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EU Competitiveness in Global Value Chains

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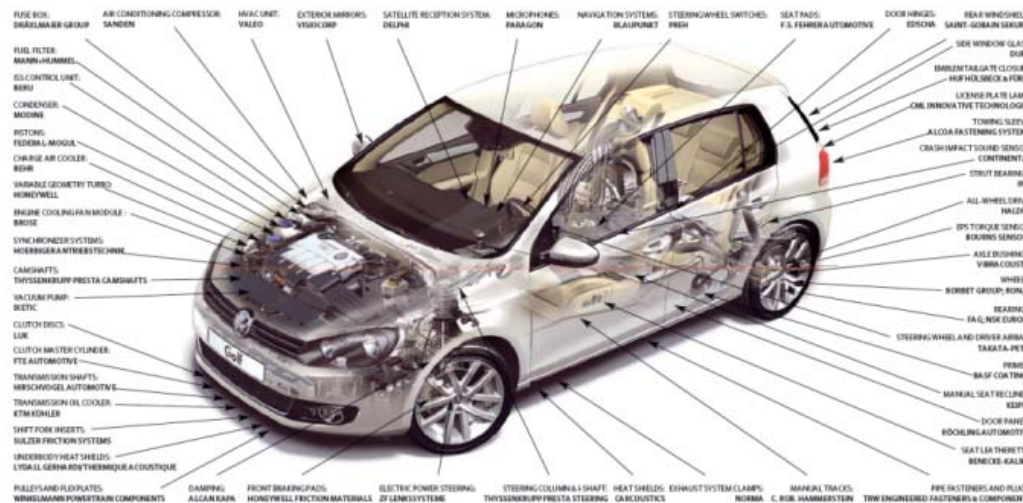
BBVA, Madrid, May 24, 2016



How to measure competitiveness? The OLD view vs the NEW view

- Traditionally, increasing exports (to GDP) and revealed comparative advantage in *products* reveals competitive strength
- This is useful in a world where all stages of production are in one place. But in world of international production fragmentation:

it is no longer about what you sell, but what you do





Global consumption value of cars



GVC income = the income that is earned in Spain through participation in the production of cars.



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- NOTE: this can be by producing cars or by delivering inputs that are used in car production elsewhere
- NOTE: this includes activities in manufacturing and non-manufacturing sectors (e.g. services inputs)
- (for more info, see Timmer et al. 2013, *Economic Policy*)

GVC income increases when

1. A country increased the value added share in a particular product chain (“upgrading”)
2. Global demand increased for those final products in which the country has an above average value added share

An accounting framework

FROM: World input-output table

			Use by country-industries						Final use by countries			Total use	
			Country 1			...	Country M			Country 1	...		Country M
			Industry 1	...	Industry N	...	Industry 1	...	Industry N				
Supply from country-industries	Country 1	Industry 1											
		...											
		Industry N											
											
	Country M	Industry 1											
		...											
Industry N													
Value added by labour and capital													
Gross output													

Input cost shares of industries (A)

F

v

$$G = v(I-A)^{-1}F$$

Leontief's trick: compute value added in all industries associated to final demand for a specific product

TO: GVC cost-share table

			Final products of a global value chain, identified by country-industry of completion						Value added	
			Country 1			...	Country M			
			Industry 1	...	Industry N	...	Industry 1	...		Industry N
Value added from country-industries participating in global value chains	Country 1	Industry 1								
		...								
		Industry N								
								
	Country M	Industry 1								
		...								
Industry N										
Total final output value									World GDP	

