

Title: Economic Implications of Terminating the WTO Moratorium on Electronic Transmissions: A Focus on Audio-Visual and Digital Services

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Abstract:

Since 1998, the World Trade Organization (WTO) has maintained a moratorium on customs duties for electronic transmissions (ETs), fostering the rapid growth of global digital trade.

However, as the 2026 Ministerial Conference approaches, debates have intensified regarding the moratorium's permanent status versus its termination. This study evaluates the potential macroeconomic impact of removing the moratorium on eight key economies: Argentina, Brazil, India, Indonesia, Kenya, Nigeria, South Africa, and Thailand.

Using the Global Trade Analysis Project (GTAP) 12.0 multi-country Computable General Equilibrium (CGE) model, the research simulates two primary scenarios: the unilateral imposition of tariffs on digital service imports and the implementation of reciprocal tariffs by trading partners. The analysis focuses specifically on disaggregated sectors, including audio-visual, digital, and streaming services.

Findings indicate that the removal of the moratorium would lead to a decrease in GDP across all studied regions. Brazil and India are projected to experience the most significant absolute declines, with Brazil's GDP estimated to decrease by up to 0.24% (5.3 billion USD) and India's by 0.10% (3.9 billion USD) under reciprocal tariff conditions. Furthermore, the study identifies adverse effects on domestic output, trade balances, and employment, particularly impacting skilled labor in larger digital economies. While some nations view the termination of the moratorium as a means to generate customs revenue, this research demonstrates that the projected revenue gains are negligible compared to the broader economic losses. The study concludes that maintaining a duty-free regime for electronic transmissions is essential for global economic stability and continued growth in the digital services trade.

Keywords: WTO Moratorium, Electronic Transmissions, Audio-Visual Services, Digital Trade, GTAP Model, Macroeconomic Impact, Tariffs.

1. Introduction

Electronic transmissions (ETs) are online deliveries of ‘digitizable products and services’ such as music, printed matter/e-books, films, software packages and video games, etc. Electronic transmissions, with a particular focus on audio-visual and digital services, come with many advantages such as speed, efficiency in storing and retrieving, lower costs as compared to physical transmission and flexibility with respect to editing, updating and sharing with multiple parties. These are extensively used in almost all sectors of the economy, with some being banking, manufacturing, healthcare and retail sectors.

In order to encourage trade in ETs, in 1998, the World Trade Organisation (WTO) announced a two-year moratorium on the imposition of customs duties on electronic transmissions. Members were directed to make a commitment to such a measure.

This moratorium has been regularly renewed at subsequent Ministerial Conferences, but with division arising among the WTO members over the years. OECD countries, some developing nations, and China want a permanent status for the moratorium, while India, Indonesia, and South Africa are seeking its termination. These countries have concerns about the potential customs revenue that is lost due to the moratorium and the inability to impose import substitution policies in the digital industry.

However, if this moratorium is not continued due to lack of support in the upcoming 2026 WTO Ministerial conference, it may have serious economic implications for all countries involved and especially for Small and Medium Enterprises (SMEs) across the world associated with these services.

In this context, this report seeks to understand the impact of removing the moratorium on the following countries:

- Argentina
- Brazil
- Indonesia
- India
- Kenya
- Nigeria
- Thailand
- South Africa

The report evaluates the effects on GDP, output, exports, imports, inflation, and employment in these economies. The analysis specifically focuses on the audio-visual and digital services sectors.

2. Literature Review

This section presents a literature review on trade in digital, audio-visual services that can be electronically transmitted. The literature review is in two parts. Early literature looks at the determinants of trade in digital and audio-visual services and at the non-tariff barriers present. This is presented in the first part. The second looks at the impact of removing the moratorium and levying tariffs on the trade of such services.

Trade in Digital and Audio-Visual Services

Towse (2006) explores how cultural protection policies influence international trade in broadcasting and audiovisual services. The study highlights the inherent tension between liberalized trade objectives and national efforts to safeguard cultural identity. Using examples from Europe and Canada, Towse illustrates how content quotas, subsidies, and ownership restrictions are used to limit foreign media dominance, particularly from the United States. These policies are shown to reduce import penetration and shape trade flows by protecting domestic producers. However, the paper also acknowledges that such protective measures may limit market access for emerging exporters, including developing countries. Towse's work is especially relevant in the digital context, where traditional trade barriers are harder to enforce, and where algorithm-driven visibility replaces formal quotas. The study emphasises the need to balance cultural sovereignty with economic competitiveness in audiovisual trade, a challenge that remains central to policy debates today.

Felbermayr and Toubal (2010) built a gravity model to assess the role of cultural and virtual proximity in trade flows of audiovisual services. Their model predicted a country's audiovisual imports from another by considering factors such as physical distance, common language, shared legal systems, and cultural ties. A key innovation in their study was introducing *virtual proximity*, measured by the number of hyperlinks and shared web visits between two countries, as a predictor of trade. Their analysis showed that a one standard deviation increase in virtual proximity led to an approximately 80% increase in bilateral trade of cultural goods, underlining the strength of online connectedness in facilitating audiovisual trade.

