"Can the Free Trade Agreements Accelerate Nepal's Path Towards Economic Prosperity? An Econometric and CGE Model Based Assessment"

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Nepal

- Agrarian country with more than 66% of its population directly engaged in farming
- Agricultural and livestock sectors are the largest contributors towards gross domestic product (GDP): 34% after the service sector
- Part of trade liberalization starting in 1992
- The first least developed country to join the World Trade Organization (WTO) in 2004
- Signed bilateral trade treaties with 17 countries (The United States of America, United Kingdom, Yugoslavia, India, Russia, South Korea, North Korea, Egypt, Bangladesh, Sri Lanka, Bulgaria, China, Czech Republic, Pakistan, Romania, Mongolia, and Poland) (ITA, 2020)
- Signed two Regional FTAs: SAFTA and BIMSTEC

Signed FTAs

SAFTA
South Asian Free Trade Area
Signed in 2006
Currently active
Nepal, India, Bangladesh, Bhutan, Sri Lanka, Pakistan, Maldives, and Afghanistan (WTO, 2022)
To cut tariff rates on a product-by-product basis (United Nations, 2021)
Links the South Asian countries

Signed FTAs

BIMSTEC
The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation
Signed in 2004 (ITA, 2021)
An early announcement-under negotiation FTA
Nepal, India, Bangladesh, Bhutan, Sri Lanka, Myanmar, and Thailand (WTO, 2022)
To establish a more comprehensive free-trade area through deeper, more substantial sector coverage of services and an open and competitive investment regime (WTO, 2018).
Only cross-regional FTA signed by Nepal that links the Asian countries within SAARC and ASEAN member countries

Signed FTAs

SAFTA

Nepal, India, Bangladesh, Bhutan, Sri Lanka, Pakistan, Maldives, and Afghanistan (WTO, 2022)

BIMSTEC

Nepal, India, Bangladesh, Bhutan, Sri Lanka, Myanmar, and Thailand (WTO, 2022)

Why Nepal?

Nepal, Bangladesh, Bhutan, and Myanmar, are listed as least developed countries (LDCs) while the remaining member countries are not

The LDCs are low-income countries that bear significant difficulties to self-support their economy in a sustainable way

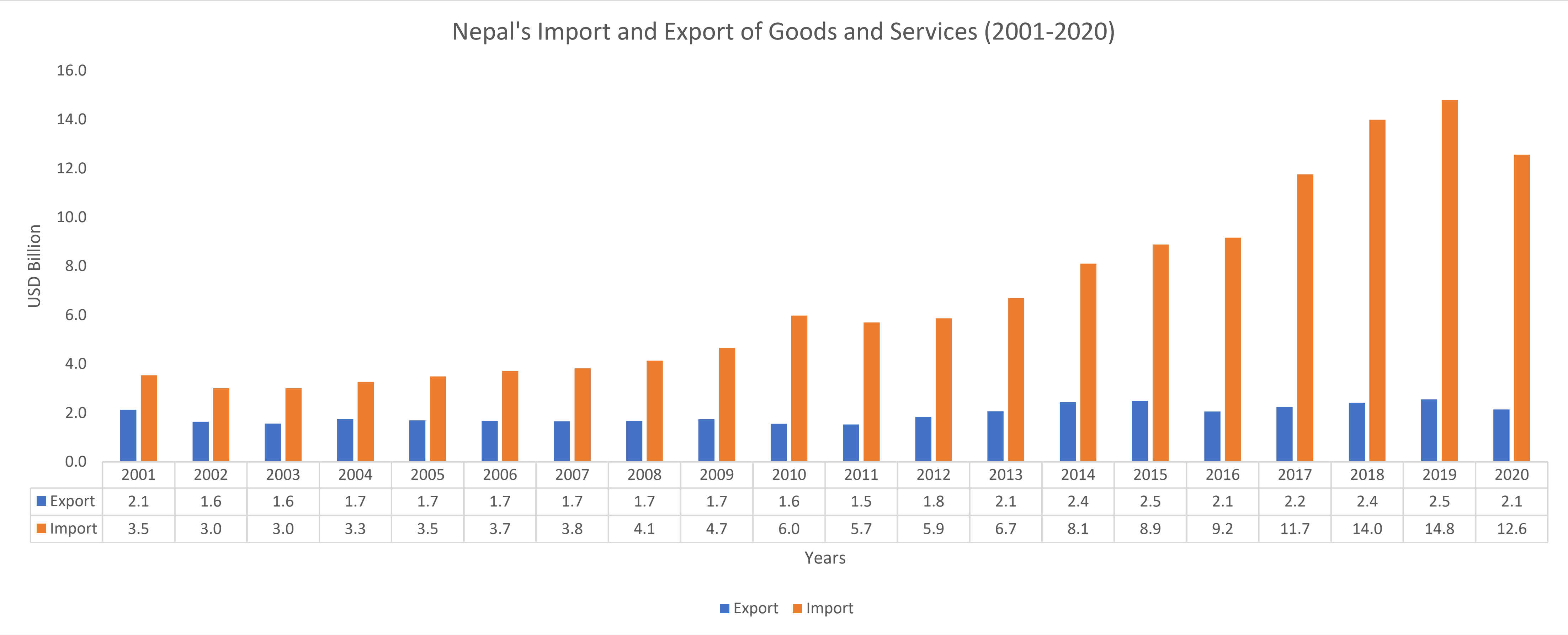
Nepal was found to be economically susceptible to trade, with a vulnerability index of 28.4 out of 100

