Simulating impacts of USxChina tariffs on foreign trade

Application of the gravitational model – OEC Tariff Simulator

André Matcin

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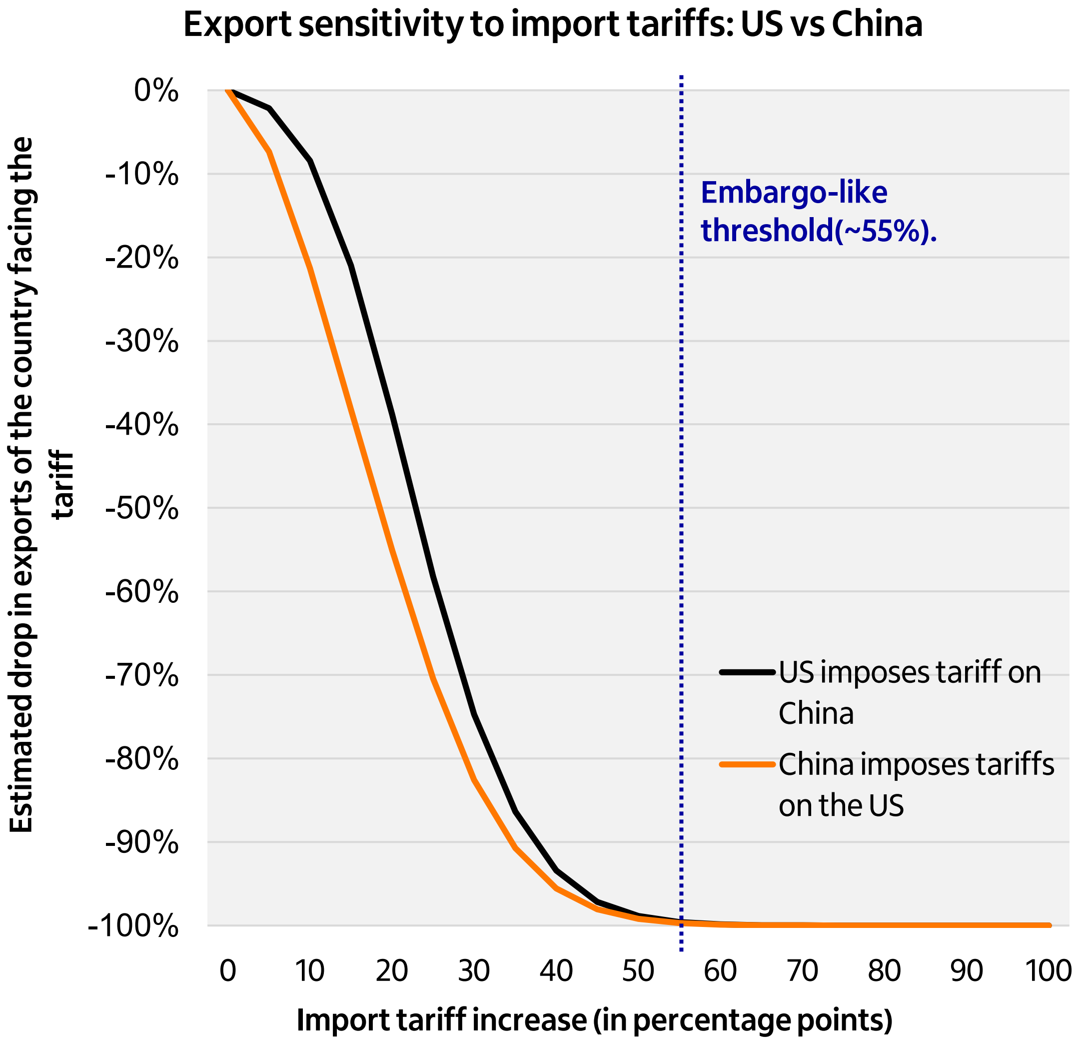
OEC Tariff Simulator: main impacts of reciprocal tariffs between the US and China*