Stephenson and Sauvé (2012) provide an in-depth examination of the role of services trade in shaping global and regional trade agreements, with particular emphasis on India and the European Union. While the paper primarily focuses on the broader services sector, including telecommunications, finance, education, and IT, it offers important context for understanding the position of audiovisual services in international trade negotiations. The authors highlight that sectors like audiovisual services often face non-tariff barriers, including content quotas, licensing restrictions, and regulatory protections tied to cultural preservation. This makes liberalization more complex than in other commercial services. They note that while India has become a leading exporter of IT and business process outsourcing services, its approach to liberalizing cultural and audiovisual services has remained cautious due to sensitivities around cultural identity and media sovereignty. Similarly, the European Union has often pushed for commitments in audiovisual services in its bilateral agreements but faces domestic resistance tied to cultural diversity concerns. Stephenson and Sauvé argue that trade frameworks such as GATS struggle to address the fast-changing nature of digital and cultural content flows, where audiovisual services are increasingly delivered online and across borders without physical presence. They call for new and adaptive policy approaches that can reconcile the commercial potential of digital audiovisual exports with national objectives around cultural policy and domestic content promotion. The paper contributes to the literature by positioning audiovisual trade as a policy frontier where the tensions between liberalization and cultural regulation are most visible, particularly in digitally evolving economies like India.

Hellmanzik and Schmitz (2015) explore how we can understand global trade in audiovisual services, such as movies and TV shows, through the lens of the gravity model. Their study aims to quantify how economic mass (GDP) and geographical distance influence bilateral trade in cultural goods. Using bilateral trade data for cultural products, they show that a doubling of GDP leads to a 40% increase in trade, while doubling distance reduces trade by 45%. The study confirms that larger economies tend to trade more with each

other, but greater physical distance remains a significant barrier. This reinforces the relevance of gravity-like patterns even in the trade of non-physical cultural services.

Hoofd (2017) critically examines how the audiovisual industry is situated within global trade frameworks, particularly through the lens of cultural protectionism vs. liberalisation. The paper challenges the commonly held assumption that global trade regimes uniformly push for open markets, showing instead how the audiovisual sector has consistently remained an exception. It focuses on trade negotiations under the General Agreement on Trade in Services (GATS) and bilateral free trade agreements (FTAs), arguing that liberalisation of audiovisual services has been met with strong resistance. Countries like France and Canada have defended their cultural industries using cultural exception clauses, which allow them to preserve national identity and promote local content production despite global pressures for free trade. Hoofd notes that the WTO has had limited success in liberalising the audiovisual sector due to widespread concerns about cultural homogenization, particularly from U.S.-produced content. From a trade perspective, the paper reveals a contradiction: while digital and audiovisual services have become increasingly tradable, governments still seek to regulate them with non-tariff barriers such as content quotas and subsidies. These barriers, Hoofd argues, are both cultural and economic, protect domestic creative industries but also reflect strategic industrial policy.

Impact of Tariffs on Trade in Electronic Transmissions

Whether to impose restrictions or not on digital transmissions has been a topic of discussion for some time now. Studies have tried to quantify the losses or gains that can come about as a result of such a measure.

A study by Banga (2019) identifies a list of 49 goods, using the HS classification, that can be traded digitally, estimates the total online trade in these goods, and looks at the impact of the moratorium on government revenues of WTO member countries. The study estimates total online trade in 3 steps as follows:

- First, the study estimates what physical imports of each of the 49 identified products was for the period 1998-2017.
- Second, it estimates what physical imports would have been for the period 2011-2017 if digitalisation had not occurred. It does this by applying the average annual growth rate of global imports of these products over the period 1998-2010.
- Third, it estimates total online imports as the difference between estimated physical imports and actual physical imports for the period 2011-2017.

Using the estimated imports and simple averages of Bound and MFN tariffs, the study calculates potential revenue loss from the moratorium, both globally and at the country level. It arrives at the conclusion that substantial revenues can be obtained by developing countries by imposing tariffs. The study also estimated that revenues gained by developing countries will be far more than what developed countries can make.

Depending on the type of tariff used, the study estimates that the potential tariff revenue loss to WTO's developing members (59 countries) in 2019 was between 5.2 billion USD and 10.1 billion USD due to the moratorium on electronic transmissions. WTO's Less Developed Country (LDC) members (31 countries) were estimated to have lost between 344 million USD and 1.5 billion USD. On the other hand, WTO's high-income country members (21 countries) lost only an estimated 289 million USD. The top five countries

which incurred the maximum tariff revenue loss from the Moratorium (calculated using Bound tariff rates) were Mexico followed by Thailand, Nigeria, India and China. It was estimated that developing countries can generate 40 times more revenue by imposing custom duties on ET as compared to the developed countries. These estimates have been met with considerable debates over the years.

Makiyama and Gopalakrishnan (2019) argue that Banga (2019)'s estimates of revenue loss are flawed as it does not take into account the negative economic consequences of levying an import tax on ETs, which could lead to higher prices, lower consumption, reduced GDP and therefore reduced domestic tax revenue. Nor does it account for the significant enforcement and compliance costs involved in implementing electronic tariffs. Makiyama and Gopalakrishnan (2019) further believe that Banga (2019)'s estimate of the total value of digital trade has been overstated, leading to an over estimation of the loss of revenues due to the moratorium.

