

JUNE 2025

The impact of trade tariffs on the global economy

The impact of trade tariffs on the global economy: Methodology

The impact of trade tariffs on macroeconomic and trade variables is computed through the calculation of effective tariffs under different scenarios and simulation exercises based on distinct methodologies:

- **effective tariffs:** based on recent tariff announcements and the composition of trade flows, effective tariffs are calculated for a broad set of countries
- tariff scenarios: on top of the current tariffs situation (as of May 13th), different scenarios are examined:
 - **reference scenario:** 60% US tariffs on China, 10% on other countries, and limited retaliation
 - alternative scenario: 60% US tariffs on China, average of current and reciprocal tariffs (as of April 2nd) on other countries, and limited retaliation
 - extreme scenario: 145% US tariffs on China, reciprocal tariffs (as of April 2nd) on other countries, and full
 retaliation by all countries
- simulation exercises are performed relying on three different methodologies:
 - multi-country input-output tables are used to estimate the direct impact on gross value added
 - a bilateral panel model is employed to quantify the direct effect of bilateral tariffs on trade flows between pairs of countries
 - an aggregate panel model estimates the broader impact of tariff levels on GDP.

The impact of trade tariffs on the global economy: simulation models

Models	Main Data	Model dynamics	Tariff impact: channels
Input-Output Tables	gross value added in exports (by country and sector)	static	direct (trade channel)
Bilateral panel model	bilateral trade flows, bilateral tariffs	dynamic	direct (trade channel)
Aggregate panel model	macro (GDP growth), aggregate tariffs by country	dynamic	direct (trade channel) and others (uncertainty, confidence, financial markets, etc)
	aOli	ر ا	

The impact of trade tariffs on the global economy:

Main results

- Assuming the current tariffs remain broadly unchanged, global growth could initially decline by around 0.2pp considering only direct trade effects, and by approximately 0.5pp when considering potential indirect effects via uncertainty, confidence, financial and other channels.
- **Simulations show that the overall effects could intensify over the medium term** the global GDP level could fall by more than 2 percentage points—mainly if tariff shocks are not mitigated and structural pressures (such as inefficiencies, productivity losses, erosion of trade institutions and global value chains) become entrenched and exert additional drag.
- The impact of tariffs is potentially large in countries most exposed to US tariff measures and/or most dependent of exports to the US. Still, the US economy could be the most significantly affected country as the adverse effects of its own tariffs will add to the impact of retaliatory measures from trade partners.
- The impact of tariffs on global growth is relatively similar under both the reference and alternative scenarios relative to current levels, though the distribution of effects across countries differ markedly. Impacts are larger in the extreme scenario (from -0.9% to -1.5% in the short-term).
- Global trade flows could fall by 4% to 9%, while US exports and imports could shrink by 12% to 31%, depending on the tariff scenario. Trade flows could collapse entirely if tariffs approach or exceed 60%.
- **Countries imposing higher tariffs—such as the US—may see a temporary improvement in trade balance.** However, our results show these gains dissipate within a few years, and the overall impact in GDP tends to be negative.
- **The results presented should be interpreted with caution.** Uncertainty remains high, and tariff-related developments are evolving rapidly. This fluid context, combined with limited consideration of factors such as mitigation policies and general equilibrium effects, may lead to outcomes that diverge from those assumed in the various scenarios. The current tariff shock is unprecedented, complicating the analysis and further amplifying uncertainty.

Impact of tariffs on gross value added: an input-output table analysis

	In	put-Output Tables: impa	ct in Gross Value Added, p	p
	Current Scenario (**)	Reference Scenario	Alternative Scenario	Extreme Scenario
World	-0.2	-0.3	-0.3	-0.9
US	-0.1	-0.2	-0.3	-1.1
China	-0.9	-2.0	-2.1	-3.7
Eurozone	-0.2	-0.3	-0.3	-0.5
Asia (ex-China) ^(*)	-0.3	-0.3	-0.5	-0.9
Mexico/Canada (*)	-1.1	-0.7	-0.9	-1.4
South America (*)	-0.3	-0.3	-0.3	-0.3

(*) Results for Canada and Mexico represent the simple average of the results for each country. Asia (ex-China) includes the simple average India, Vietnam, Japan, South Korea. South America includes the simple average of, Colombia, Peru, Argentina, Chile and Brazil. (**) In line with tariffs announced until May 13th, 2025. Source: BBVA Research.

