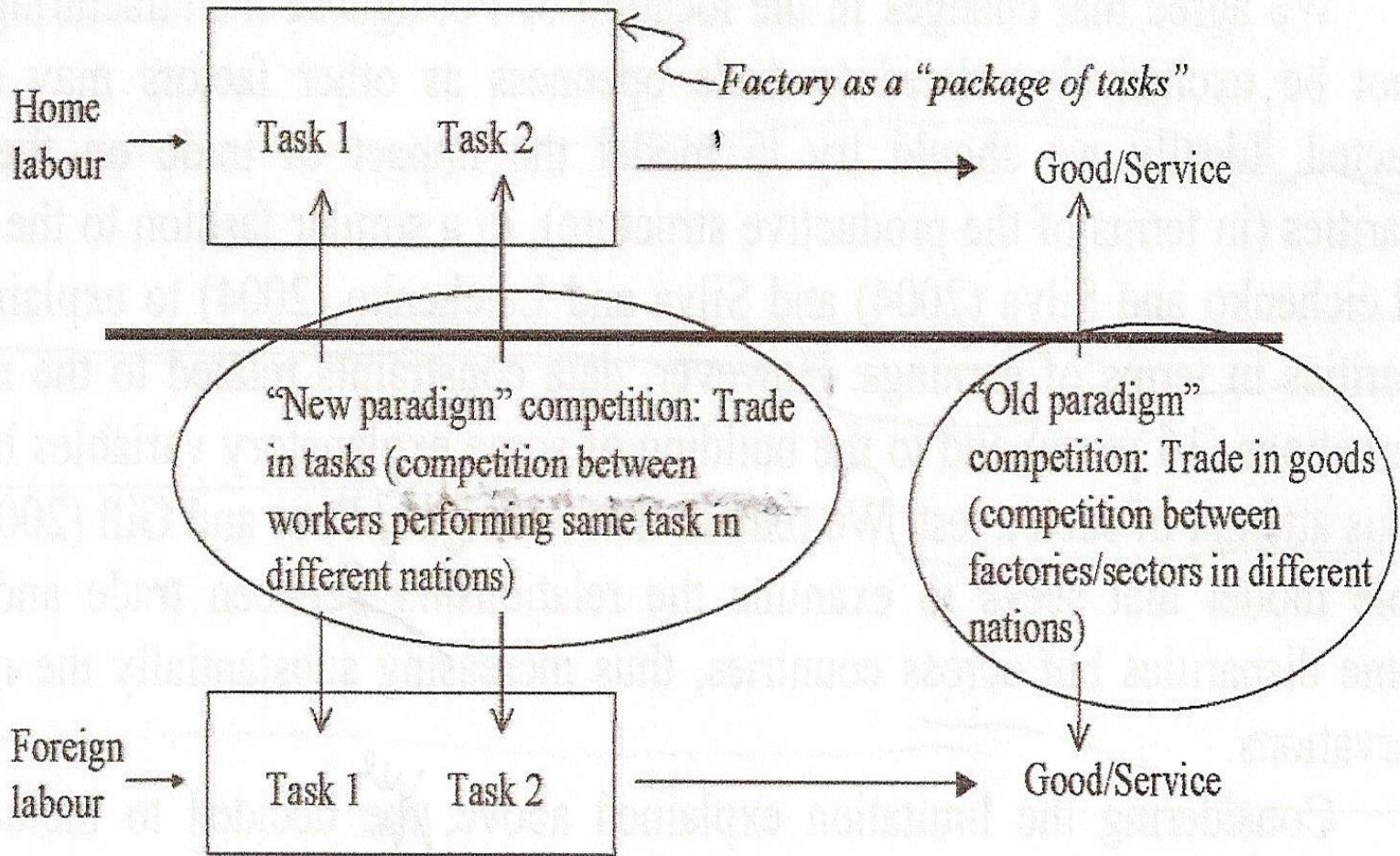
▶ 1960-...



Globalização: 2ª vaga

- Offshoring: The next industrial revolution? (Alan Blinder in Foreign Affairs, 2006)
 - Gene Grossman of Princeton University: **The need of a new paradigm** (2006)
-

Figure 6 The first and second unbundling schematically.