In order to provide a more holistic view of the impact of the moratorium, Makiyama and Gopalakrishnan (2019) use a Computable General Equilibrium (CGE) model, more specifically the GTAP model, which can capture the impact in GDP, welfare and employment caused by the imposed tariffs. India, Indonesia, South Africa and China are the countries for which this effect has been investigated. The study finds higher prices and lowered consumption in the importing country as a result of imposition of tariffs. Macroeconomic outlook is negative with lower GDP growth and shrinking tax revenues. The model estimates that India would lose 49 times more in GDP than it would generate in duty revenue, while the loss for Indonesia would be 160 times, for South Africa over 25 times and over seven times for China. The study recommends continuation of the duty-free regime on electronic transmissions.

Andrenelli and González (2019) also support the continuation of the moratorium by putting the loss into a different perspective. Using estimates of revenue loss calculated by other papers, they determined that revenue loss will only be 0.08%-0.23% of overall government revenue for developing countries, which is relatively low. The share of digitizable goods in total trade is also low at only 1.2%. They also argue that tariffs are an unstable source of revenue (as compared to GST/VAT), they are associated with lower output and productivity, and the burden of payment usually falls on domestic consumers rather than foreign firms. They further list the following benefits of being able to trade electronically.

- Being able to digitally trade goods will reduce transport costs, which can be as high as 20-30% of overall trade costs.
- If all potentially digitizable goods were traded electronically, the increase in consumer welfare would outweigh costs associated with revenue loss by USD 73 million.
- The use of foreign business services, which are increasingly digitally delivered, is important to improve export competitiveness of domestic firms.
- Digitalization also helps more firms to become exporters, especially in developing countries. The study shows that firms in developing countries that use a webpage or use the internet for digital delivery, have a higher propensity to become exporters than those that do not.

The imposition of tariffs on intangible digital products was found to have a negative impact on Indonesia's GDP, household income, and employment, as reported by the Indonesia Services Dialogue Council (2019). Using a CGE model, the study examined the effects of applying 3%, 5%, and 10% tariff rates on ETs. It concluded that the total economic loss from levying such tariffs would outweigh the potential revenue gain. The impact was especially pronounced for MSMEs and tech startups, which rely on digital goods as

production inputs. Additionally, initiatives such as the Indonesian Government's "Go Digital" campaign, launched in 2017, are also likely to be adversely affected if there are restrictions on imports.

The impact of the moratorium on the revenues of the Philippines' government has been evaluated by Serafica, Quimba and Cuenca (2020) using a methodology similar to Banga (2019). Using the average MFN tariff rate and the bound tariff rate, it was estimated that, as a result of the moratorium, the loss in government revenues was 0.10 per cent and 0.65 per cent, respectively. However, the authors also argue that technical difficulties of implementing and enforcing customs duties on electronic transmissions, as well as policy constraints such as existing laws and international commitments of the Philippines, could limit the actual amount of revenues realised from the tariffs. Further, barriers to cross-border data flows, such as tariffs, could negatively impact data-intensive sectors such as the Information Technology - Business Process Management (IT-BPM) sector, which is the main driver of services trade in the country. Other industries in the economy, and especially SMEs, also rely on data from other countries to support operations, conduct research and to find international trade opportunities. As such, tariffs on electronic transmissions could have economy-wide impacts and negatively affect productivity in non-digital sectors as well, which puts a strong case for the continuation of the moratorium.

Studies such as Narayanan et al (2023a¹, 2023b², 2024a³, 2024b⁴, 2024c⁵) look at the extent to which cross border digital transmissions help MSMEs in India, Indonesia, South Africa, Nigeria and Thailand. Using an econometric panel data regression analysis, the papers estimates that increasing digital imports will have a positive impact on MSME GDP (output), employment, the number of MSMEs, labour productivity, MSME size measured by employment and MSME size measured by output. However, the drawback of using an econometric model is that it does not provide a holistic view of the economy and cannot answer the hypothetical question of the impact of the removal of the moratorium effectively.

Tariffs increase the price of the service at the time of consumption. Miyazaki et al. (2009) find that factors that limit consumption, such as price, can lead to higher piracy-related activity.

Piracy, in turn, can have other negative impacts. Telang and Waldfogel (2018) study the impact of movie piracy on Bollywood. They opine that piracy has had a negative impact on the production of new content. The study uses different time periods to arrive at this conclusion. The time period between 1985 and 2000, when VCRs and cable television were present in abundance, resulted in more opportunities for consuming unpaid content.

An EY (2024) article based on an EY Report puts the loss of media and entertainment revenue at rupees 224 billion in 2023 on account of piracy. The article points out that about half of Indian content consumers access pirated sources. Streaming was determined to be the largest source of pirated content. In addition to revenue loss, there is also a loss of GST revenue of about rupees 43 billion.