- **What level of tariffs between the U.S. and China effectively amounts to a trade embargo?** Simulations indicate that import tariffs of **50% to 60%** in both directions represent the threshold at which nearly all trade between the two countries comes to a halt. Below this threshold, U.S. exports are more sensitive to tariffs than Chinese exports.
- **Potential beneficiaries of trade redirection include Mexico, Canada, Southeast Asian countries, and Germany** as they are well-positioned to replace U.S.-China trade flows.
- **Brazil would be among the 12 largest beneficiaries.** Under a scenario of reciprocal 60%+ tariffs between the U.S. and China, Brazilian exports could grow by up to USD 15.8 billion in 2026 (compared to a no-tariff scenario). About 75% of this increase would come from additional exports to China and 25% to the U.S.
- **In the current scenario** assuming the newly imposed 30% tariffs on Chinese goods entering the U.S and 10% on U.S. goods entering China remain in place, **Brazil's potential gains are significantly smaller.**
- **Nevertheless, the estimated net impact for Brazil is positive** as gains from redirected trade outweigh potential losses from any U.S. tariffs (such as a 10% tariff) on Brazilian goods.

*The simulations do not consider tariffs in countries other than the reciprocal ones between China and the US.

Import tariffs above 50% are already equivalent to a trade embargo between the US and China



Source: OEC, Itaú BBA

- The gravitational model estimates that the **50% to 60% tariff range is the threshold for a trade embargo** between the US and China, in both directions.
- This range is also the embargo threshold in simulations between the US (applying import tariffs) and several other countries*, and can be considered the universal embargo threshold, according to the model.
- The decline in exports in response to tariffs is **more sensitive in the US than in China**, for tariff levels with ongoing trade flows (<55%).

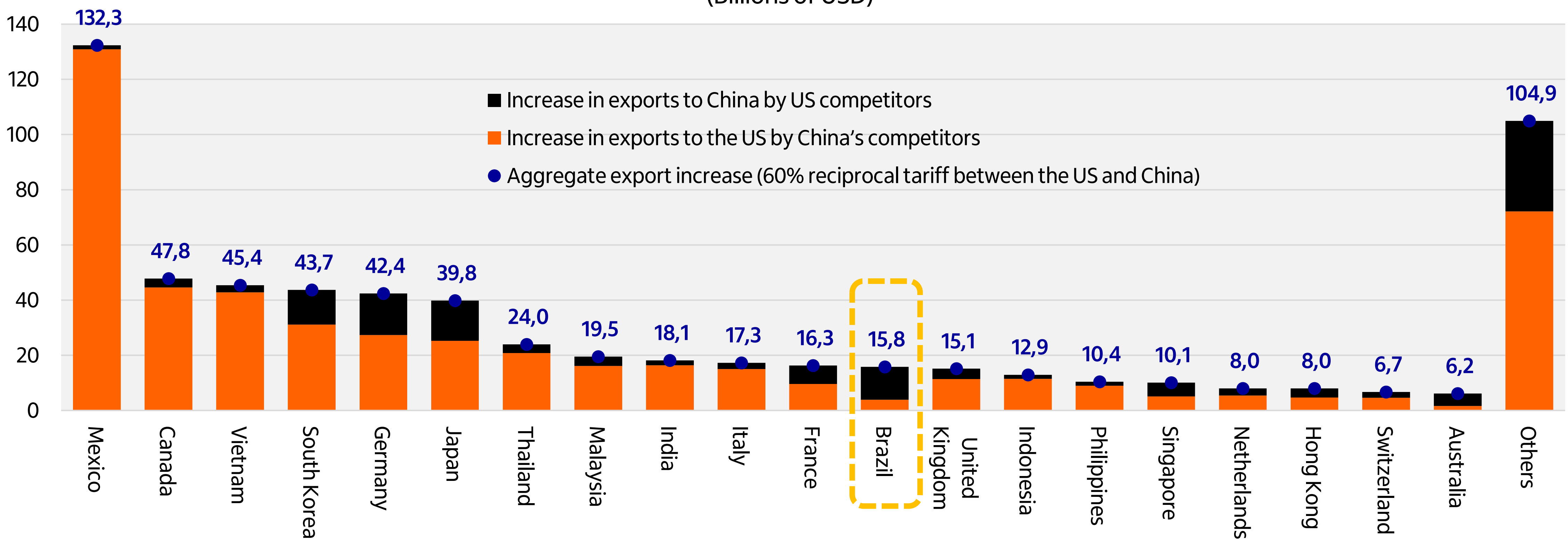
* Simulations were conducted with the US imposing tariffs on the following sample of countries: Mexico, Canada, Vietnam, South Korea, Germany, Japan, Thailand, Malaysia, India, Italy, France, Brazil, the United Kingdom, among others.