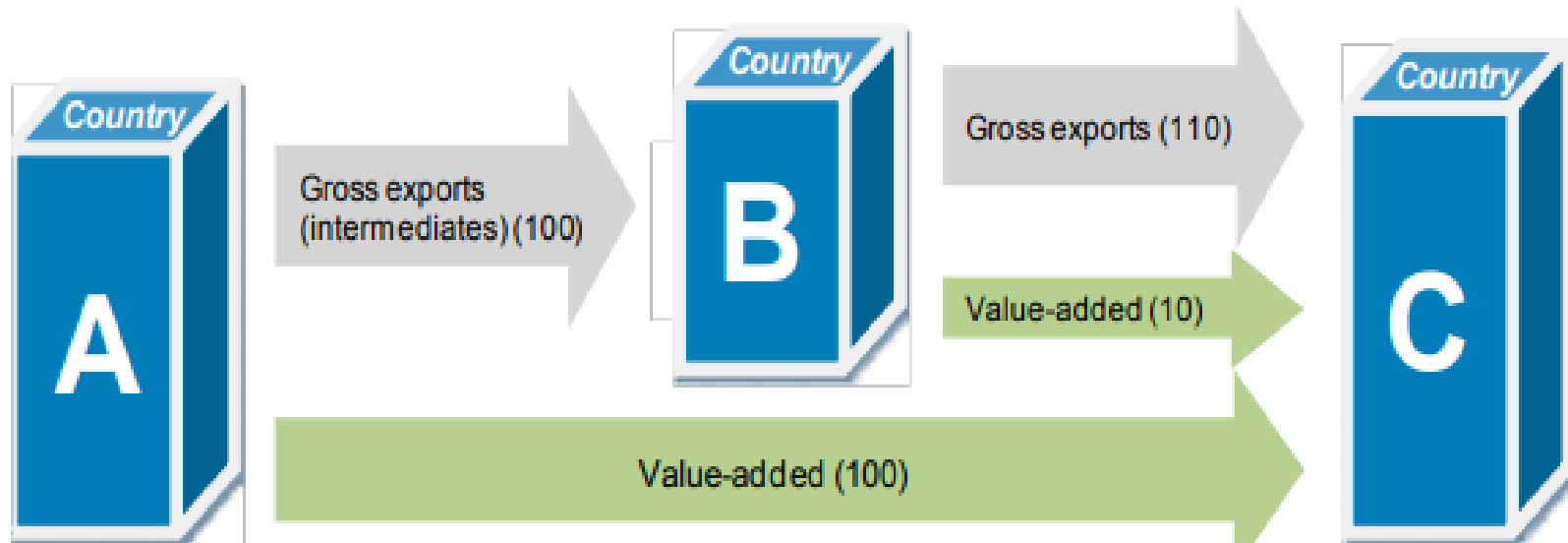




A importância das CVG

- **80% do comércio mundial** - UNCTAD 2013
- Comércio de bens intermediários atualmente representa mais de metade dos bens importados pelas economias que compõem a OCDE e cerca de 75% das importações dos maiores países em desenvolvimento como China e Brasil





OCDE & OMC (2013)

“Made in one country”
 “trade in goods”
 “value of trade”

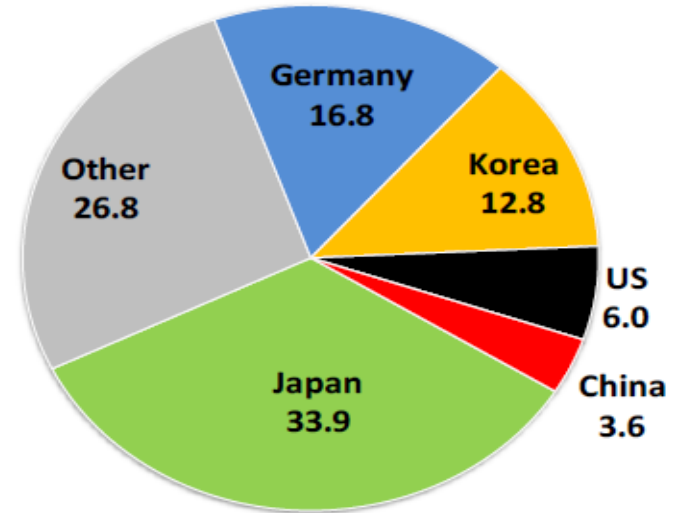


“Made in the world”
 “trade in tasks”
 “trade in value-added”

Table 1 . Apple iPhone 3G's Major Components and Cost Drivers

Manufacturer	Component	Cost (USD)
Toshiba (Japan)	Flash Memory	\$24.00
	Display Module	\$19.25
	Touch Screen	\$16.00
Samsung (Korea)	Application Processor	\$14.46
	SDRAM-Mobile DDR	\$8.50
Infineon (Germany)	Baseband	\$13.00
	Camera Module	\$9.55
	RF Transceiver	\$2.80
	GPS Receiver	\$2.25
	Power IC RF Function	\$1.25
Broadcom (USA)	Bluetooth/FM/WLAN	\$5.95
Numonyx (USA)	Memory MCP	\$3.65
Murata (Japan)	FEM	\$1.35
Dialog Semiconductor (Germany)	Power IC Application Processor Function	\$1.30
Cirrus Logic (USA)	Audio Codec	\$1.15
Rest of Bill of Materials		\$48.00
Total Bill of Materials		\$172.46
Manufacturing costs		\$6.50
Grand Total		\$178.96