¹ <https://igpp.in/wp-content/uploads/2023/06/The-Impact-of-Cross-Border-Digital-Transmissions-on-the-MSME-Sector-in-India-and-the-Benefits-of-the-WTO-E-Commerce-Moratorium-.pdf>

² <https://iit.adelaide.edu.au/ua/media/2379/ua31216-indonesian-study-working-paper-15.pdf>

³ https://www.wto.org/english/thewto_e/minist_e/mc13_e/ngo_position_papers_e/msmes_southafrica.pdf

⁴ https://www.wto.org/english/thewto_e/minist_e/mc13_e/ngo_position_papers_e/msmes_nigeria.pdf

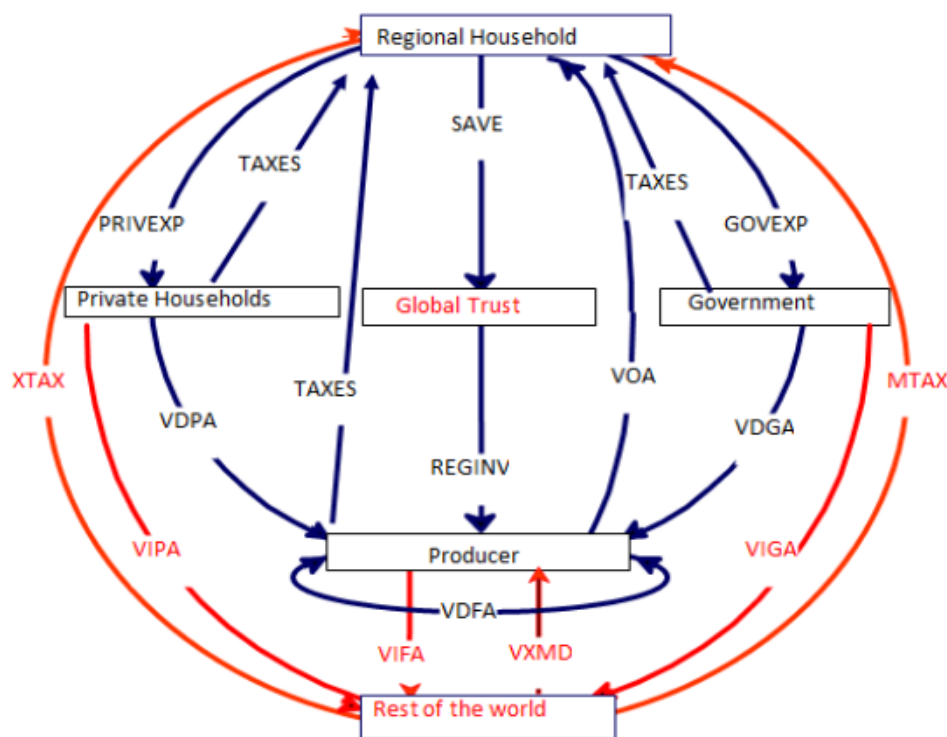
⁵ [wto.org/english/thewto_e/minist_e/mc13_e/ngo_position_papers_e/msmes_thailand.pdf](https://www.wto.org/english/thewto_e/minist_e/mc13_e/ngo_position_papers_e/msmes_thailand.pdf)

3. Methodology

The study employs the standard Global Trade Analysis Project (GTAP) model, which is a multi-country, multi-sector Computable General Equilibrium (CGE) model, accounting for linkages between economic agents, including households, governments, and the rest of the world. The GTAP model is a holistic model of the different economic interactions that happen across different countries and sectors, in contrast to the gravity model, which is an econometric model that determines the magnitude of the trade relation between two countries. The GTAP model captures the impact on the different aspects of the economy, accounting for the fact that a change in one aspect can have cascading effects on other aspects. For example, if a tariff is imposed on the import of audiovisual services from one country, one can expect a decrease in imports from it, which will reduce the inputs into sectors that utilise these services. This reduction can be compensated for by imports from other countries, or some of it may be compensated for by domestic production, depending on other economic conditions, such as factors that are available. The model quantifies these changes across all economic interactions.

A simplified accounting structure of the GTAP model is summarised in Figure 1.

Figure 1: GTAP model



In the GTAP model, the regional household receives factor payments (VOA) from different agents, including private households, firms, and the government, for the supply of factors like land, labour, and capital. The residual that remains after households' expenditure on private consumption and government consumption goes to savings. The model is based on the Cobb-Douglas utility function that preserves the share of private consumption and government consumption. Global trust accumulates savings and then distributes them across different regions as investments, and this happens based on the rate of returns.

This becomes a capital input to the firms that also use factor inputs (VOA) and intermediate inputs from domestic (VDFA) as well as imported (VIFA) to produce the output. This output caters to the consumption demand of private households (VDPA), and the government (VDGA) and serves as an intermediate input to firms (VDFA). The private household and the governments can consume from the domestic output (VDPA/VDGA) as well as from imports (VIPA/VIGA), the consumption of which is governed by the Armington assumption. The international transactions in the figure are marked in red, and the domestic transactions are differentiated in blue.

On the production side, the model assumes perfect competition and constant returns to scale. The production for every sector, every region in the model is identified and represented by a Constant Elasticity of Substitution (CES) function. The model also works on the basis of Armington assumption; each firm employs a CES composite of domestic and imported intermediate goods in fixed proportions with endowment factors or value-added commodities like land, labor, capital, and natural resources, etc.

3.1. Database Preparation

For our analysis, we have used the GTAP 12.0 database. The GTAP 12.0 database is a widely recognised and utilised dataset in the field of global economic analysis. Researchers, policymakers, and analysts across the world rely on this database for conducting economic studies and policy evaluations. The database offers comprehensive coverage, a rigorous methodology, and tracks both direct and indirect global economic linkages. The latest available database is referenced to the year 2019, and it covers data for 160 countries and regions and 65 sectors. The GTAP database is built from the Input-Output (I-O) Tables of individual countries and regions, as well as from various international data sources. Coming to the macroeconomic data, GDP is extracted from the World Development Indicator (WDI) developed by the World Bank. Considering the trade data, the merchandise trade data is extracted from the UN Commodity Trade Statistics, non-margin services from the IMF balance of trade statistics, OECD, and EUROSTAT.