Nepal ranked 73rd on the Global Hunger Index (GHI) with a score of 19.5 for the year 2020 (Global Hunger Index, 2021

68% of its livelihood completely dependent on agriculture (USAID, 2021)

Ironically, Nepal is a landlocked country and is enormously affected by trade route and limited logistic facilities

Nepal’s Trade Profile



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Export	2.1	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.6	1.5	1.8	2.1	2.4	2.5	2.1	2.2	2.4	2.5	2.1
Import	3.5	3.0	3.0	3.3	3.5	3.7	3.8	4.1	4.7	6.0	5.7	5.9	6.7	8.1	8.9	9.2	11.7	14.0	14.8	12.6

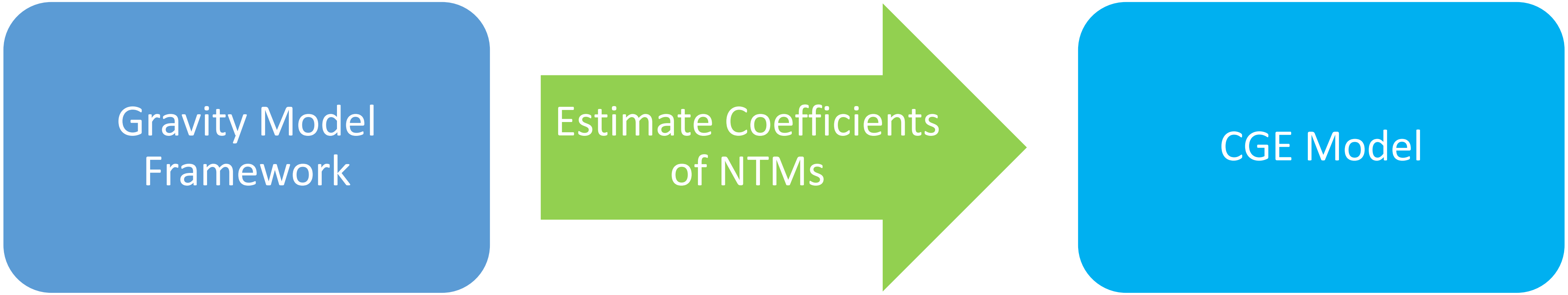
Figure 1: Nepal’s import and export of goods and services (The World Bank, 2022).

