

Policy Analysis Focus 24-9
Impact on the Motor Vehicle Industry of Retaliation for US Tariff Hikes¹

December 2024

Kenichi Kawasaki

Professor, GRIPS Alliance, National Graduate Institute for Policy Studies (GRIPS)

I. Introduction

The new United States (US) president will be appointed in January 2025 and will likely hike US tariffs in some manner. When the US started to hike tariffs on imports from China in 2018, China responded by hiking tariffs on imports from the US. Global trade policy making would be discussed noisily in the international arena in conjunction with intensive tariff negotiations with the US. Responses by other economies to US tariff hikes would be a concern alongside the adverse impact on key industries.

This article quantitatively investigates the economic impact of retaliatory tariffs by other economies against the US, with specific concerns regarding the motor vehicle industry, by means of simulation studies using a computable general equilibrium (CGE) model of global trade,² following up on Kawasaki (2024).³

II. Macroeconomic impact of retaliation

The impact of retaliatory tariffs by all economies against the US (US10R) is compared here with the impact of an additional 10% US tariff on imports of all goods from all economies (US10), as is shown in Table 1. The impact of an additional 10% global tariff on imports of all goods (WR10)⁴ is also studied here as a reference scenario.

¹ The views expressed in this article are the author's own and do not represent those of GRIPS Alliance or other organizations to which the author belongs.

² The framework of model simulations remains unchanged from that in Kawasaki (2024). The Global Trade Analysis Project (GTAP) 7 model (based on GTAP 11c Data Base) is solved using GEMPACK software referred to in Horridge, Jerie, Mustakinov & Schiffmann (2018), GEMPACK Manual, ISBN 978-1-921654-34-3, incorporating dynamic effects of capital and labor. The baseline data for GDP and population are updated to those for 2025 based on the World Economic Outlook (WEO) Database, October 2024, International Monetary Fund (IMF).

³ Kawasaki (2024), "Economic Impact of Further US Tariff Hikes," GRIPS Discussion Paper 24-12, GRIPS, December 2024.

⁴ It is mechanically assumed here that all economies would impose an additional 10% tariff on

Table 1 Macroeconomic impact of tariff hikes by economy

	(%)								
	Exports			Consumption price			Real GDP		
	US10	US10R	WR10	US10	US10R	WR10	US10	US10R	WR10
Australia	0.2	-0.2	-5.1	-0.8	0.7	1.1	-0.2	0.1	-2.9
New Zealand	-0.2	-0.4	-11.0	-0.5	0.7	1.8	0.0	0.4	-3.1
China	-0.7	-1.2	-15.4	-0.7	0.8	1.1	0.1	0.4	-1.8
Japan	-0.8	-0.8	-17.4	-0.5	0.8	2.0	0.0	0.7	-2.4
Korea	-0.5	-0.3	-16.7	-0.5	1.0	0.7	0.1	0.6	-4.1
ASEAN	-0.2	0.2	-20.9	-0.6	0.8	0.9	0.1	0.5	-7.3
India	-0.8	-1.1	-19.1	-0.4	0.7	1.7	0.2	0.5	-0.5
US	-16.7	-25.3	-20.6	2.8	-0.4	2.9	-1.7	-2.6	-0.6
Canada	-3.7	-9.7	-13.7	-1.2	0.0	1.6	-1.4	-2.3	-3.3
Mexico	-7.5	-16.1	-23.7	-1.5	-0.4	1.6	-4.8	-7.7	-10.1
EU	-0.2	0.6	-18.0	-0.5	0.8	1.8	0.1	0.8	-7.0
UK	-0.4	-0.4	-13.9	-0.5	0.6	1.8	0.0	0.2	-3.1
Russia	0.4	0.5	-6.8	-0.9	0.3	0.8	0.1	0.9	-1.1
World	-2.3	-3.4	-16.7	0.5	0.3	2.0	-0.5	-0.4	-3.0
Rest of US	-0.6	-0.7	-16.3	-0.6	0.7	1.5	-0.1	0.3	-3.9

Source: Author's simulations.

It is indicated that the impact on trade would appear primarily in North America. If the US imposed a 10% tariff, US exports are estimated to decrease the most, by 16.7%, in line with resultant decreases in US imports, i.e. exports of other economies to the US. Exports would also decrease substantially in Canada and Mexico, both heavy US trade partners. That said, exports would decrease in the other economies to a small extent, resulting in decreases in the rest of US world exports by only 0.6%. If all economies retaliated against US tariff hikes, exports would decrease much more in Canada (by 9.7%) and Mexico (by 16.1%) than in other economies alongside the US (by 25.3%). On the other hand, if tariffs were hiked by 10% globally, world exports are estimated to decrease by 16.7% on average ranging from around 5% to 7% in Australia and Russia (both commodity exporting countries) to more than 20% in the US, Mexico and others.