Impact of tariffs on total trade flows: a bilateral panel model analysis

	Bilateral panel model (linear model): impact in total trade flows: 2026, pp				
	Current Scenario (**)	Reference Scenario	Alternative Scenario	Extreme Scenario	
World	-4.4	-5.0	-5.9	-9.0	
US	-12.0	-14.3	-18.6	-31.3	
China	-4.7	-8.4	-10.0	-14.8	
Eurozone	-0.8	-1.0	-1.1	-1.7	
Asia (ex-China) (*)	-3.5	-3.3	-4.0	-6.3	
Mexico/Canada (*)	-9.8	-5.0	-7.7	-15.1	
South America ^(*)	-1.6	-1.6	-1.6	-2.8	

(*) Results for Canada and Mexico represent the simple average of the results for each country. Asia (ex-China) includes the simple average India, Vietnam, Japan, South Korea. South America includes the simple average of, Colombia, Peru, Argentina, Chile and Brazil. (**) In line with tariffs announced until May 13th, 2025. Source: BBVA Research.

Impact of tariffs on GDP: an aggregate panel model analysis

	Aggregate panel model: impact in GDP level: 2026, pp				
	Current Scenario (**)	Reference Scenario	Alternative Scenario	Extreme Scenario	
World	-0.5	-0.6	-0.8	-1.5	
US	-1.2	-1.4	-1.8	-3.7	
China	-0.4	-0.9	-1.0	-1.9	
Eurozone	-0.1	-0.1	-0.1	-0.2	
Asia (ex-China) (*)	-0.3	-0.2	-0.2	-0.4	
Mexico/Canada (*)	-1.5	-0.6	-1.0	-1.6	
South America (*)	-0.1	-0.1	-0.1	-0.2	

(*) Results for Canada and Mexico represent the simple average of the results for each country. Asia (ex-China) includes the simple average India, Vietnam, Japan, South Korea. South America includes the simple average of, Colombia, Peru, Argentina, Chile and Brazil. (**) In line with tariffs announced until May 13th, 2025. Source: BBVA Research.



Trade tariffs

Tariffs: main measures and data sources

Main measures

Main	MFN	Preferential	Unweighted	
measures	Standard tariff applied equally to all its trading partners under WTO rules	Reduced tariff offered to specific countries under trade agreements	Simple average of tariffs across products	
Main cross	World Bank	WITS	МасМар	
sources	 aggregated tariffs by countries 1988-2022 (available here) 	 bilateral tariffs (also by sector) 1988-2022 (available here ⊆) 	 bilateral microdata (by product) 2007-2023 	

Weighted

Weighted average of tariffs based on each product's share of total imports

Global Tariff Database (GTD)

- fix problems of other datasets
- bilateral tariffs (also by sector)
- 1988-2021

(available here ☉)

(available here \bigcirc)

p. 9

Tariffs data is "noisy";

there are differences in the observed data across the different sources; simulations in this study rely mostly on GTD, which offers improved coverage and methodological consistency



US TARIFFS: PREFERENTIAL, UNWEIGHTED AVERAGE (%)



Current US tariffs (as of May 13th, 2025)

TARIFFS CONSIDERED FOR THE CALCULATION OF THE INCREASE IN US TARIFFS: INCREASE SINCE THE BEGINNING OF 2025 UNTIL MAY 13TH, 2025

	China	Mexico and Canada USMCA / Non-USMCA	UK	Other Economies
Vehicles	45%	25% ^(*) / 25%	10%*	25%
Electronics	20%	0% / 25%	0%	0%
Pharma	20%	0% / 25%	0%	0%
Steel and Aluminum ^(**)	45%	25% / 25%	0%	25%
Oil	20%	0% / 25%	0%	0%
Copper	20%	0% / 25%	0%	0%
Rest	30%	0% / 25%	10%	10%

(*) Origin Rules: Mexican vehicles and parts are subject to 0%, or 25% tariffs depending on T-MEC compliance and U.S. content. For UK we assume 10% but the rume stands: 10% first 100000, 25% beyond this. (**) The increase to 50% in the tariffs on steel and aluminum, announced at the end of May/25, is not considered here. It has not been taken into account in the simulations conducted in this report. Source: BBVA Research.