Objectives

To estimate the effects of NTMs on trade in Nepal via a gravity border effect approach

To quantify and analyze the economy-wide impact of tariff and NTMs removal on agricultural sectors

Methodology



Methodology

Gravity Model Framework

- The variables for the gravity equations used for this study were adapted using the Poisson Pseudo Maximum Likelihood (ppml) estimator as proposed by Santos Silva and Tenreyro (2006)
- The following equation was used to calculate the non-tariff barriers:

$$\ln x_{ij} = \beta_1 + \beta_2 \ln Prod_i + \beta_3 \ln Consum_j + \beta_4 \ln Distance_{ij} + \beta_5 Landlocked_{ij} + \beta_6 \mathrm{Contig_{ij}} + \beta_7 \mathrm{Language_{ij}} + \beta_8 RTA + \beta_9 \ln(1 + \mathrm{AVE_{tarrif}}) + \beta_{10} b_{x,y,z} + \beta_{11} b_{\frac{x,y,z}{Nepal}} + \beta_{12} b_{\mathrm{x,y,z}} + \beta_{13} b_{\mathrm{Other}} + \varepsilon_{ij}$$ ----(Equation 1)

where,

$\ln x_{ij}$ is a dependent variable, $\mathrm{b_{x,y,z}}$ are the border effect, β_1 is a constant, $\beta_{2,3,4,\ldots,13}$ are the coefficients of estimates for independent variables, and the remaining variables are the independent variables

Methodology

Estimate Coefficients of NTMs

$$AVE_{bij} = \exp\left[\frac{\beta_{ij}}{1-\sigma}\right] - 1$$ ----(Equation 2)

where,

- AVE_{bij} is Ad-valorem equivalents of border barriers
- β_{ij} is the Coefficient applied to the border dummy *bij*
- σ is the elasticity of substitution between goods

Methodology

Computable General Equilibrium (CGE) Model

- Global Trade Analysis Project (GTAP) a multi-region, multi-sector, computable general equilibrium model can capture the interactions between different policy scenarios in different sectors of various regions/countries in economic perspective (Hertel, 1997; Aguiar et al. 2020)
- It can forecast the effects of future policy change in economy, which would be nearly impossible with other econometric estimation (Hertel et. al., 2007)
- RunGTAP version 10 data base based on GEMPACK 11.2 with updated base year 2020 was used for running the simulations
- This study used percent change in tariffs and non-tariffs as a result of different trade agreements with respect to aggregated 30 sectors present in our model for 16 regions

Scenarios

SAFTA

BIMSTEC

Interaction of SAFTA and BIMSTEC FTAs

Experimental Shocks:

1. Tariff removal: 100%
2. NTMs Removal: 50%
3. Tariff and NTMs Removal (1 & 2)

SAFTA

BIMSTEC

Interaction of SAFTA and BIMSTEC FTAs

Experimental Shocks:

1. Tariff removal: 100%
2. NTMs Removal: 50%
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Scenarios

SAFTA

Within the South Asian countries, Nepal has two to nine times higher tariffs for imports (Kathuria, 2018)

The tariff should have been within 0-5% by 2016, but it is not the case

Will provide a better picture of what the bilateral trade would look like between SAARC member countries and Nepal if the tariff agreements are actually in practice.

Scenarios

SAFTA

BIMSTEC

Interaction of SAFTA and BIMSTEC FTAs

Experimental Shocks:

1. Tariff removal: 100%
2. NTMs Removal: 50%
3. Tariff and NTMs Removal (1 & 2)

BIMSTEC

Will explore the trade effects Nepal can acquire, if the FTA is in operation

Scenarios

SAFTA

BIMSTEC

Interaction of SAFTA and BIMSTEC FTAs

Experimental Shocks:

1. Tariff removal: 100%
2. NTMs Removal: 50%
3. Tariff and NTMs Removal (1 & 2)

Interaction of SAFTA and BIMSTEC FTAs

Included both SAFTA and BIMSTEC trade agreements to examine the trade direction Nepal will move forward when the bilateral tariff and non-tariff rates are removed within the member countries for both SAFTA and BIMSTEC trade agreements

Key Findings

1. Impact on GDP, Volume of Imports, and Exports of Commodities for Nepal
2. Impact on Welfare Decomposition for Nepal
3. Impact on Trade Balance
4. Impact on Industrial Supply of Commodities
5. Impact on Private Household Demand for Imports of Commodities

