

Comment on **Mind the gap: bridging academia with policy making in the estimation of protectionism costs**
by *Ivan Kataryniuk* and *Enrique Moral-Benito*
I Encuentro del Grupo de investigación en internacionalización

J. Mañez ¹

¹Universitat de València

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Congratulations!!!

Structure of the paper

- Computation of country-industry-specific measures of centrality
- Theoretical framework to account of GVC propagation
- **Use of the Baqaee and Fahri (2019) model calibration to explore the effects of 25% tariffs on US import from China**

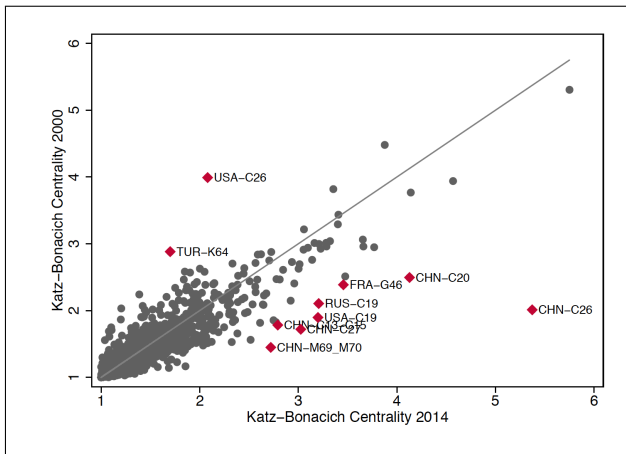
Calculus of country-industry specific measures of centrality

Identification of country-industry pairs that "systemically important"

- Need of considering centrality measures beyond the Domar weights
- **Weighted outdegree:** (simplyfing) sum of shares of industry i as supplier of the different industries it supplies
- **Katz-Bonacich centrality:** an industry centrality is not only result of its outdegree itself but also by its customers outdegree, its customers' customers' outdegree and so ad infinitum
 - Both measures show a high degree of correlation

Suggestion: given the high degree of trade integration in Europe, would it be possible to calculate these measures at UE (Euro Area) level?

Evolution over time of centralities



An important characteristic of their model that allows to take into account the role played by GVCs:

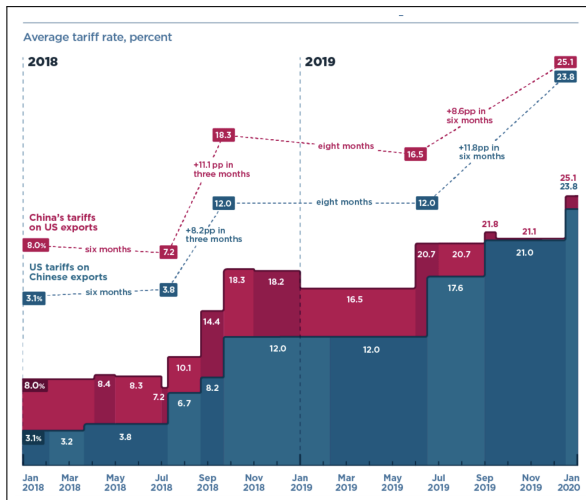
- **Downstream propagation:** supply shocks given by exogenous changes in productivity → if an industry becomes more productive its relative price will change → downstream propagation through prices from suppliers to customers
- **Upstream propagation:** demands shocks → propagation through quantities → upstream propagation from customers to suppliers.

Networks, barriers and trade

Analysis of the effects of a 25% increase in US tariffs imports to China in all industries

- Using Baqaee and Fahri (2019) general equilibrium model (using the parameter calibration by the authors). This model allows to consider:
 - Non linearities on the effects on increased tariffs
 - Role played by GVC (main interest of this Encuentro)

Relevance of the analysis (II)



If everything continues as expected, average US tariffs to China's exports will be 25% (as assumed in the paper)

Relevance of the analysis (I)

2018	2019
<p>February 7 US Section 201 tariffs on solar panels and washing machines</p> <p>March 23 US Section 232 tariffs on steel and aluminum</p> <p>April 2 China's retaliation to US Section 232 tariffs</p> <p>May 1 China's MFN tariff cut on pharmaceuticals</p> <p>July 1 China's MFN tariff cut on consumer goods, autos, and IT products</p> <p>July 6 US Section 301 tariffs (\$34 billion) and China's retaliation (\$34 billion)</p> <p>August 23 US Section 301 tariffs (\$16 billion) and China's retaliation (\$16 billion)</p> <p>September 24 US Section 301 tariffs (\$200 billion) and China's retaliation (\$60 billion)</p> <p>November 1 China's MFN tariff cut on industrial goods</p>	<p>January 1 China suspends retaliation against US autos and parts (Section 301) and reduces MFN tariff rates for 2019</p> <p>February 8 US Section 201 tariffs reduced on solar panels and washing machines in second year of policy</p> <p>June US Section 301 tariffs (10% to 25% increase on \$200 billion, effective June 15) and China's retaliation on some US products (subset of \$60 billion, June 1)</p> <p>July 1 China's MFN tariff cut on IT products</p> <p>September 1 US Section 301 tariffs (15% on subset of \$300 billion) and China's retaliation on some US products (subset of \$75 billion)</p> <p>September 17 China implements product exclusions on less than \$2 billion of US exports from \$34 billion and \$16 billion lists</p> <p>December 15 US Section 301 tariffs (15% on subset of \$300 billion) and China's retaliation on some US products (subset of \$75 billion) and re-imposition of suspended retaliatory tariffs on autos and parts</p>