US bilateral tariffs: current levels (as of May 13th)

US BILATERAL TARIFFS: ESTIMATED INCREASE SINCE THE BEGINNING OF 2025 UNTIL MAY 13TH, 2025 ^(*) (PP)



(*) Tariffs including April 2nd reciprocal tariffs do not consider the recent de-escalation agreements with China and the UK, the removal of tariff stacking on imports from Mexico and Canada as well as the reciprocal tariff pause announced on April 9th. The US average tariff is weighted by each country's share in total US imports in 2024. Source: BBVA Research calculations based on US administration announcements and announced retaliation by China.

Tariff scenarios

	Reference	Alternative	Extreme
China	60%	60%	145% (tariffs before recent trade deal)
Mexico and Canada	10%	12%	20% and 17%, respectively (tariffs before recent destacking measures)
Other countries	10%	simple average of current tariffs and tariffs including reciprocal tariffs (as of April 4th, 2025)	tariffs including reciprocal tariffs (as of April 4th, 2025)
Retaliation	15% by China, 2.5% by the EU	40% by China, 2% by the EU, 8% by Canada	full retaliation by all countries

Tariff scenarios

US BILATERAL TARIFFS: INCREASE SINCE THE BEGINNING OF 2025 UNTIL MAY 13TH, 2025 (*) (PP)



(*) US average is the average of US bilateral tariffs across countries, weighted by the share in total imports in 2024. Source: BBVA Research calculations based on US administration announcements and announced retaliation by China.



based on a multi-country input-output approach

Simulations

A granular accounting exercise based on input-output tables to study how tariff-related shocks transmit through global value chains

GROSS TRADE ACCOUNTING: CONCEPTUAL FRAMEWORK



The network analysis, when replicated for a large number of countries and sectors, allows us to capture the cascade of losses—in terms of lower output demanded by any given country —incurred directly and indirectly by various countries.

Components of the global value chain: some examples

DECOMPOSITION OF TOTAL EXPORTS TO WORLD (% SHARE OF GROSS VALUE ADDED FOR EACH COUNTRY, YEAR 2022)



DVA Exported as Intermediates that are Absobred in Destination

DVA Exported as Intermediates that are Re-Exported

Gross Exports

Components of the global value chain





Measuring the indirect impact of tariffs on the tariff imposer





intermediates value added exports that returns to the US via intermediate imports

Intermediate value added exports by the US to partner countries

Measuring the direct and indirect impact of tariffs



Import elasticity is assumed to be equal to 0.8, broadly in line with some reference studies in the literature (such as in Huidrom et al (2019) and Boer and Rieth (2024)) and with our estimations for elasticity in the medium and the long term (see next section)

Current scenario impact

IMPACT OF CURRENT SCENARIO FOR TARIFFS (% LOSS OF GROSS VALUE ADDED FOR EACH COUNTRY, YEAR 2022)



Reference scenario impact

IMPACT OF REFERENCE SCENARIO FOR TARIFFS (% LOSS OF GROSS VALUE ADDED FOR EACH COUNTRY, YEAR 2022)



Alternative scenario impact

IMPACT OF ALTERNATIVE SCENARIO FOR TARIFFS (% LOSS OF GROSS VALUE ADDED FOR EACH COUNTRY, YEAR 2022)



Extreme scenario impact

IMPACT OF EXTREME SCENARIO FOR TARIFFS (% LOSS OF GROSS VALUE ADDED FOR EACH COUNTRY, YEAR 2022)



Reference scenario: sectors

PARTNER COUNTRY IMPACT OF US "RECIPROCAL TARIFFS" WITHOUT RETALIATION (*) (% LOSS OF GROSS VALUE ADDED FOR EACH COUNTRY, YEAR 2022)



(*) By definition of this scenario, tariffs are the same across all sectors with elasticity constant at 0.8. Source: BBVA Research

The sectoral decomposition provides insights into how trade costs are distributed differently along the production process.



based on a panel model (I): a bilateral approach

Simulations

A bilateral panel model

- We estimate an impulse response function (IRF) through local projections (LP), with a panel for 175 countries, with annual data from 1995 to 2023:

$$Y_{h,f,t+k} = \beta_1^* T_{fh,f,t} + \beta_2^* T_{hh,f,t} + \beta_3^* X_{h,f,t} + \varepsilon_{h,f,t}$$