Key Findings

Table 1: Impact on GDP, Volume of Imports, and Exports of Commodities for Nepal

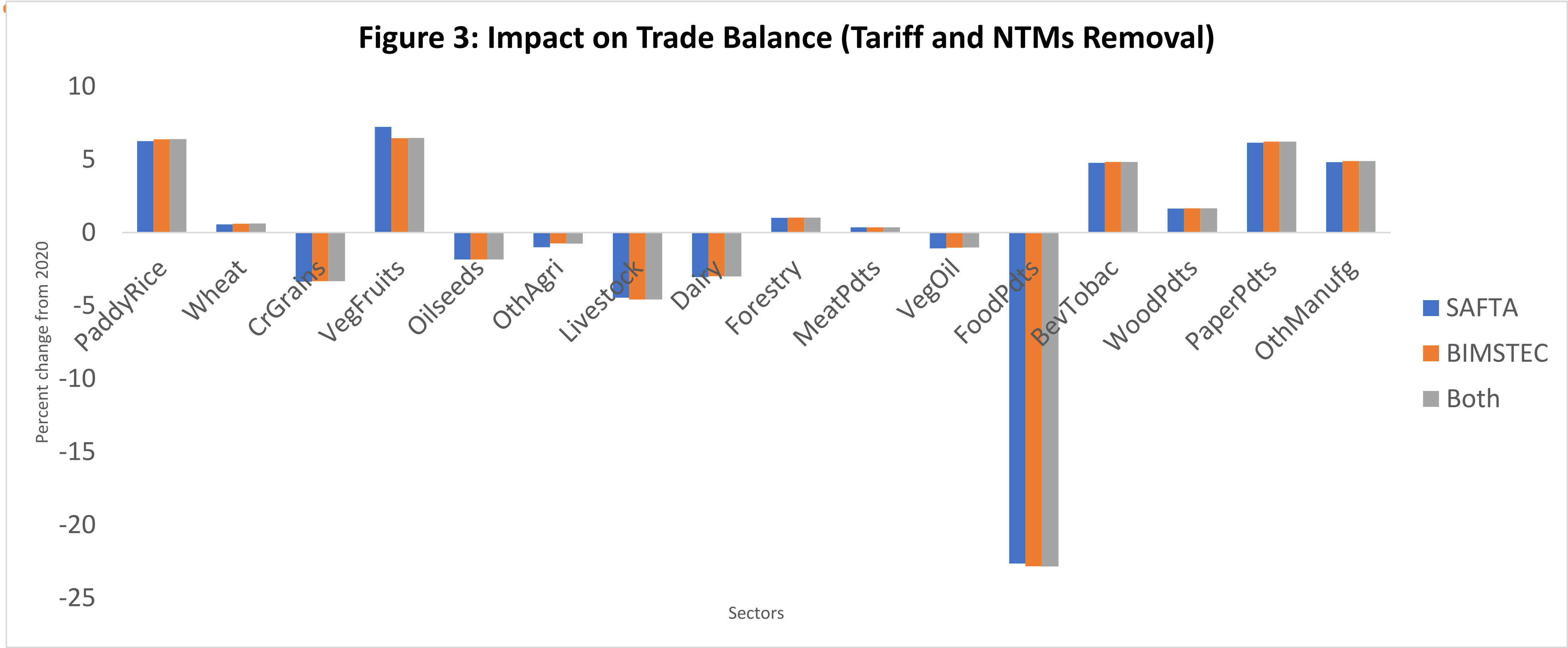
Macroeconomic Impacts	Tariff		NTMs		Tariff & NTMs	
	%	$ million	%	$ million	%	$ million
			SAFTA			
GDP	1.30	257	0.88	173.16	1.04	205.25
Vol of Imports	-0.19	-16.78	0.23	20.57	-0.31	-28.15
Vol of Exports	13.97	270.93	3.21	62.30	11.92	231.21
			BIMSTEC			
GDP	1.31	258.29	0.87	172.53	1.04	205.88
Vol of Imports	-0.19	-16.79	0.23	20.20	-0.32	-28.75
Vol of Exports	14.14	274.21	3.21	62.31	12.09	234.42
			SAFTA+BIMSTEC			
GDP	1.31	258.33	0.87	172.46	1.04	205.86
Vol of Imports	-0.19	-16.75	0.22	20.15	-0.32	-28.79
Vol of Exports	14.15	274.38	3.21	62.22	12.09	234.53