Tariffs

The US-China trade embargo opens room for other countries to fill the trade gap, with Brazil ranking among the main beneficiaries

- An embargo-like case of reciprocal tariffs (hypothesis: 60%) between the US and China could **increase Brazilian exports by USD 15.8 billion in 2026.**
- **75% of this gain would come from increased exports to China** and 25% to the US.

"Increase in exports from countries competing with China and the US (hypothesis: 60% reciprocal tariff)
(Billions of USD)



Source: OEC, Itaú BBA

With the new tariff level (30% into US and 10% into China), the room for other countries to fill the gap is smaller, but still significant

- After the recent truce, we assume an additional tariff of 30% on Chinese products in the U.S. and 10% on American products in China. Under these conditions, Brazilian exports could increase by around US$4 billion in 2026.
- Most of this gain would come from increased exports to the U.S. In the previous situation, which was equivalent to a trade embargo, Brazil would have seen a significantly larger increase in exports to China.

"Increase in exports from countries competing with China and the US (hypothesis: 60% reciprocal tariff)
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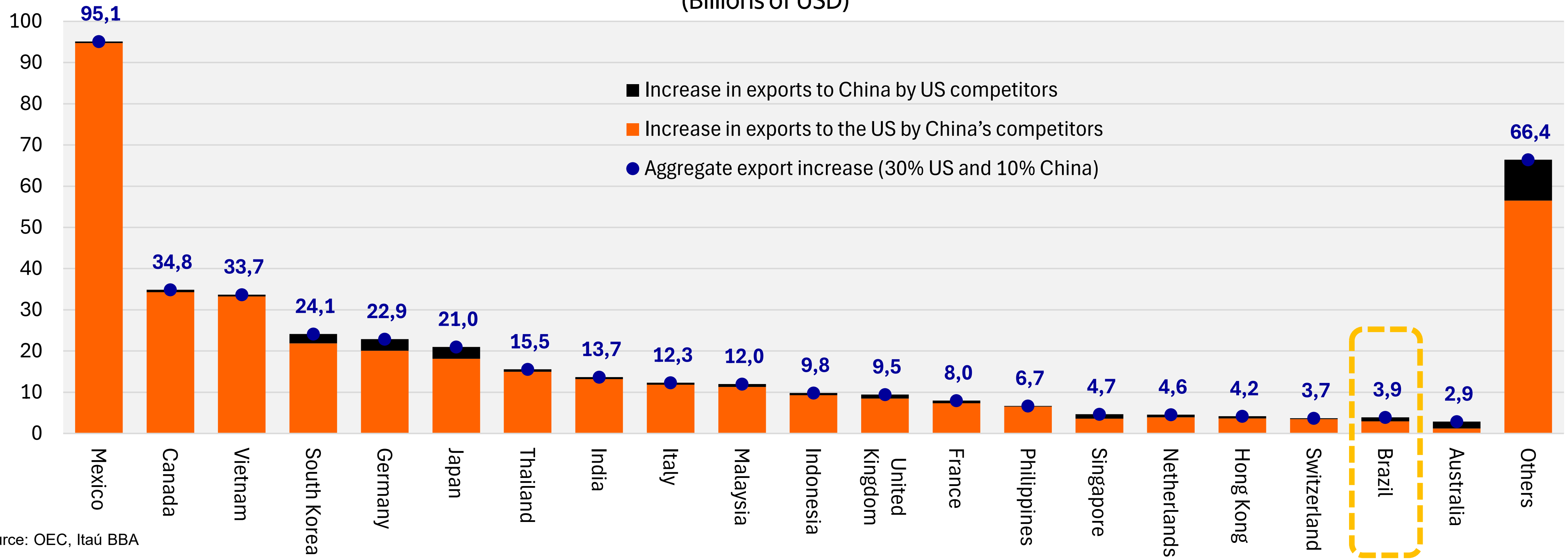

Source: OEC, Itaú BBA

Tariffs

Sectoral impacts in an embargo-like scenario

China imposes 60% import tariff on the US; Brazil gains market share over the US by increasing exports to China