- $k = 0 \dots 5$
- Y_{h f t+k} : Log of exports in USD from home-country h to foreign-country f in year t+k
- T for for the formed of the
- $T_{hh.f.t}$: tariffs by home-country h on exports by foreign-country f in year t
- $X_{h,f,t}$: a set of control variables including lagged exports, home and foreign population, home and foreign GDP, home and foreign non-tariff trade barriers, ideological distance, geographical distance, GDP per capita difference as well as variables indicating whether home and foreign have a trade agreement, are contiguous, share a language or the same colonizer
- $\varepsilon_{h.f.t}$: idiosyncratic error term
- Tariff data: Teodora Tetti's GTD
- Different specifications regarding random or fixed effects are estimated

A bilateral panel model: regression results (for year zero)

	RE	FE (Relation)	FE (All)
Log USD Exports (t-1)	0.903***	0.568***	0.526***
	[0.000]	[0.000]	[0.000]
Tariffs (Foreign-country)	-0.0183***	-0.0167***	-0.0188***
	[0.000]	[0.000]	[0.000]
Tariffs (Foreign-country)(t-1)	0.0122***	0.00816***	0.00805***
	[0.000]	[0.000]	[0.000]
Tariffs (Home-country)	-0.00546***	-0.00273***	-0.00141**
	[0.000]	[0.000]	[0.019]
Tariffs (Home-country)(t-1)	-0.00385***	-0.00218***	-0.00105*
	[0.000]	[0.000]	[0.068]
Trade Restrictions (Foreign-country)	-0.0125*** [0.000]	-0.00616*** [0.000]	
Trade Restrictions (Home-country)	-0.0167*** [0.000]	0.00447*** [0.001]	
ldeological Distance	0.00148	-0.00441	0.0353***
	[0.550]	[0.503]	[0.000]
Bilateral Trade Agreement	0.108***	0.0390***	0.00906
	[0.000]	[0.000]	[0.274]

- The table shows three different specifications regarding the use of random effects (RE) vs. using different levels of fixed effects (Relation) and (AII).
- The impact of the tariffs that a foreign country imposes is negative and clearly significant on the home-country exports in the first period (and the following ones)
- Similarly, the impact of the home-country tariffs on home exports is also negative and significant
- However, and as it could be expected, the impact of the foreign-country tariffs are clearly higher in the first period, although both impacts converge in the medium term.
- In this table we only show some of the control variables used in the analysis. The rest of the table can be found in the appendix.
- In the next slide we show the IRF for 6 periods, h=0,...5

Simulated impact of a 1% tariff hike:

impulse-response functions based on a local projections model



CUMULATIVE IMPACT OF A 1% TARIFF HIKE ON

(*) Exports and imports are measured in current USD.

Results represent an average of three specifications regarding fixed and random effects. Impact of foreign tariffs on home exports (imports) is equivalent to impact of home tariffs on home imports (exports) Source: BBVA Research

CUMULATIVE IMPACT OF A 1% TARIFF HIKE ON REAL EXPORTS AND IMPORTS ^(*) (PP)



(*) Exports and imports are measured in constant USD. Results represent an average of three specifications regarding fixed and random effects. Impact of foreign tariffs on home exports (imports) is equivalent to impact of home tariffs on home imports (exports) Source: BBVA Research

Results suggest the positive effects of tariffs on the trade balance are temporary. Imports fall more than exports in the first years (import elasticities are initially above 1.5, implying that tariffs around 60% may reduce trade flows to zero), but both converge to similar levels in the medium-term

Current scenario simulation

If current tariffs remain in place, trade flows will decline sharply, particularly within North-American countries. The US will be among the most affected because it will be negatively impacted by both its own tariffs and retaliatory tariffs, imposed by China and Canada in this scenario.

CURRENT SIMULATION: CUMULATIVE IMPACT ON TOTAL NOMINAL EXPORTS AND IMPORTS IN THE FIRST YEAR AFTER THE ADOPTION OF TARIFFS (2026)



Reference scenario simulation

Higher tariffs would hit significantly exports and imports across the board. Imports would decline more than exports in the US, and less in other countries, in the shorter term (2026), but not necessarily moving forward.