Further versions of paper should very likely take into account China's retaliation

Tariffs and GVCs in a few simple words

- 1 If tariffs increase the price of intermediate inputs, they reduce the competitiveness of domestic downstream industries using these intermediates
- 2 Tariffs hitting imports of final goods are detrimental for domestic upstream producers of intermediates providing components to be assembled in the countries affected by the tariffs

Tariffs in presence of global value chains imply **Shooting oneself in the foot** (Bellora and Fontagne, 2019)

Do US tariffs affect GVC?

Table 4 Distribution of targeted trade value and estimated share of targeted trade originating in a foreign-invested enterprise, by broad economic category, 2017 (percent)

Broad economic category	Distribution of targeted value across categories	Estimated share of targeted value in category that comes from FIEs
1. Food and beverages	0	0
2. Industrial supplies not elsewhere specified	7.28	44.36
3. Fuels and lubricants	0	0
4. Capital goods (except transportation equipment), and parts and accessories	72.85	70.27
41. Capital goods (except transportation equipment)	43.43	74.41
42. Parts and accessories	29.42	64.16
5. Transportation equipment and parts and accessories	8.55	63.22
6. Consumer goods not elsewhere specified	11.3	75.61
7. Goods not elsewhere specified	0.03	51.01

- The largest targeted trade value by US tariffs is Capital goods, parts, and accessories
 - Capital goods account for 43 percent of the targeted value,
 - Parts and accessories account for 29 percent of the total.

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- Targeted imports over-whelmingly come from foreign invested enterprises. An estimated 74 percent of targeted capital goods come from FIEs and an estimated 64% percent of targeted parts and accessories come from FIEs
- The US tariffs can be considered as taxes on American productive inputs purchased from affiliates of foreign firms operating in China, many of them wholly owned foreign subsidiaries

Using conventional models of trade

- Full pass through of tariffs to domestic prices: US consumers and firms that import foreign inputs stand the full burden of the tariff (rather than foreign exporters).
- Tariffs reduced real income by about 1.4 billion dollars per month (in nov 2018) (accumulated until nov 2018 \$6.9 billions)
 - Deadweight (efficiency losses) \$1.4 billion per month
 - Consumers and firms pay an additional \$3 billion per month in added tax costs
 - Reduction in real welfare=Welfare costs of higher consumer prices - government revenue collected by the tariffs-additional income to domestic producers that were able to sell at higher prices
- Due to reduced foreign competition, domestic producer prices increased

Could you provide measures with your model on the effect of US tariffs on exports, imports, export prices and import prices for Spain?

The US tariffs are discriminatory tariffs

- **Trade diversion effect:** ARW estimate that if the tariffs that were in place by the end of 2018 were to continue, \$165 billion of trade per year will be redirected in order to avoid tariffs.
- ... this is specially costly for multinational companies that made substantial sunk-costs investments in supply chains in China and other countries affected by the tariffs
- Further, they have to incur additional costs in installing new factories in countries not affected by the tariffs
- According to a survey carried out by the US Chamber of Commerce in China:
 - 41% of US firms established in China are considering reallocate production in other countries
 - 10% Mexico
 - 6% back home (sweet home)→ if one of the aims of Trump's tariffs is reshoring , the success is dubious.
- **Your model accounts for trade diversion. It would be interesting to measure the effects in Spain and Europe.**

General equilibrium model for the US with detailed input-output linkages

- Full pass through of tariffs to domestic prices: US consumers and firms that import foreign inputs stand the full burden of the tariff (rather than foreign exporters)
- US tariffs reduced US imports by 32 percent
- Retaliatory tariffs from other countries reduced US exports by 11 percent
- Real income loss: \$7.8 billions per year (0.04 percent GDP)
 - Higher prices for US consumers generated a welfare loss \$68.8 billion
 - This was partially offset by the income gain of US producers that were able to charge higher prices (\$61 billions)
- Due to reduced foreign competition, domestic producer prices increased

General equilibrium model for the World economy up to 2030

Some additional characteristics

- Imperfect competition
- Recursive dynamics and global value chains
- MIRAGE-e (V2) Modelling International Relationships in Applied General Equilibrium

Some results

- Almost negligible gains in the gains of trade for the US (0.09 percent) → full pass-through
- Fall in GDP in the 2030 horizon 0.28 percent

Good News: winners and losers

Effects on GDP

	USA	China	DEU	CAN	JPN	KOR	TWN	MEX	ESP
B&F	-0.28	-0.39	0.02	0.11	0.08	-0.01		2.27	
K&M	-0.06	-0.50	0.01	≈ 0.04	≈ 0.01	-0.08	-0.11	0.09	0.02
K&M (Ch)	-0.10	-0.53					-0.04	0.08	
FGKK	-0.04								
ARW	≈-0.04								

(What about South Korea and Taiwan?)