Table 1: Macro-economic data sources for GTAP

Parameter	Source
2023 GDP	World Bank
2024-2039 growth estimate	IMF estimates
GTAP data sources	
Trade data	UN Commodity Trade Statistics
Consumption, Investment, Gov Expenditure	WDI, World Bank
Agricultural I-O	UN FAO's Supply Utilization Statistics
Tariff data	Market Access Maps
Labour data	International Labour Organisation
Energy data	International Energy Agency

Based on the objective of the study we have aggregated 160 countries/regions into 10 countries/regions. We retain all 65 sectors for this analysis. To ensure that the economic data used in our analysis aligns with the relevant year of interest, we updated the database to the year 2023. To do this, we used the GDP data from the World Bank for the year 2023. To adjust and rebalance the database, we use GTAP Adjust, a

program from CoPS (Centre for Policy Studies). Similarly, we also adjust the trade indicators by using the UNCOMTrade data.

In the context of this project, a specific emphasis is placed on disaggregating streaming, digital services and audio-visual services from aggregated GTAP sectors. This disaggregation is essential for accurately assessing the impact of tariffs on these specific segments. The communication (cmn), recreational services (ros) and other business services (obs) sectors in GTAP encompass these.

To disaggregate the recreational services (ros) sector, we utilise the SPLITCOM program developed by COPS⁶, which disaggregates GTAP sectors based on user-defined value shares. These shares are calculated based on data for output, exports and imports, depending on what is available and reliable. For this study, we use Input-Output data from the OECD database⁷, where production values for audio-visual services under “J58T60”, both at the country and global levels⁸. These values are used to calculate the respective shares of audio-visual services within recreational and other services (ros) as defined in GTAP. The resulting shares from these data sources are then input into the SPLITCOM program to split the necessary GTAP sectors required for the study accurately. The share of Audio-visual services in other recreational services is calculated using this method. Digital services component in other business services (obs) is calculated based on “J62_63” codes in the OECD Input-Output table⁹. Streaming services are part of the communication (cmn) sector in GTAP. Its share is calculated based on the revenue share of streaming services in total communication services. Since data is not readily available at a country level, the global average is taken to be the share. This comes to about 5.43 per cent¹⁰¹¹¹².

Individuals using the Internet (% of population) from World Development Indicators of the World Bank has been used as a proxy for the percentage of digital trade that might be happening in audio audiovisual and digital services sectors. This has been taken into consideration as the countries are at different levels of development. The values taken are listed in the appendix.

Also, it is expected that any tariff on digital transmissions will have a cascading effect on sectors that actively use them. The list of sectors that are expected to be impacted as a result is listed in the appendix. This effect has been captured as a proportional shock, based on the usage of digital media, in such sectors. Simple Average MFN rates, for the latest available years, for the digitizable goods as per Banga (2019), for individual countries as well as the world, have been taken as the applicable tariff for individual and reciprocal tariffs, respectively. The MFN rates applied are also listed in the appendix.

The following two scenarios are analysed to determine the impact of non-continuance of the WTO moratorium on audiovisual and digital services:

⁶ <https://www.copsmodels.com/msplitcom.htm>

⁷ <https://www.oecd.org/en/data/datasets/inter-country-input-output-tables.html>

⁸ Shares in appendix

⁹ Shares in appendix

¹⁰ <https://stockanalysis.com/stocks/sector/communication-services/>

¹¹ <https://www.cognitivemarketresearch.com/streaming-services-market-report>

¹² <https://www.precedenceresearch.com/telecommunication-market>

Scenario 1 – Imposing tariffs on Audio Visual, Digital and Streaming service imports

In this scenario, each country imposes tariffs on its imports of audiovisual, digital, and streaming services without any reciprocal tariffs from other countries. This will capture the effects of tariffs when they are limited in nature. The tariff rate applied is the simple average MFN rate across digitizable goods for the countries of study.

Scenario 2 - Reciprocal Tariffs on Audio Visual, Digital and Streaming services imports imposed by other countries

In this scenario, countries retaliate by imposing a reciprocal tariff on imports of audio visual, digital, and streaming services from the countries of study. The global average MFN rate across all countries for digitizable goods is applied uniformly for all countries as the reciprocal tariff.

4. Results and Discussion

4.1. Scenario 1: Imposing tariffs on Audio Visual, Digital and Streaming service imports

In this scenario, the GDP of all the countries are expected to decrease as a result of tariffs imposed on digital and audio-visual services imports in contravention of the existing moratorium, as shown in *Table 2* and *Figure 2*.

Brazil shows the largest decrease among the countries in this study. The country's GDP is projected to decrease by 0.16% (3.5 billion USD). This loss is largely on account of a large decrease in consumption and investment for Brazil. India is also expected to be impacted adversely by tariff imposition on digital and audio-visual services, as seen from the fact that its GDP declines by 1.28 billion USD or 0.03%, this being largely on account of changes in trade. Correspondingly, the GDP of Argentina, an upper-middle-income country, declines by 0.04% or by 236.69 million USD owing to the imposition of tariffs. Kenya's GDP declines the least by 5.88 million USD or 0.01%.