REFERENCE SIMULATION: CUMULATIVE IMPACT ON TOTAL NOMINAL EXPORTS AND IMPORTS IN THE FIRST YEAR AFTER THE ADOPTION OF TARIFFS (2026)



Alternative scenario simulation

Exports and imports would, in general, decline somewhat more in the alternative scenario than in the base scenario.

ALTERNATIVE SIMULATION: CUMULATIVE IMPACT ON TOTAL NOMINAL EXPORTS AND IMPORTS IN THE FIRST YEAR AFTER THE ADOPTION OF TARIFFS (2026) (PP) So Chy Chy By the 12 Chy the Way Chy Co. By Chy Chy Chy the Chy 0 -5 -10 -15 -20 Impact on Total Exports % Impact on Total Imports % -25

Extreme scenario simulation

Trade flows would decline very significantly in this risk scenario. US trade gains in the short-term would be limited by full retaliation from its trade partners

EXTREME SIMULATION: CUMULATIVE IMPACT ON TOTAL NOMINAL EXPORTS AND IMPORTS IN THE FIRST YEAR AFTER THE ADOPTION OF TARIFFS (2026)



Simulations

based on a panel model (II): an aggregate approach



An aggregate panel model:

estimating the impact of aggregated tariffs imposed by home country on its GDP

- Initially, a version of the IRFs estimated by <u>Furceri et al. (2018)</u>, with with a (unbalanced) panel dataset for 155 countries with annual data from 1963 to 2014, is updated through 2023:

$$Y_{h,t+k} - Y_{h,t-1} = \beta_1 * \Delta T^h_{h,t} + \beta_2 * X_{h,t} + \alpha_h + \gamma_t + \varepsilon_{ht}$$

- k = 0 ... 5
- $Y_{h,t+k} Y_{h,t-1}$: Cumulative difference in the log of GDP of home-country h between year t+k and year t-1
- $\Delta T_{h,t}^{h}$: average tariffs imposed by home-country *h* on exports by foreign countries in year *t*, weighted by each foreign country's share in home-country total imports
- $X_{h,t}$: a set of control variables including the change in the trade balance and the real effective exchange rate (REER), two lags of the dependent variable and two lags of the change in home country tariffs
- $\varepsilon_{h,t}$: idiosyncratic error term, α_h : country fixed-effect; γ_t : year fixed-effect
- Tariff data: World Bank
- In addition to the linear model estimated by <u>Furceri et al. (2018)</u>, a non-linear model with squared tariffs as exogenous variable is estimated.

Impact on Real GDP panel model:

regression results (for years=0, 1, 2)

	h=0	h=1	h=2
Change in Log GDP Real (T-1)	0.237 ^{***}	0.292 ^{***}	0.355 ^{***}
	[0.000]	[0.000]	[0.000]
Change in Log GDP Real (T-2)	0.0295	0.0709 ^{**}	0.0673
	[0.178]	[0.028]	[0.230]
Change in Tariffs (Home country WB)	-0.0000996	-0.000527	-0.000995 ^{**}
	[0.681]	[0.123]	[0.028]
Change in Tariffs (Home country WB) (T-1)	-0.000126	-0.000485	-0.000523
	[0.427]	[0.158]	[0.238]
Change in Tariffs (Home country WB) (T-2)	-0.000428**	-0.000443	-0.000965 ^{***}
	[0.020]	[0.106]	[0.008]
Change in Trade Balance/GDP (T-1)	-0.000423**	-0.000680 [*]	-0.000811 [*]
	[0.037]	[0.072]	[0.081]
Change in Trade Balance/GDP (T-2)	-0.000057	-0.000283	-0.00015
	[0.586]	[0.228]	[0.629]
Change in REER (T-1)	-0.00819	-0.022	-0.0430 ^{**}
	[0.367]	[0.106]	[0.015]
Change in REER (T-2)	-0.0185 ^{***}	-0.0367 ^{***}	-0.0399 ^{***}
	[0.001]	[0.001]	[0.004]
Ν	4843	4842	4756
R2	28.2%	23.3%	21.3%
adj. R2	24.7%	19.5%	17.4%

p-values in brackets *p<0.10, **p<0.05. ***p<0.01

- The table shows the results of the first three periods of the local projections.
- In the next slide we depict the IRF for 6 periods, h=0,...5
- The impact of the home country tariffs on activity is negative, but not significant initially, although it starts to have a significant effect around two years after the shock.
- Home country WB refers to the weighted-average tariffs from the World Bank.