Key Findings

Table 2: Impact on Welfare Decomposition for Nepal (measured in terms of equivalent variation)

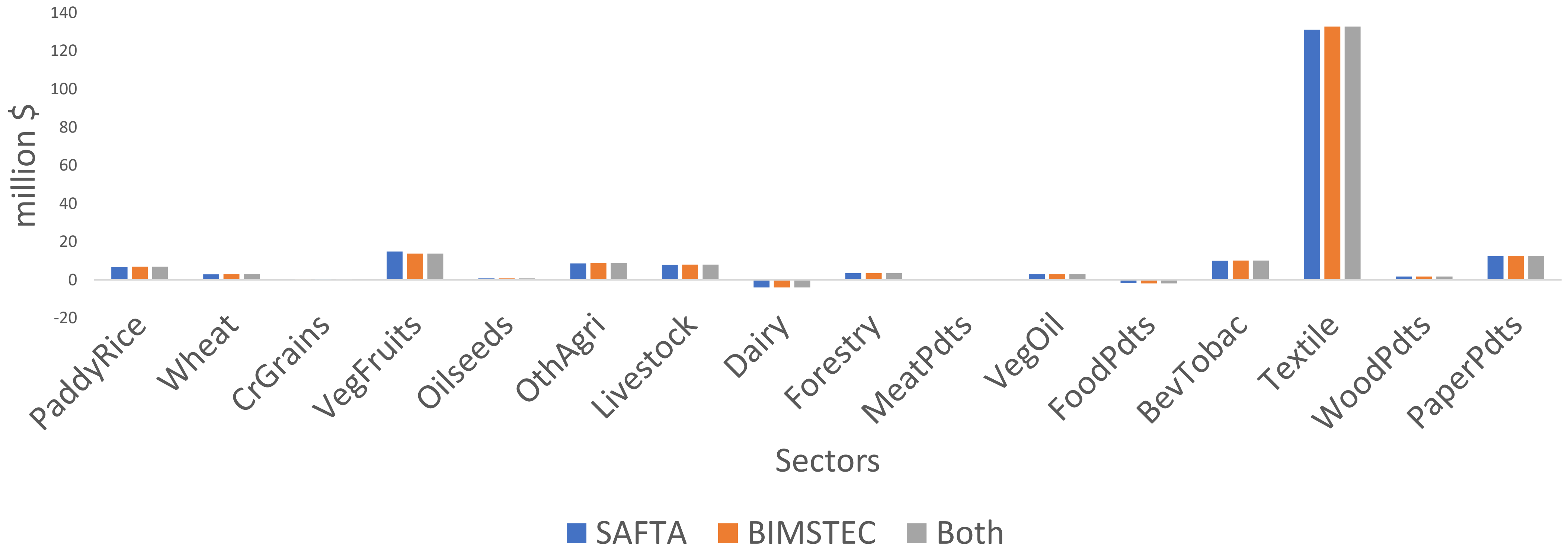
	alloc_A1	endw_B1	tech_C1	pop_D1	tot_E1	IS_F1	pref_G1	Total
				SAFTA				
Tariff	44.32	42.21	147.24	0.00	-59.58	-204.73	0.00	-30.55
NTMs	44.79	42.29	64.43	0.00	-14.28	-29.42	0.00	107.81
Tariff & NTMs	40.09	42.18	100.37	0.00	-51.77	-189.66	0.00	-58.78
				BIMSTEC				
Tariff	45.16	42.21	147.67	0.00	-60.23	-206.90	0.00	-32.10
NTMs	44.52	42.29	64.06	0.00	-14.29	-29.80	0.00	106.78
Tariff & NTMs	40.64	42.18	100.45	0.00	-52.45	-192.37	0.00	-61.55
				SAFTA + BIMSTEC				
Tariff	45.18	42.21	147.68	0.00	-60.26	-206.99	0.00	-32.18
NTMs	44.50	42.29	64.02	0.00	-14.28	-29.79	0.00	106.73
Tariff & NTMs	40.63	42.18	100.43	0.00	-52.47	-192.49	0.00	-61.72