Bellora & Fontagne, 2019. Some results (I)

Table 2: Main aggregate results for selected countries

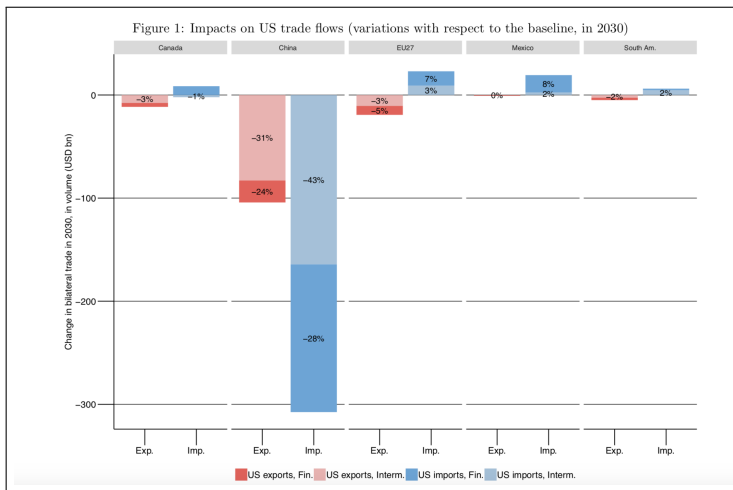
	USA	China	Germany	Canada	Japan	Korea	Mexico
Total tariff revenue	103.05	8.62	2.11	22.80	0.71	0.08	10.07
Exports	-5.97	-3.09	0.24	-0.20	0.66	0.00	2.27
GDP	-0.28	-0.39	0.02	0.11	0.08	-0.01	0.20
Terms of trade	0.06	-0.75	0.05	0.12	0.10	0.24	0.65
Real return to capital	0.07	-0.14	-0.03	-0.18	-0.01	0.01	0.11
Real return to land	-4.49	0.99	0.12	0.22	0.00	-0.05	-0.90
Skilled real wages	-0.30	-0.78	0.05	0.18	0.08	0.03	0.23
Unskilled real wages	-0.18	-0.54	0.05	0.10	0.09	0.02	0.18

Notes: Percentage deviation from the baseline in 2030, in volume. Volumes are based on a Fisher index.

Source: MIRAGE-VA, authors' calculation.

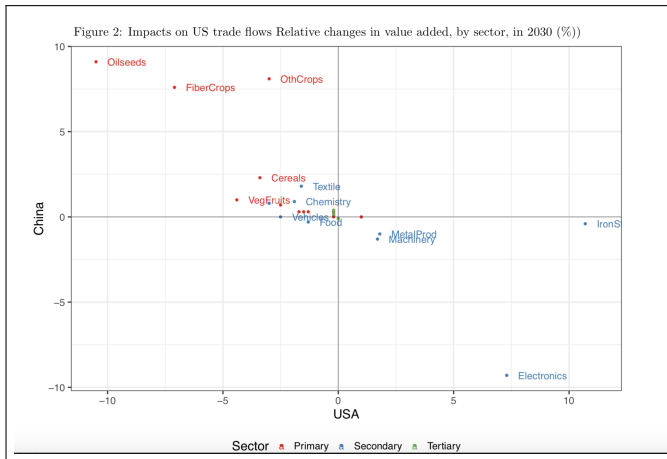
Effects on GDP, etc. Deviations from the baseline in 2030

Bellora & Fontagne, 2019. Some results (I)



Impact on US trade flows Deviations from the baseline in 2030

Bellora & Fontagne, 2019. Some results (I)



Impact on US trade-flows, by sector. Changes in value added 2030, in percent

- 1 Balistreri, E. J., Bohringer, C. and Rutherford, T. F. (2018), Quantifying disruptive trade policies, Technical report, CESifo Working Paper.
- 2 Berthou, A., Jarret, C., Siena, D. and Szczerbowicz, U. (2018), 'Quantifying the losses from a global trade war', Banque de France ECO Notepad 19.
- 3 Charbonneau, K. B. and Landry, A. (2018), The trade war in numbers, Technical report, Bank of Canada.
- 4 Freund, C., Ferrantino, M., Maliszewska, M. and Ruta, M. (2018), Impacts on global trade and income of current trade disputes, MTI Practice Notes 2, World Bank Group.
- 5 Li, M., Balistreri, E., Zhang, W. et al. (2018), The 2018 trade war: Data and nascent general equilibrium analysis, Technical report, Food and Agricultural Policy Research Institute (FAPRI) at Iowa State University.