The impact of aggregated tariffs imposed by home country on its GDP:

impulse-response functions based on a local projections model

CUMULATIVE IMPACT ON GDP OF A 1% TARIFF HIKE WITH A LINEAR MODEL (LEFT PANEL), A 1% TARIFF HIKE WITH A QUADRATIC MODEL (CENTER PANEL) AND A 10% TARIFF HIKE WITH A QUADRATIC MODEL (PP)



Source: BBVA Research

Results reinforce the view that trade protectionism has a negative impact on economic activity: an increase in tariffs imposed by a given country on its trade partners reduces its own GDP. Impacts are more negative and more significant in the model that allows for non-linear tariff effects.

An aggregate panel model:

estimating the impact of aggregated tariffs imposed by home country, and also by foreign countries (RoW), on GDP

- Tariffs imposed by foreign countries are averaged in line with their share in home country's total exports and included as an additional independent variable; due to GTD tariff data limitations, the sample is restricted to 156 countries and estimated with data from 1995 to 2023:

$$Y_{h,t+k} - Y_{h,t-1} = \beta_1 * \Delta T_{h,t}^h + \beta_2 * \Delta T_{h,t}^f + \beta_3 * X_{h,t} + \alpha_h + \gamma_t + \varepsilon_{h,t}$$

 $- k = 0 \dots 5$

- Y_{ht} : log of GDP of home-country h in year t
- $\Delta T^{h}_{h,t}$: change in average tariffs imposed by home-country *h* on exports by foreign countries in year *t*, weighted by each foreign country's share in home-country total imports
- $\Delta T_{h,t}^{f}$: change in average tariffs imposed by foreign countries (RoW) on exports by home-country *h* in year *t*, weighted by each foreign-country's share in home-country total exports
- $X_{h,t}$: a set of control variables including the change in the trade balance and the real effective exchange rate (REER)
- ε_{ht} : idiosyncratic error term, α_h : country fixed-effect; γ_t : year fixed-effect
- Tariff data: GTD and World Bank.
- In addition to the linear model, a non-linear model with squared tariffs as exogenous variable is estimated.

Impact on Real GDP panel model:

regression results (for years=0, 1, 2)

	h=0	h=1	h=2
Change in Log GDP Real (T-1)	0.164 ^{***}	0.214 ^{***}	0.271 ^{***}
	[0.000]	[0.005]	[0.005]
Change in Log GDP Real (T-2)	0.0788 [*]	0.180***	0.196 ^{**}
	[0.051]	[0.004]	[0.036]
Change in Tariffs (Home country BIL)	0.0001	-0.0007	-0.0012
	[0.739]	[0.287]	[0.273]
Change in Tariffs (Home country BIL (T-1))	-0.0002	-0.0004	-0.0002
	[0.614]	[0.557]	[0.834]
Change in Tariffs (Home country BIL (T-2))	-0.0003	0.0000	-0.0002
	[0.447]	[0.950]	[0.813]
Change in Tariffs (RoW BIL)	0.0000	-0.0007	-0.00252 ^{***}
	[0.950]	[0.389]	[0.009]
Change in Tariffs (RoW BIL (T-1))	-0.0005	-0.00220**	-0.00467***
	[0.386]	[0.030]	[0.001]
Change in Tariffs (RoW BIL (T-2))	-0.0005	-0.00175 [*] [0.076]	-0.00341 ^{**} [0.019]
Change in Trade Balance/GDP (T-1)	-0.0002 [0.449]	0.0000 [0.976]	0.0001 [0.874]
Change in Trade Balance/GDP (T-2)	-0.000295 ^{**}	-0.00106 ^{**}	-0.00121 ^{**}
	[0.032]	[0.025]	[0.038]
Change in REER (T-1)	-0.0012	-0.0183	-0.0507 ^{**}
	[0.935]	[0.339]	[0.035]
Change in REER (T-2)	-0.0152 [*]	-0.0383**	-0.0487 ^{**}
	[0.052]	[0.013]	[0.033]
N	3256	3159	3063
R2	32.0%	26.7%	23.5%
adj. R2	27.8%	22.0%	18.4%

p-values in brackets *p<0.10, **p<0.05. ***p<0.01

- The table shows the results of the first three periods of the local projections.
- In the following slide we depict the impulse -response functions (IRF) for 6 periods, h=0,...5
- "Home country BIL" and "RoW BIL" refers to the trade-weighted tariffs based on the bilateral tariffs from the GTD database
- The impact of the home country tariffs on activity is negative, but not significant initially, whereas the impact of the Row tariffs becomes highly significant after the first two periods.
- In a similar fashion to the bilateral trade flows model, the tariff imposed by other countries have a much higher impact on activity than the tariffs imposed by the home country on itself.