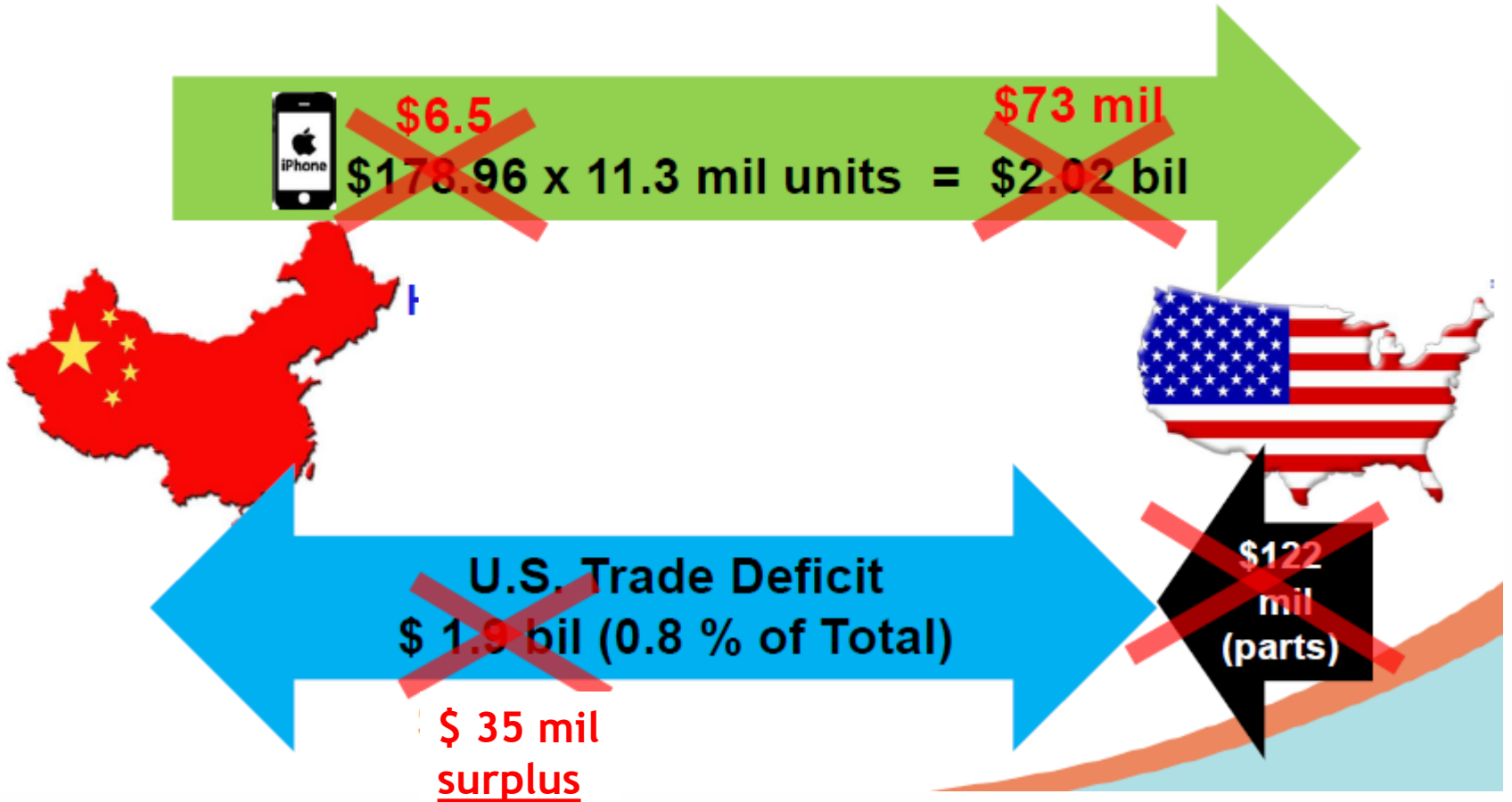
iPhone Manufacturing Cost Distribution by Country (%)



Source: Xing and Detert (2010)



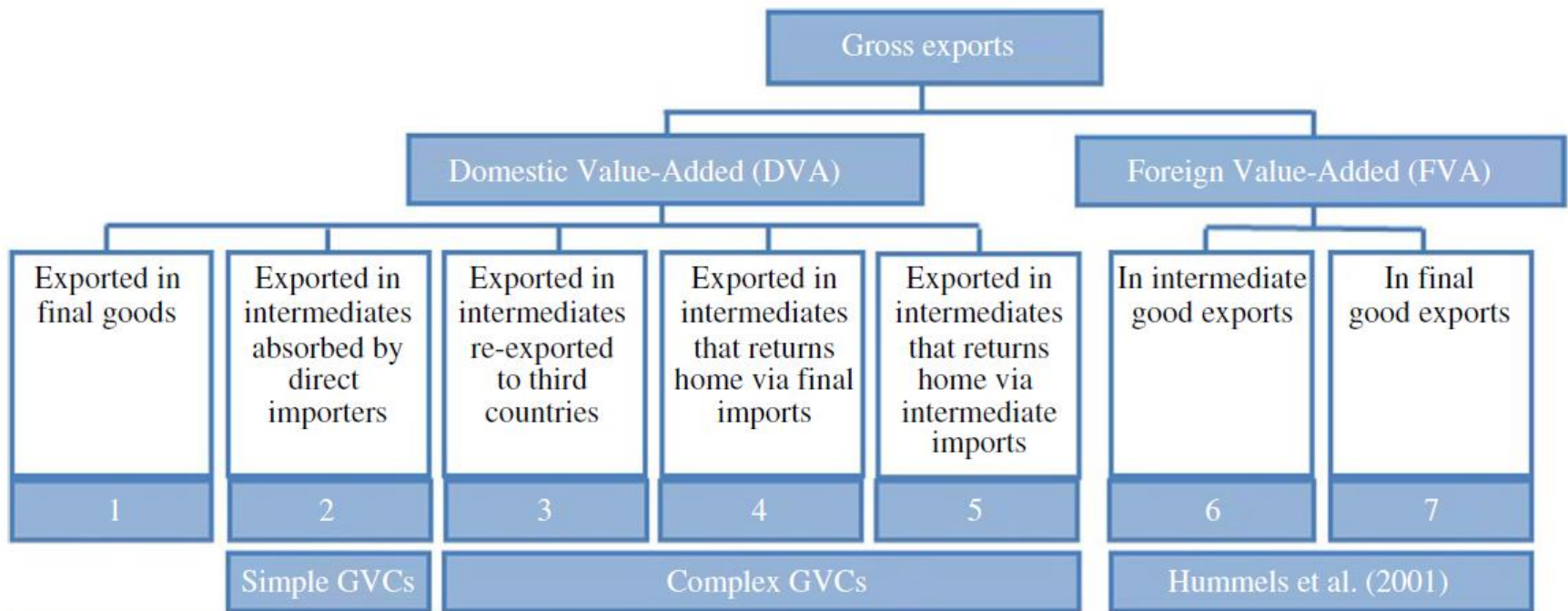
Chinese workers' contribution = \$6.5 (3.6% of Total Cost)



Current trade statistics greatly inflate China's exports and the Sino-US trade imbalance



Valor acrescentado comercializado



Fonte: Martínez-Galán e Fontoura (2018)