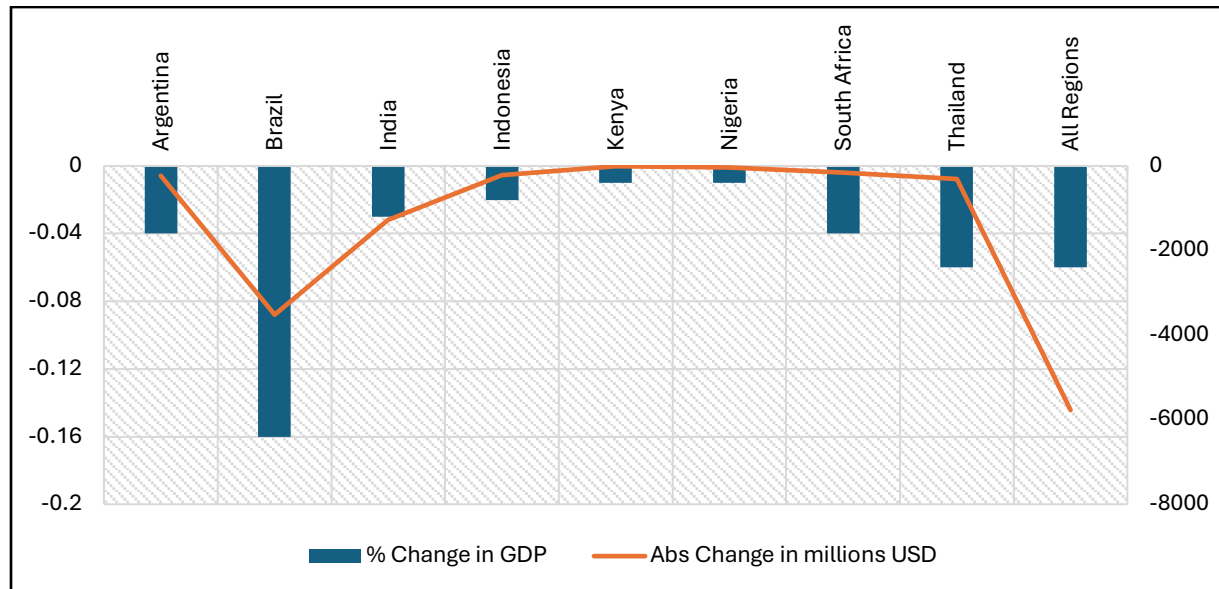
Countries such as Nigeria and Kenya, which are less developed as compared to others, are less impacted. Due to the imposition of tariffs, countries with a higher share of global trade with respect to audiovisual services and digital services, along with a higher GDP base value, experience a larger decline in GDP.

Table 2: GDP changes for different countries

Region	% Change	Abs Change in million USD
Argentina	-0.04	-236.69
Brazil	-0.16	-3509.25
India	-0.03	-1282.25
Indonesia	-0.02	-221.63
Kenya	-0.01	-5.88
Nigeria	-0.01	-37.34
South Africa	-0.04	-161.06

Thailand	-0.06	-315.00
All Regions	-0.06	-5769.10

Figure 2: Change in GDP



The macroeconomic impact as a result of the imposition of tariffs is presented in the next set of tables.

The impact on output changes follows a similar pattern to that of GDP changes, as shown in *Table 3*. The table below summarises the impact on domestic production of the economies. This metric analyses the change in real domestic production in comparison to the previous table.

The output of Argentina declines by 482.37 million USD and by 0.05% in relative terms. Similarly, Brazil's domestic production declines by 4.73 billion USD or 0.13%. Brazil is the country with the highest decline in GDP as well as output, both in absolute and relative terms. India, on the other hand, has an output decline of USD 4.06 billion or 0.06%. Indonesia's production declines by 0.02% or 506 million USD. Furthermore, Kenya's domestic production falls the least, similar to GDP changes, by 44.92 million USD or 0.02%. This is attributable to the fact that its digital service exports and imports are already quite insubstantial, as it is a lower-middle-income country with a limited export-to-GDP share.

Also, comparing the table on change in GDP and output demonstrates that Brazil and India witness a significant decline in domestic production, but India's GDP declines to a lesser extent compared to Brazil. It is indicative of the fact that the decline in production is also accompanied by a widening trade deficit or an increasing gap between imports and exports.