The impact of tariffs by home country on GDP, controlling for foreign tariffs:

impulse-response functions based on a local projections model

CUMULATIVE IMPACT ON GDP OF A 1% TARIFF HIKE WITH A LINEAR MODEL (LEFT PANEL), A 1% TARIFF HIKE WITH A QUADRATIC MODEL (CENTER PANEL) AND A 10% TARIFF HIKE WITH A QUADRATIC MODEL (PP)



Source: BBVA Research

Results suggest that tariffs imposed by a given country on its trade patterns have a negative (although in general not statistically significant) impact on its own GDP.

The impact of tariffs by foreign countries on GDP, controlling for home tariffs:

impulse-response functions based on a local projections model

CUMULATIVE IMPACT ON GDP OF A 1% TARIFF HIKE WITH A LINEAR MODEL (LEFT PANEL), A 1% TARIFF HIKE WITH A QUADRATIC MODEL (CENTER PANEL) AND A 10% TARIFF HIKE WITH A QUADRATIC MODEL* (PP)



Source: BBVA Research

Results reinforce the view that trade protectionism has a negative impact on economic activity: an increase in tariffs imposed by a given country on its trade partners reduces its own GDP. Impacts are more negative and more significant in the model that allows for non-linear tariff effects.

Changes in weighted-average tariffs assumed in different simulations, according to scenario definitions

CHANGES IN WEIGHTED-AVERAGE TARIFFS ACCORDING TO DIFFERENT SIMULATIONS: (PP)



Source: BBVA Research

The largest increase in home-country tariffs are seen in the US, followed by those countries who retaliate. The countries with the largest increase in the Rest of the World (RoW) tariffs are China, Mexico and Canada, and the US if other retaliate.

Current scenario simulation: linear model

The impact of tariffs is large in the short-term and increase considerably in the medium term if tariff shocks are not mitigated and structural pressures (such as inefficiencies, productivity losses, erosion of trade institutions and global value chains) become entrenched and exert additional drag. (Results for the quadratic model are available in the annex).

CURRENT SIMULATION: CUMULATIVE IMPACT ON GDP IN DIFFERENT PERIODS (LINEAR MODEL) (PP)



Reference scenario simulation: linear model

In the reference scenario, world GDP would contract around 0.6pp in 2026 and around 2.0pp in 2027. (Results for the quadratic model are available in the annex.)



Alternative scenario simulation: linear model

Impacts in the alternative scenario are not very different from the impacts in the base scenario simulation. (Results for the quadratic model are available in the annex.)

ALTERNATIVE SIMULATION: CUMULATIVE IMPACT ON GDP IN DIFFERENT PERIODS (LINEAR MODEL) (PP)



Extreme scenario simulation: linear model

In the extreme scenario, GDP could fall by around 3pp in the short term and by more than 5pp in the medium term in the most affected countries. (Results for the quadratic model are available in the annex.)

EXTREME SIMULATION: CUMULATIVE IMPACT ON GDP IN DIFFERENT PERIODS (LINEAR MODEL)

(PP)







A bilateral panel model: regression results for other control variables (year=0)