AS ESTATÍSTICAS PARA MEDIÇÃO DE CADEIAS DE VALOR GLOBAIS

Metodologia	+	-
Estatísticas de comércio internacional em partes e componentes	<ul style="list-style-type: none"> Muito fáceis de obter e elevada comparabilidade internacional 	<ul style="list-style-type: none"> Apenas cobre bens, não serviços Qualidade depende no grau de desagregação das estatísticas Classificação nem sempre coincide com o uso efetuado (BI e BF) Não permite leituras de <i>second-round effects</i>
Estatísticas das alfândegas para bens em processamento	<ul style="list-style-type: none"> Mostram <i>second-round effects</i> Segue de perto a origem inicial do produto 	<ul style="list-style-type: none"> Disponíveis em poucos países, logo comparabilidade internacional é quase nula
Dados ao nível das firmas	<ul style="list-style-type: none"> Elevado grau de detalhe 	<ul style="list-style-type: none"> Dificuldade de obtenção (confidencialidade) Comparabilidade muito limitada

(recente) <u>Matrizes input-output ligadas com dados de comércio internacional</u>	<ul style="list-style-type: none"> Categoriza bens e serviços por uso efetivo, e não pela categoria Aplicações práticas muito amplas 	<ul style="list-style-type: none"> Apenas espaçadas no tempo (95, 00, 05, 09) Não mostram <i>second round effects</i>
--	--	---

Project	Institution	Data sources	Countries	Sectors	Years	Comments
World Input-Output Database (WIOD)	Consortium of 11 institutions led by Groningen University, EU funded	National Supply-Use tables	40	35	1995 to 2011	Based on official National Accounts statistics; uses end-use classification to allocate flows across partner countries; includes data on socioeconomic and environmental issues
Inter-Country-IO model	OECD-WTO, under the Made in the World Initiative (MIWI)	National IO tables	56	18	1995, 2000, 2005, 2008, and 2009	Based on national I-O tables harmonized by the OECD
Asian International IO tables	IDE-JETRO	National accounts and firm surveys	10	76	1975, 1980, 1985, 1990, 1995, 2000, 2005	US-Asia tables and also bilateral tables, including PRC-Japan
Global Trade Analysis Project	Purdue University	Contributions from individual researchers and organizations	129	57	2004, 2007	Unofficial dataset; includes data on areas such as energy volumes, land use, carbon dioxide emissions and international migration
Eora multi-region IO Database	Several Australian researchers, under funding by the Australian Research Council	National supply-use and IO data; plus data from Eurostat and United Nations	187	25-500, depending on the country	1990 to 2012	Still under improvement

Source: Authors.

The basic structure of an input-output table: a simple example of a domestic transactions input-output table

<i>Suppliers</i> \ <i>Users</i>											<i>Industry Output at basic prices</i>
	Agriculture	Mining	Manufactures	Utilities	Construction	Services	Private final consumption	Government final consumption	GFCF	Exports	
Agriculture	2731	3	8260	36	59	615	962	62	567	8568	21863
Mining	4	282	2013	3979	188	60	28	0	210	5528	12292
Manufactures	3322	291	40218	480	8004	16999	16896	2340	8573	113777	210900
Utilities	983	53	2400	4395	85	3458	6184	14	439	238	18249
Construction	121	70	565	135	14103	9509	405	530	33974	832	60244
Services	2884	1078	28400	1404	9339	106994	126180	87409	16752	55512	435953
Imports	1779	1029	71117	1878	7572	33964	24189	1085	17771	81863	
Net taxes on products	129	67	497	706	249	8651	22908	-152	10233	0	
TOTAL use at purchaser's prices	11953	2873	153470	13013	39599	180250	197752	91288	88519	266318	
Value Added at basic prices	9910	9419	57430	5236	20645	255703					
Industry Output at basic prices	21863	12292	210900	18249	60244	435953					

Source: WIXTER et al (2006).

– Tabelas de Input-Output:

		País 1			País 2			...	País 1		País 2		...	
		Setor 1	Setor 2	...	Setor 1	Setor 2	...		Consumo final	Consumo final			Uso da produção	
País 1	Setor 1	Utilização de <i>inputs</i> domésticos (matriz <i>input-output</i> clássica para um país)							Utilização final de <i>inputs</i> domésticos	Utilização final de exportações do país 1 (importações do país 2)			Soma das linhas	
	Setor 2	Utilização de <i>inputs</i> externos							Utilização final de exportações do país 2 (importações do país 1)	Utilização final de <i>inputs</i> domésticos				
				
País 2	Setor 1	Utilização de <i>inputs</i> externos							Utilização final de <i>inputs</i> domésticos	Utilização final de exportações do país 2 (importações do país 1)			Soma das linhas	
	Setor 2	Utilização de <i>inputs</i> domésticos (matriz <i>input-output</i> clássica para um país)							Utilização final de <i>inputs</i> domésticos	Utilização final de exportações do país 1 (importações do país 2)				
				
...				
Valor acrescentado		Utilização dos <i>inputs</i> primários			Utilização dos <i>inputs</i> primários				Utilização final de <i>inputs</i> primários	Utilização final de <i>inputs</i> primários				
Produção bruta		Soma das colunas			Soma das colunas									

Fonte: Banco de Portugal

The basic structure of an internationally linked input-output table (for three regions)