Table 3: Total Output Changes for different regions

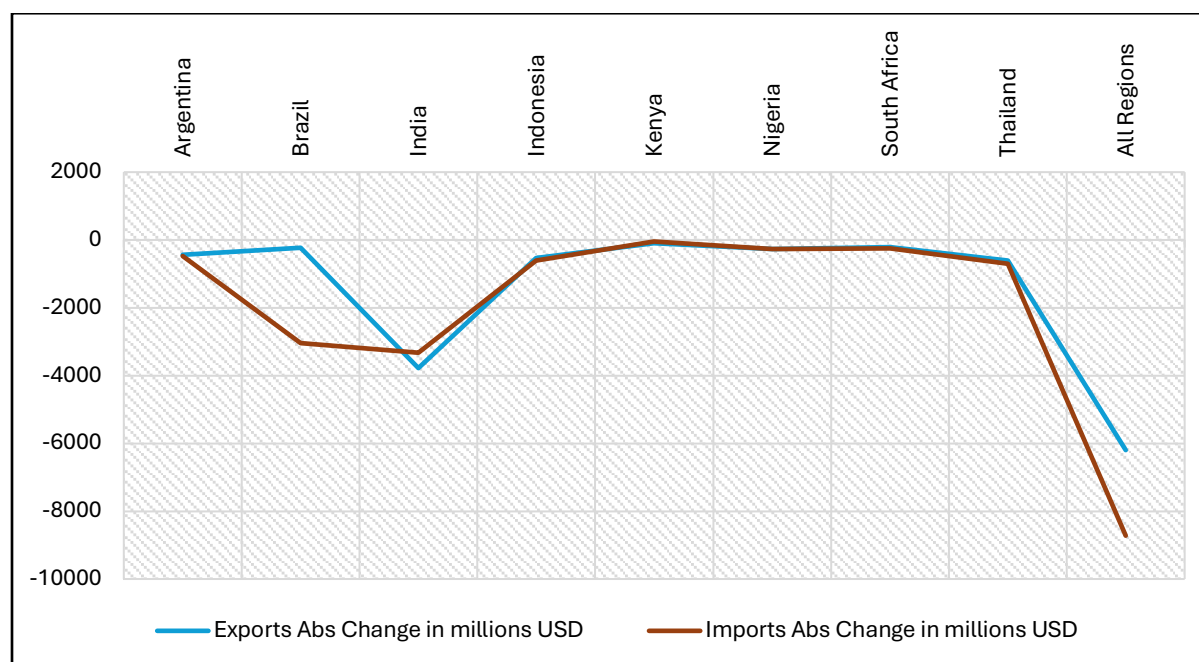
Region	% Change	Abs Change in millions USD
Argentina	-0.05	-482.37
Brazil	-0.13	-4732.28
India	-0.06	-4060.64
Indonesia	-0.02	-506.46
Kenya	-0.02	-44.92
Nigeria	-0.02	-152.03
South Africa	-0.05	-434.20
Thailand	-0.08	-927.98
All Regions	-0.07	-11340.88

With respect to trade, the imports and exports of all countries appear to decline in the case of the application of tariffs on digital and audio-visual services, as can be inferred from *Table 4* and *Figure 3*. India is the most impacted in terms of exports (decline of 3786.81 million USD or 0.91%) as well as imports (decline of 3326.78 million USD or 0.50%). Kenya is the least impacted in terms of exports (decline of 96.12 million USD) and imports (decline of 45.62 million USD, 0.25%). The trade balance of Brazil, Indonesia, South Africa, Thailand and Argentina increases while those of other countries decrease. The trade balances remain positive for most of these countries, mainly because there is a reduction in exports and imports. Further imports decrease more than exports for these countries.

Table 4: Total Import and Export Changes in different regions

Region	Exports		Imports	
	% Change	Abs Change in millions USD	% Change	Abs Change in millions USD
Argentina	-0.56	-445.00	-0.83	-480.96
Brazil	-0.07	-231.69	-1.15	-3045.28
India	-0.91	-3786.81	-0.50	-3326.78
Indonesia	-0.20	-539.55	-0.28	-614.33
Kenya	-1.46	-96.12	-0.25	-45.62
Nigeria	-0.40	-272.30	-0.41	-262.27
South Africa	-0.20	-214.44	-0.25	-242.86
Thailand	-0.21	-611.66	-0.24	-703.02
All Regions	-0.39	-6197.55	-0.52	-8721.10

Figure 3: Total Import and Export Changes



The impact on audiovisual, digital and streaming services as a result of imposing tariffs is presented in the next set of tables.

Total Exports of Audio-Visual, digital and streaming services show negative changes for all countries in absolute terms (*Table 5*). India has the highest decrease among the regions in absolute terms, with the change being far more than in other regions. Nigeria is impacted the most in percentage terms. The overall total impact is still less than 100 million USD.

Table 5: Total Export Changes in Audio Visual, Digital and Streaming Services Sectors

Region	% Change	Abs Change in million USD
Argentina	-1.38	-6.94
Brazil	-0.35	-5.57
India	-0.96	-72.28
Indonesia	-0.89	-4.45
Kenya	-1.39	-0.20
Nigeria	-1.69	-2.96
South Africa	-0.01	-2.22
Thailand	-0.54	-3.69
All Regions	-0.25	-98.30

As expected, imports are impacted more in absolute terms than exports (*Table 6*

Table). All countries are impacted negatively, i.e. the imports decrease as a result of tariffs. India and Brazil show a large negative change in imports as compared to other countries. In percentage terms, Brazil is the most negatively impacted. South Africa is the least impacted both in percentage terms.

Table 6: Total Import Changes in Audio Visual, Digital and Streaming Services Sectors

Region	% Change	Abs Change in million USD
Argentina	-12.46	-55.31
Brazil	-13.43	-318.91
India	-10.49	-317.20
Indonesia	-5.7	-52.56
Kenya	-8.62	-5.52
Nigeria	-7.76	-48.03
South Africa	-0.06	-15.98
Thailand	-3.96	-21.75
All Regions	-2.37	-835.26

The price changes (*Table 7*) in different sectors are shown with prices largely increasing in all of the countries in each of the sectors. An inflationary effect is seen in all sectors as a result of tariffs.