Key Findings



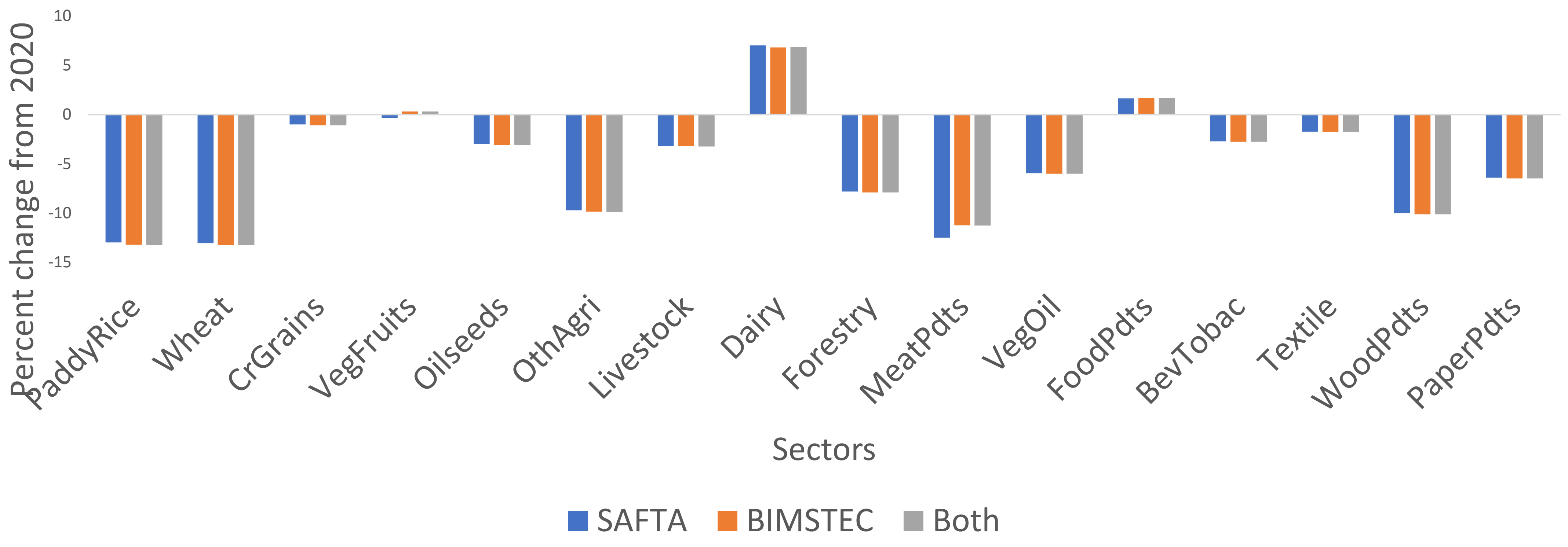
Key Findings

Figure 4. Impact on Industrial Supply of Commodities (Tariff and NTMs Removal)



Key Findings

Figure 5. Impact on Private Household Demand for Imports of Commodities (Tariff and NTMs Removal)



Conclusion

- GDP of Nepal increased under all three different scenarios
- Positive increase in trade balance for majority of sectors with lowest being the OthAgri sector in all three scenarios
- Nepal could benefit due to increased export, positive trade balance, and decreased import for a majority of commodities considered in the model
- This study could be a breakthrough for the policymakers of the country to strengthen its trade policies and revise the existing ones
- Nepal should look at feasible ways to implement the removal of tariffs and NTMs at its earliest convenience for making the country self-reliant need and economically prosperous

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