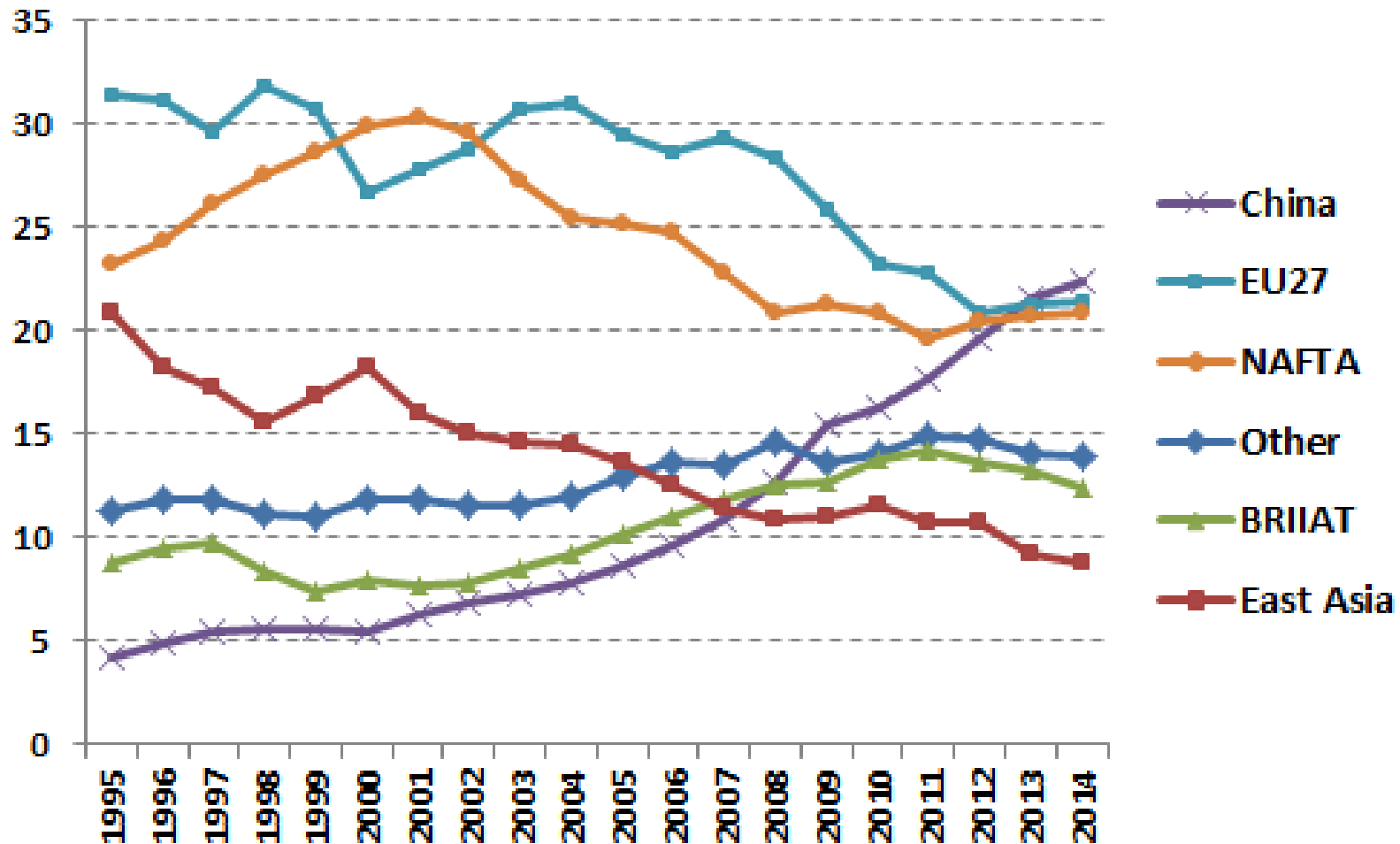
Factor cost shares of final products (G)



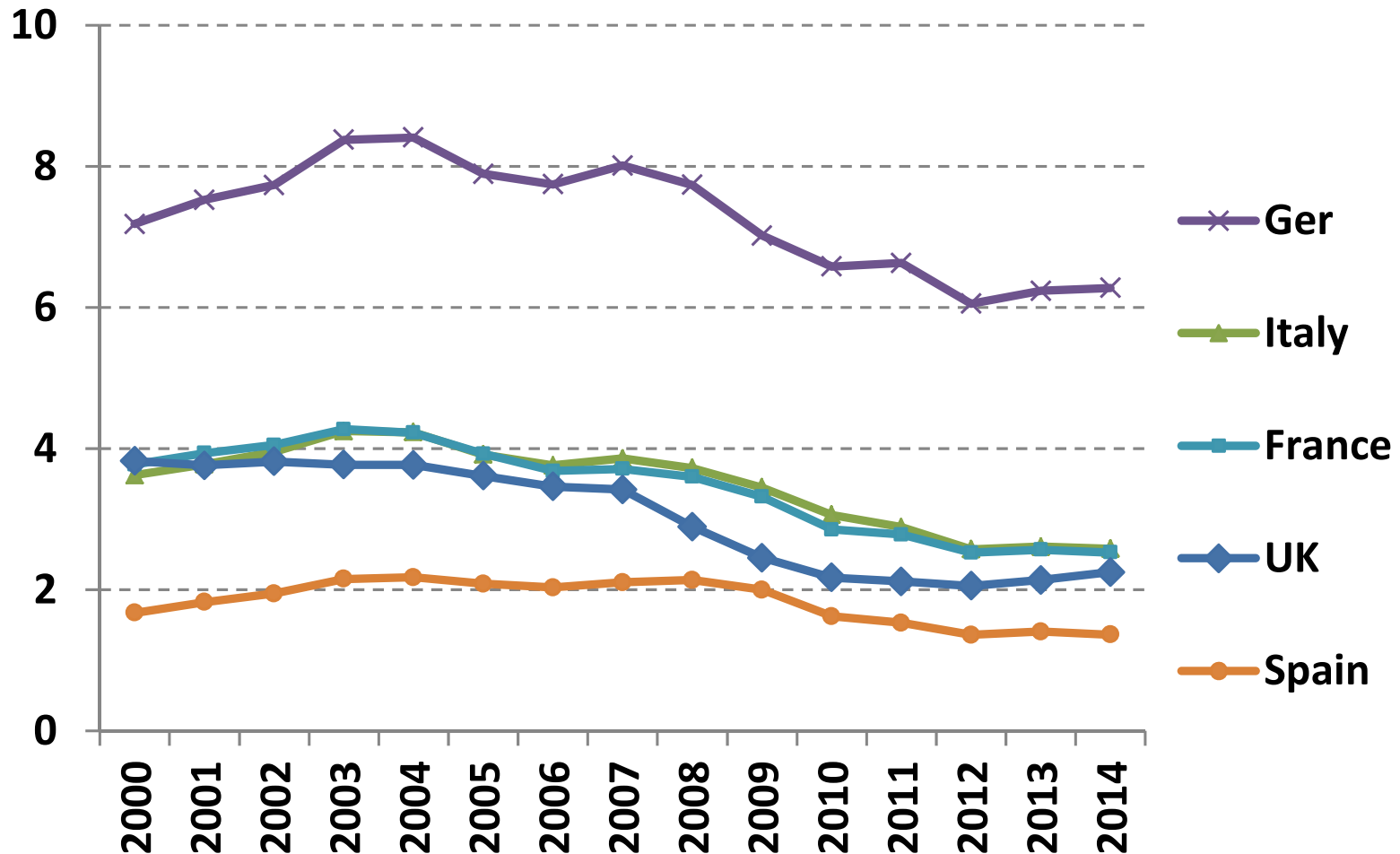
- The World Input-Output Database (www.wiod.org):
 - Annual Tables 1995-2011 including values of all flows of products across industries and countries
 - 40 countries (EU27 + 13 major economies) + Rest of the world
 - 35 industries per country
 - At basic prices, exchange rate converted into US\$
 - (Preliminary update to 2014)
- Based on benchmark national supply- and use-tables (**A**), combined with time-series on **v** and **F** from National accounts statistics, and bilateral trade data from official statistical sources (by use category).