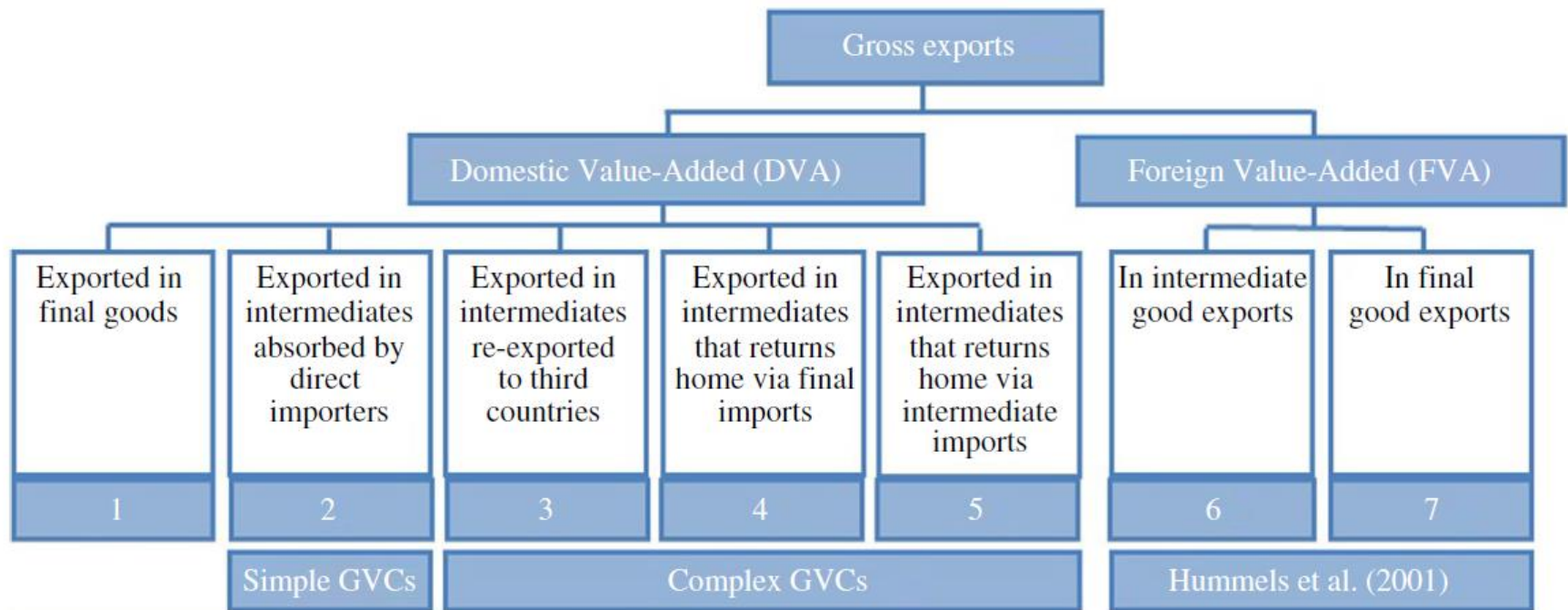
		Country A						Country B						Rest of World						Country A						Country B						Rest of World						Imports	Exports	Industry Output at basic prices
		Agriculture	Mining	Manufactures	Utilities	Construction	Services	Agriculture	Mining	Manufactures	Utilities	Construction	Services	Agriculture	Mining	Manufactures	Utilities	Construction	Services	Private final consumption	Government final consumption	GDP	Private final consumption	Government final consumption	GDP	Private final consumption	Government final consumption	GDP												
Country A	Agriculture	2731	3	8260	36	59	613	485	1114	771	857	857	942	86	314	428	257	428	343	962	62	54	343	257	171	86	257	171	6568	21863										
	Mining	4	282	2013	1979	188	60	442	719	498	359	359	688	35	332	276	186	276	221	28	0	210	221	186	111	35	186	111	978	12292										
	Manufactures	3322	291	40218	480	8004	16999	9102	14791	10240	11378	11378	12515	1138	6827	5689	3413	5689	4551	16896	2340	8573	4551	3413	2276	1138	3413	2276	111777	210900										
	Utilities	983	53	2400	4395	85	3458	19	31	21	24	24	26	2	14	12	7	12	10	6184	14	439	10	7	5	2	7	5	388	18249										
	Construction	121	70	565	135	14103	9509	67	108	75	83	83	92	8	50	42	25	42	33	405	530	33974	33	25	17	8	25	17	882	60244										
	Services	2884	1078	28400	1404	9339	108994	4441	7217	4996	5551	5551	6106	555	3331	2776	1665	2776	2220	126180	87409	16752	2220	1665	1110	555	1665	1110	58342	435953										
Country B	Agriculture	36	21	1422	38	151	679	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Mining	160	93	6401	169	681	3057	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Manufactures	89	51	3556	94	379	1698	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Utilities	107	62	4267	113	454	2038	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Construction	53	31	2134	56	227	1015	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Services	498	288	19913	526	2120	9510	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rest of World	Mining	249	144	9956	263	1060	4753	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Manufactures	18	10	711	19	76	340	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Utilities	125	72	4978	131	530	2377	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Construction	83	509	150	606	2712	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Services	1779	1029	71117	1878	7672	38964	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Imports	129	67	497	706	249	8651	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Net taxes on products		11953	2873	153470	13013	39599	180250																																	
TOTAL use at purchaser's prices																																								
Value Added																																								

User's approach ou Upstream approach

Supplier's approach ou Downstream approach

Source: Author, based on TIMMER *et al* (2012).

Valor acrescentado comercializado



Fonte: Martínez-Galán e Fontoura (2018)