Description	USD bn	%
Soybeans	9.93	82.8%
Planes	0.40	3.4%
Crude Oil	0.38	3.2%
Cellulose	0.30	2.5%
Raw Cotton	0.13	1.1%
Raw Tobacco	0.10	0.8%
Hides and skins	0.07	0.6%
Pig Meat	0.07	0.5%
Centrifuges	0.05	0.4%
Iron Ore	0.04	0.3%
Kaolin (mineral)	0.04	0.3%
Soybean Oil	0.03	0.2%
Paper and cardboard	0.03	0.2%
Frozen Bovine Meat	0.02	0.2%
Copper Ore	0.02	0.2%
Others	0.40	3.3%
Total	**11.99**	**100.0%**

The US imposes 60% additional tariff on China; Brazil gains market share over China by increasing exports to the US

Description	USD bn	%
Furniture	0.19	4.8%
Building Stone	0.17	4.4%
Leather Footwear	0.14	3.5%
Plywood	0.13	3.4%
Broadcasting Equipment	0.13	3.3%
Computers	0.10	2.7%
Vehicles; parts and accessori	0.09	2.4%
Shaped Wood	0.09	2.4%
Rubber Tires	0.09	2.3%
Rubber Footwear	0.09	2.3%
Fruit Juice	0.08	2.2%
Electric Motors	0.08	2.0%
Gas Turbines	0.07	1.9%
Air Pumps	0.07	1.8%
Engine Parts	0.06	1.7%
Transmissions	2.28	59.0%
Total	**3.87**	**100.0%**

Source: OEC, Itaú BBA

Sectoral impacts: Brazil additional exports (tariffs at +30% in the US and 10% in China)

China imposes 10% import tariff on the US; Brazil gains market share over the US by increasing exports to China

Description	USD bn	%
Soybeans	0.49	51.6%
Crude Petroleum	0.16	17.2%
Raw Cotton	0.06	6.3%
Aircraft	0.04	3.7%
Kaolin	0.02	2.0%
Raw Tobacco	0.02	1.8%
Cellulose	0.02	1.8%
Iron Ore	0.02	1.6%
Corn	0.01	1.4%
Copper Ore	0.01	0.8%
Hides and skins	0.01	0.8%
Poultry Meat	0.01	0.7%
Frozen Bovine Meat	0.01	0.7%
Kaolin Coated Paper	0.01	0.7%
Ethanol	0.01	0.6%
Others	0.08	8.2%
Total	**0.95**	**100%**

The US imposes 30% additional tariff on China; Brazil gains market share over China by increasing exports to the US

Description	USD bn	%
Furniture	0.16	5.5%
Plywood	0.13	4.4%
Building Stone	0.12	4.2%
Leather Footwear	0.11	3.8%
Shaped Wood	0.09	3.0%
Broadcasting Equipment	0.08	2.9%
Rubber Footwear	0.08	2.9%
Computers	0.07	2.2%
Vehicle parts and accessories	0.07	2.2%
Rubber Tires	0.06	2.2%
Wood Carpentry	0.05	1.8%
Electric Motors	0.05	1.8%
Air Pumps	0.05	1.7%
Gas Turbines	0.05	1.6%
Fruit Juice	0.05	1.6%
Transmissions	1.72	58.4%
Total	**2.95**	**100%**

Source: OEC, Itaú BBA

About the OEC Tariff Simulator.

- The simulations use the OEC Tariff Simulator to analyze the impacts of tariffs between the US and China.
- **About the OEC:** The Observatory of Economic Complexity (OEC) is a data visualization platform for economic data, originally developed as a research project at MIT.
- **Method:**
  - **Bilateral gravity model** (combines export and import data, distance between countries, GDP, population, cultural and geographical similarity).
  - Explains more than 83% of the variance in future bilateral trade; estimated for different product sections.
  - Uses millions of **bilateral trade records from a decade (up to 2023)**, with coefficient robustness validated by checking their stability across different periods.
- **How it works:**
  - Selection of importing and exporting countries.
  - Definition of the additional tariff rate.
- **Visualizations:**
  - **Direct impact on exports between countries** (compared to the no-tariff estimate in 2026).
  - **Benefits for competitors** exporting similar products.
  - Distribution of **additional exports by product.**
- **Limitations:**
  - Restricted to **bilateral trade relationships**.
  - **Redistributes the entire shock through trade flows**, without changing production across countries.

Macro Research – Itaú

Mario Mesquita – Chief Economist

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