Regional shares in world GVC income (all manufacturing goods)



Source: Timmer, M. P., B. Los, R. Stehrer, G. J. de Vries (2013) "Fragmentation, Incomes, and Jobs: An Analysis of European Competitiveness", *Economic Policy*, vol. 28(76) 613-661. Updated through 2014.



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What activities do workers carry out in GVCs of manufacturing goods?

Indicator: distribution of labour income in GVCs by occupation of the workers

1. Pre-production	e.g. Basic R&D, Design, Commercialization
Production 2. Prod (low)	e.g. Craft and related trades workers, Plant and machine operators and assemblers,
3. Prod (high)	E.g. Technicians and associate professionals
Post-production 4. Post (low)	E.g. Clerks
5. Post (high)	E.g. Legislators, marketers, managers



- *Revealed Comparative Advantage* (RCA) defined as: share of function x in GVC income relative to same share for EU 27
- RCA bigger than 1 reveals that a country has a comparative advantage in that activity
- (NB due to data constraints a country is compared to EU 27 as a whole, not to the world! And for 2011)



Revealed Comparative Advantage in activities in GVCs of manufacturing goods, in 2011 (EU = 1)

	Pre-prod	Prod		Post-prod	
		Low	High	Low	High
FIN	1.31	0.95	0.90	0.42	1.23
FRA	1.27	0.88	1.04	0.77	1.11
BEL	1.18	0.86	0.94	1.30	1.04
NLD	1.17	0.91	0.88	1.02	1.13
DEU	1.17	0.98	1.08	1.23	0.68
SWE	1.14	1.07	1.20	0.77	0.65
IRL	1.14	1.00	0.49	1.09	1.32
DNK	0.96	1.04	1.45	0.99	0.50
GBR	0.91	0.85	0.68	0.76	1.86
HUN	0.89	1.24	0.75	0.89	0.88
ITA	0.80	0.97	1.12	1.18	1.03
GRC	0.77	1.30	0.57	0.95	1.01
ESP	0.65	1.13	1.01	0.85	1.12
AUT	0.60	0.92	1.46	1.25	0.96
POL	0.59	1.54	0.57	0.61	0.83
SVK	0.57	1.25	1.25	0.57	0.83
PRT	0.51	1.32	0.68	1.04	1.05
CZE	0.47	1.26	1.47	0.70	0.62



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- Because of international production fragmentation countries **no longer compete in products/industries, but in activities.**
- New measure of competitiveness: **GVG income**, based on value added in activities in a GVC.
- Findings
 - After long decline, EU competitiveness in manufacturing goods is stabilising.
 - In 2014 Chinese GVC income bigger than EU for first time.
 - Within EU clear pattern of specialisation in activities.



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