Country	Gross exports (US\$ billion) (A)	Domestic value-added exported (US\$ billion) (B)	Foreign value-added imported (US\$ billion) (C)	GVC participation (%) (B+C)/(A), %	GVC position (%) (B-C)/(A), %
Indonesia	213.0	184.8	147.6	156.1	17.5
Taiwan	338.2	298.2	225.2	154.8	21.6
Finland	106.8	89.8	72.6	152.1	16.1
PRC	2,008.9	1,515.3	1,476.6	148.9	1.9
Brazil	292.5	236.3	198.7	148.7	12.9
Czech Rep.	162.8	128.8	112.0	147.9	10.3
Luxembourg	96.3	76.2	63.1	144.7	13.6
Japan	930.7	743.3	596.2	143.9	15.8
Australia	324.1	289.3	173.7	142.9	35.7
South Korea	678.0	519.5	443.1	142.0	11.3
Mexico	365.6	283.1	226.8	139.5	15.4
Poland	225.3	157.8	155.2	138.9	1.2
USA	2,127.0	1,503.3	1,450.6	138.9	2.5
Italy	616.9	419.6	423.4	136.7	-0.6
Hungary	122.3	87.1	78.0	135.0	7.4
Canada	546.6	427.9	289.9	131.3	25.2
Sweden	261.9	201.7	142.2	131.3	22.7
Austria	229.3	171.5	128.1	130.7	18.9
Spain	431.3	266.4	282.1	127.2	-3.6
Germany	1,685.0	1,248.6	813.0	122.4	25.9
Belgium	429.0	275.0	249.4	122.2	6.0
UK	796.5	542.6	416.9	120.5	15.8
Ireland	231.6	147.4	131.4	120.4	6.9
Romania	67.9	39.3	42.4	120.3	-4.6
Turkey	183.7	105.3	113.2	118.9	-4.3
France	823.2	501.5	460.1	116.8	5.0
Denmark	177.7	112.1	94.0	116.0	10.2
Greece	67.6	30.7	47.1	115.1	-24.3
India	446.4	209.8	269.7	107.4	-13.4
Slovakia	83.3	46.9	40.9	105.4	7.2
Bulgaria	34.0	17.5	17.9	104.1	-1.2
Netherlands	691.7	384.1	324.6	102.5	8.6
Russia	573.4	448.2	138.4	102.3	54.0
Portugal	85.7	39.7	45.5	99.4	-6.8
Slovenia	36.1	18.5	15.6	94.5	8.0

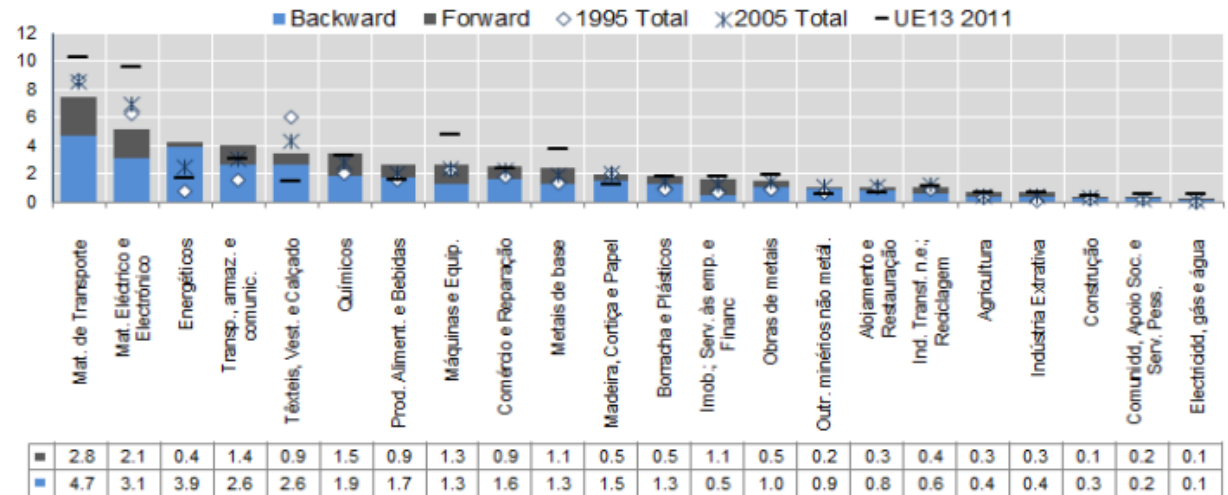
- ***Quais as CVGs mais significativas por setor?***

“Coque, produtos petrolíferos refinados e combustível nuclear” (57%) – específico, matéria prima.

“Equipamento elétrico e ótico” (46%)- RPC cerca de um quarto, mera *assemblage*

Participação portuguesa nas CVGs, por sector exportador, 2011

% do total das Exportações Portuguesas



Fonte: GEE, com base nos dados da OCDE - Trade in Value Added (TIVA), October 2015

Nota: O valor da UE13 corresponde às exportações do bloco de países do alargamento para o resto do Mundo, excluindo as trocas entre si.

Comunicações

Transportes

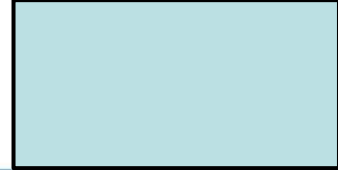
Energéticos

Materiais Eléctricos e Electrónicos

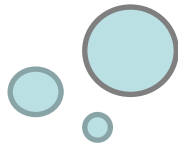
Materiais de Transportes

Têxteis, Vestuário e Calçado

GRAPH VISUALISATION



NODES OR VERTICES



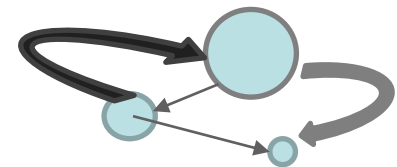
Weighted according to a country's TTVA.
Higher diameters, higher TTVA values