The impact on private consumption prices would vary among economies. If the US hiked tariffs by 10%, US prices are estimated to rise by 2.8% due to the elevation of import costs by tariffs, but to fall in other economies by 0.6% on average due to lower prices in the international market as a result of decreases in US demand. Meanwhile, if all non-US economies retaliated, prices would in turn fall in the US by 0.4% due to decreased demand for US production, and to rise in other economies by 0.7% on average. If tariffs were hiked by 10% globally, world prices are estimated to rise by 2.0% on

each other, which would include tariff hikes among the member economies of the European Union (EU) and the Association of Southeast Asian nations (ASEAN).

average, with the largest rise in the US, 2.9%.

The impact on real GDP would be explained by changes in trade and prices, as discussed above. If the US hiked tariffs by 10%, real GDP is estimated to decrease primarily in North America due to adverse impact on North American exports, but not necessarily in other economies, thanks in part to declining prices. If all economies retaliated, real GDP would further decrease in the US (by 2.6%), Canada (by 2.3%) and Mexico (by 7.7%). On the other hand, other economies would enjoy real GDP gains⁵ due to improved terms of trade, according to current model simulations. Exports would still decrease, though to a small extent, and private consumption prices would reverse course and rise, but income would increase since export prices would rise more than import prices. That said, average world real GDP is estimated to decrease by 3.0% if tariffs were hiked by 10% globally.

All in all, North America would be a distinct loser under US tariff hikes. Global retaliation against US tariff hikes would further deteriorate the economies of Canada and Mexico, but might not deteriorate other economies. On the other hand, it may be noted ironically that the US may be least adversely affected by global tariff hikes.

III. Impact on motor vehicle trade

The US tariff hike scenario proposed so far includes hikes on imports from Canada and Mexico. If the US imposed an additional 25% tariff on imports of all goods from Canada and Mexico, motor vehicle exports⁶ to the US are estimated⁷ to decrease

Table 2 Impact on motor vehicle exports

	US 25% tariffs on Canada and Mexico				Canada and Mexico retaliatory tariffs			
	to US	to Canada	to Mexico	to World	to US	to Canada	to Mexico	to World
Japan	14.9	-0.7	-1.1	12.2	17.7	1.6	0.1	18.5
US	-	-19.9	-15.3	-38.7	-	-44.3	-33.2	-73.6
Canada	-43.3	-	-0.1	-42.3	-57.6	-	-0.1	-58.2
Mexico	-65.5	0.5	-	-57.1	-86.1	2.4	-	-83.4
EU	20.1	-1.1	-2.1	23.6	24.2	2.8	0.4	42.1
World	-50.5	-22.5	-22.3	-82.4	-74.1	-34.8	-32.2	-118.6

Source: Author's simulations.

⁵ This does not mean that other economies could gain from their own retaliation. For example, Japan's real GDP is estimated to decrease by 0.30% as a result of Japanese retaliation. That said, Japan's real GDP would increase as a result of retaliation of other economies including Mexico (by 0.17%), Canada (by 0.14%), China (by 0.12%) and the EU (by 0.10%).

⁶ GTAP data for motor vehicle sector includes auto parts.

⁷ Estimated impact in terms of trade values would be subject to larger errors than that in terms of

substantially in Canada by 43.3 billion US dollars (USD), and in Mexico by 65.5 billion USD. US motor vehicle exports, mainly those to Canada and Mexico, would also decrease, resulting in a 38.7 billion USD decrease in total US exports. It is indicated that US tariff hikes would adversely affect both US imports from and exports to North American economies.

Motor vehicle exports from Japan and the EU to Canada and Mexico are estimated to decrease, though to a small extent. On the other hand, motor vehicle exports to the US are estimated to increase in Japan by 14.9 billion USD and in the EU by 20.1 billion USD due to trade diversion effects resulting in a decrease of 50.5 billion USD in total US motor vehicle imports, which is around half of combined decreases in US imports from Canada and Mexico. The impact of tariff hikes on third parties must be noted.

If Canada and Mexico retaliated for US tariff hikes, the adverse impact on motor vehicle exports from Canada and Mexico to the US would expand alongside the impact on US exports to Canada and Mexico. Meanwhile, increases in exports of motor vehicles from Japan and the EU to the US would also be larger than in the case of unilateral US tariff hikes, though to a small extent.

Third parties could expect the benefits of increases in direct exports of domestic production to the US due to trade diversion effects resulting from tariff hikes between the US and Canada/Mexico. Motor vehicle production is estimated to increase by 5.5% to 8.5% in Japan and by 2.4% to 4.4% in the EU. That said, the adverse impact on their indirect exports of foreign direct investment (FDI) production in North America would be a concern for key industries including motor vehicles. Motor vehicle production is estimated to decrease by 40.0% to 53.3% in Canada and by 30.1% to 43.7% in Mexico.

IV. Concluding remarks

It is indicated that the adverse impact of US tariff hikes and retaliatory tariffs by other economies would primarily occur in Canada and Mexico alongside the US, both at the macro and sector levels. Indirect impact through overseas investment would be a concern for third parties. International policy coordination (alongside individual responses to the US tariff hikes) would be effective for achieving balanced growth of the world economy. Advanced quantitative studies using model simulations would be useful for all parties in their preparations for trade policy debates in the international arena.

rates of change. Baseline data for trade values (but not precise trade values) are solved by a model simulation updating GDP values for 2025.