	RE	FE (Relation)	FE (All)
Log GDP USD (Home-country)	-0.000905 [0.286]	0.514*** [0.000]	
Log GDP USD (Foreign-country)	-0.00311*** [0.000]	0.415*** [0.000]	
Log Population (Home-country)	0.107*** [0.000]	-0.283*** [0.000]	
Log Population (Foreign-country)	0.0785*** [0.000]	0.0824*** [0.000]	
Difference GDP PC	-0.0368*** [0.000]	-0.0655*** [0.000]	-0.0677*** [0.000]
Distance (Harmonic)	-0.0000108*** [0.000]	-0.000201 [0.267]	-0.0000743 [0.721]
Common Colonizer	0.0335*** [0.000]		
Common Language	0.0191*** [0.001]		
Contiguous	0.136*** [0.000]	0.208 [0.482]	0.192 [0.542]
Ν	342579	341873	341871
R2		0.957	0.96
adj. R2		0.954	0.957

p-values in brackets *p < 0.10, **p < 0.005, *** p<0.01

- The table shows the results for the rest of control variables not shown in slide 28.
- Most of the variables in the RE case show the expected coefficient sign.
- The FE (Relation) column shows the results for the case of including fixed effects only for each bilateral relationship, while the FE (All) column shows the results for the case when we include three different levels of fixed-effects, the bilateral relationship and a country-year fixed-effect for each country.

Current scenario simulation: nonlinear model

The impact across all horizons are significantly higher than in the linear case

CURRENT SIMULATION: CUMULATIVE IMPACT ON GDP IN DIFFERENT PERIODS (QUADRATIC MODEL) (PP)



Reference scenario simulation: nonlinear model

In the reference scenario, world GDP would contract around 1.7pp in 2026 and around 2.9pp in 2027.

REFERENCE SIMULATION: CUMULATIVE IMPACT ON GDP IN DIFFERENT PERIODS (QUADRATIC MODEL) (PP) 0 -2 -3 -4 -5 2028 -6 CHANKE CON SOLVER SAM OF SON LOS NO SON CON DE LOS NO SON SOLVER SOLVE LSP SAN

Alternative scenario simulation: nonlinear model

Impacts in the alternative scenario are not very different from the impacts in the base scenario simulation.

ALTERNATIVE SIMULATION: CUMULATIVE IMPACT ON GDP IN DIFFERENT PERIODS (QUADRATIC MODEL) (PP)



Extreme scenario simulation: nonlinear model

In the extreme scenario, GDP could fall by around 6pp in the short term and by more than 15pp in the medium term in the most affected countries

EXTREME SIMULATION: CUMULATIVE IMPACT ON GDP IN DIFFERENT PERIODS (QUADRATIC MODEL) (PP)





Authors

Sumedh Deorukhkar sumedh.deorukhkar@bbva.com Enestor Dos Santos enestor.dossantos@bbva.com Elena Hernández Cabriada elena.hernandez.cabriada@bbva.com

Cecilia Posadas c.posadas@bbva.com Alfonso Ugarte alfonso.ugarte@bbva.com

Disclaimer

The present document does not constitute an "Investment Recommendation", as defined in Regulation (EU) No 596/2014 of the European Parliament and of the Council of 16 April 2014 on market abuse ("MAR"). In particular, this document does not constitute "Investment Research" nor "Marketing Material", for the purposes of article 36 of the Regulation (EU) 2017/565 of 25 April 2016 supplementing Directive 2014/65/EU of the European Parliament and of the Council as regards organisational requirements and operating conditions for investment firms and defined terms for the purposes of that Directive (MIFID II).

Readers should be aware that under no circumstances should they base their investment decisions on the information contained in this document. Those persons or entities offering investment products to these potential investors are legally required to provide the information needed for them to take an appropriate investment decision.

This document has been prepared by BBVA Research Department. It is provided for information purposes only and expresses data or opinions regarding the date of issue of the report, prepared by BBVA or obtained from or based on sources we consider to be reliable, and have not been independently verified by BBVA. Therefore, BBVA offers no warranty, either express or implicit, regarding its accuracy, integrity or correctness.

This document and its contents are subject to changes without prior notice depending on variables such as the economic context or market fluctuations. BBVA is not responsible for updating these contents or for giving notice of such changes.

BBVA accepts no liability for any loss, direct or indirect, that may result from the use of this document or its contents.

This document and its contents do not constitute an offer, invitation or solicitation to purchase, divest or enter into any interest in financial assets or instruments. Neither shall this document nor its contents form the basis of any contract, commitment or decision of any kind.

The content of this document is protected by intellectual property laws. Reproduction, transformation, distribution, public communication, making available, extraction, reuse, forwarding or use of any nature by any means or process is prohibited, except in cases where it is legally permitted or expressly authorised by BBVA on its website <u>www.bbvaresearch.com</u>.