EDGES OR LINKS



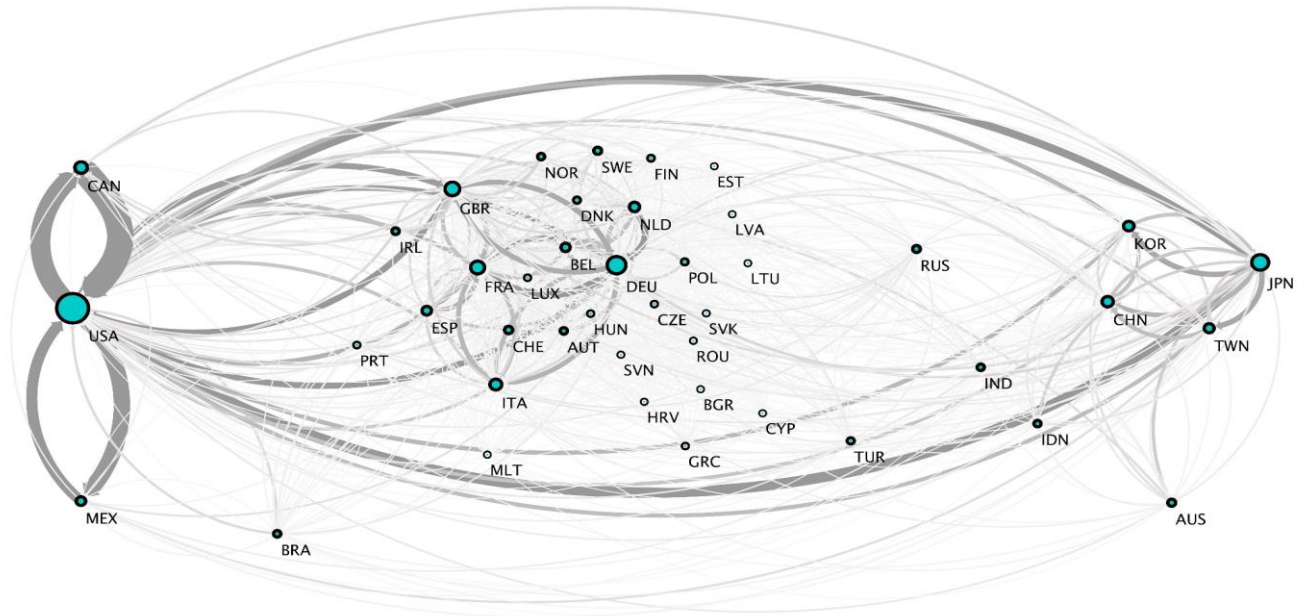
Weighted according to the size of bilateral relationships.

NETWORK

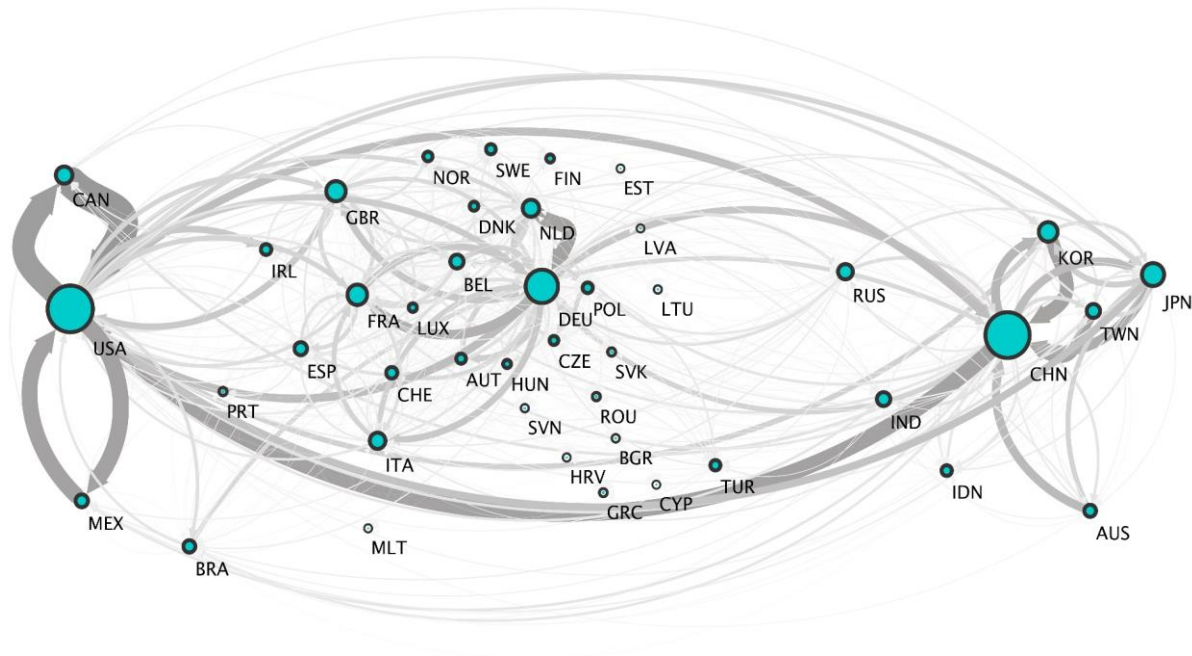


Directed: indegree (user country) and outdegree (supplier country)

WORLD'S SUPPLIERS AND USERS NETWORK, 2000

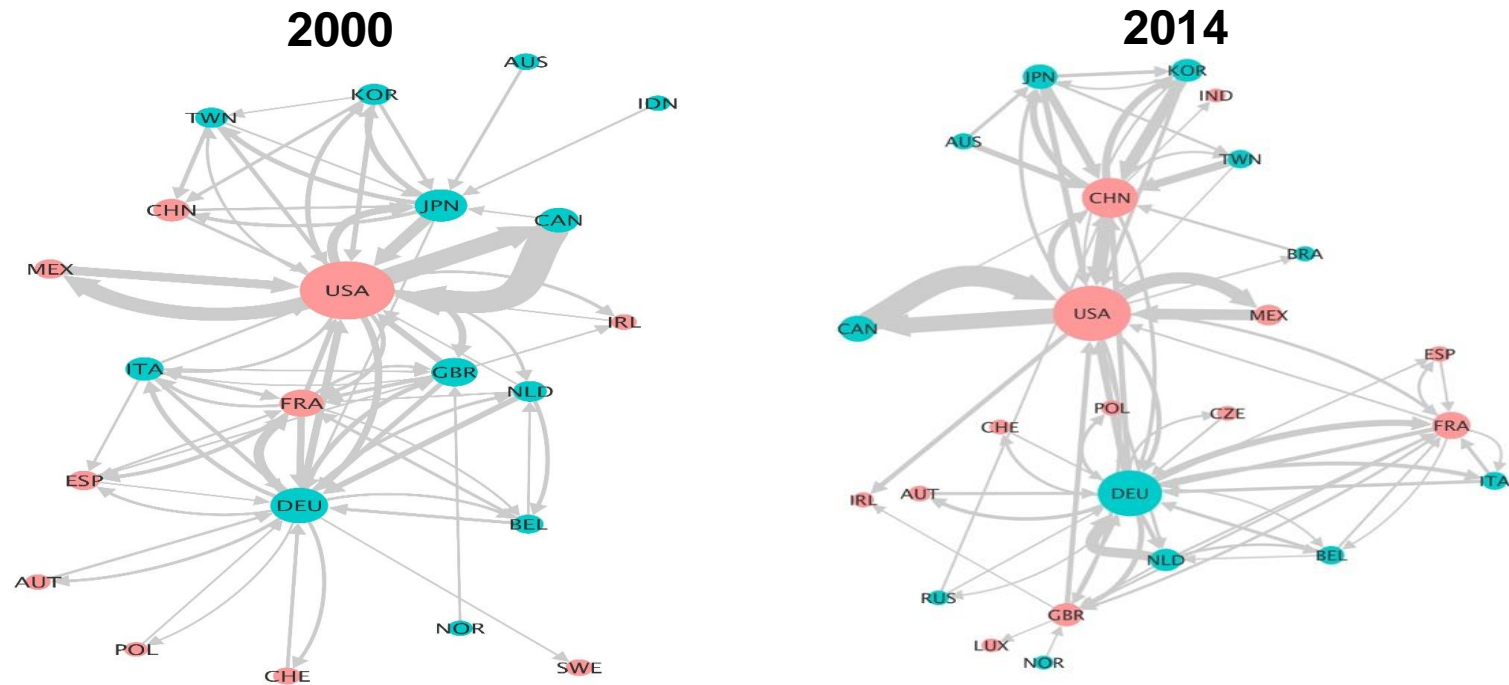


WORLD'S SUPPLIERS AND USERS NETWORK, 2014

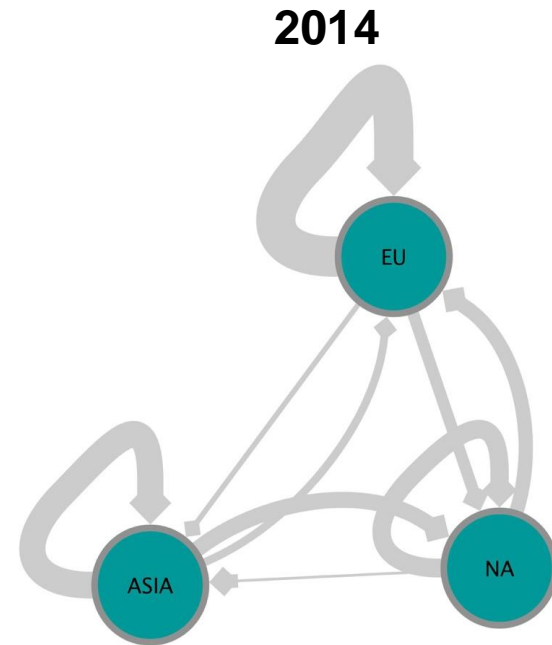
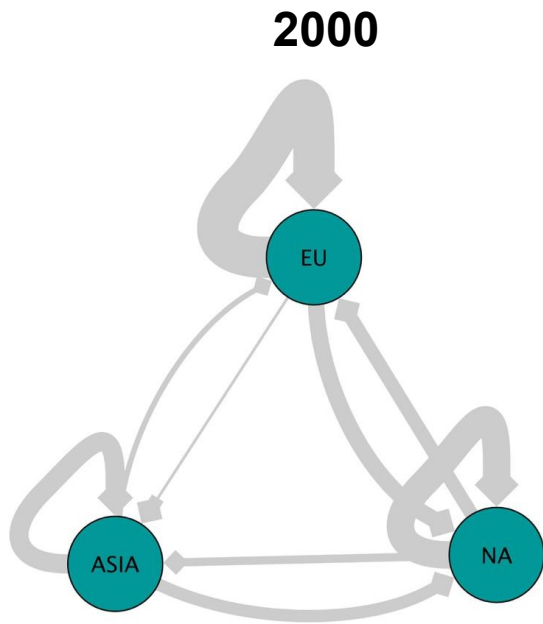


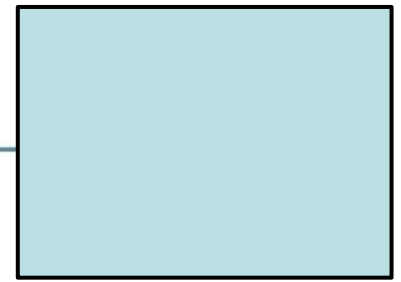
NETWORKS CUT BY 10% HIGHEST FLOWS

Pink nodes – net importers of value added
Blue nodes – net exporters of value added



REGIONAL NETWORKS





-
- From 2000 to 2014, the world's trade in value added has more than trebled and its geographical spread has become less unequal, with more countries and bilateral flows relevant for the GVCs.
 - Patterns in the global production networks show a strong regional dimension and geographic borders play an important role.
 - Without Germany, Factory Europe loses its pumping engine; the same for Asia without China and, in 2014, for the whole world, without the US.
 - Emerging countries have intensified their positioning in the world trade network from 2000 to 2014, driven by upping the intensity of previous relationships with the key hubs.