Table 7: Price change in Audio Visual, Digital and Streaming Services Sectors

Region	Audio Visual Services	Digital Services	Streaming Services
Argentina	0.16	0.16	0.02
Brazil	0.04	0.01	0.05
India	0.22	0.16	0.02
Indonesia	0.03	0.03	0.01
Kenya	0.32	0.32	0.02
Nigeria	0.34	0.31	0.04
South Africa	0.07	0.05	~0
Thailand	0.01	~0.00	~0

Table 8 lists the inflationary impact on different economies. All the countries are expected to see a price inflation, with Kenya (0.31%) and Nigeria (0.29%) having higher increases as compared to others. Brazil is estimated to have a neutral effect, and India is expected to have similar price inflation.

Table 8: Inflationary changes in different regions

Region	Inflationary change in %
Argentina	0.17
Brazil	0.00
India	0.15
Indonesia	0.04
Kenya	0.31
Nigeria	0.29
South Africa	0.06
Thailand	0.06

Unskilled employment is expected to decrease in all countries (*Table Table*). India and Brazil are expected to see a significant reduction in their unskilled labour, with other countries having a far lesser reduction.

In terms of percentage, the decrease ranges from -0.21% to 0%, with India and Kenya being at the two ends.

Table 9: Unskilled employment changes

Region	% change	Abs change in 000s
Argentina	-0.01	-8.58
Brazil	-0.13	-128.21
India	-0.21	-207.54
Indonesia	-0.04	-41.52
Kenya	~0.00	-3.22
Nigeria	-0.02	-24.90
South Africa	-0.01	-8.34
Thailand	-0.03	-33.75
All Regions	-0.09	-456.07

Skilled employment changes exhibit a different pattern compared to unskilled employment changes. The results in

Table show a change from approx. -93.4 thousand people to 9.6 thousand people. Brazil, followed by India, has shown a significant reduction in employment, while Kenya and Nigeria are estimated to have an increase. On a percentage basis, the employment changes are in the range of -0.09 to ~0.

Table 10: Skilled employment changes

Region	% change	Abs change in 000s
Argentina	~0.00	-3.50
Brazil	-0.09	-93.44
India	-0.07	-65.92
Indonesia	-0.01	-6.38
Kenya	~0.00	1.51
Nigeria	0.01	9.62
South Africa	-0.01	-7.61
Thailand	-0.02	-21.17
All Regions	-0.06	-186.89

It is clear that the imposed tariffs have a significant negative effect on the macroeconomic variables for most regions in the study.

4.2. Scenario 2: Reciprocal Tariffs on Audio Visual, Digital and Streaming service imports

Reciprocal tariffs, like unilateral tariffs, have historically been found to impede economic growth. The GDP of all the countries are expected to decrease as a result of reciprocal tariffs imposed on digital and audio-visual services imports by other countries in retaliation for these eight countries imposing tariffs on these

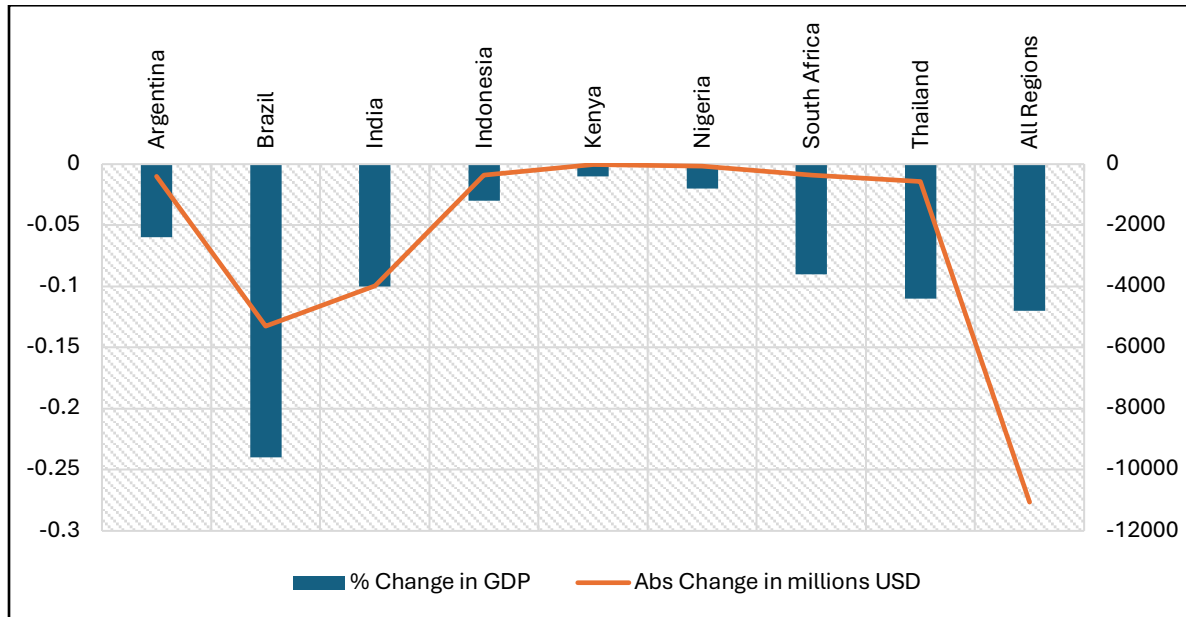
sectors. Additionally, the decline in GDP is more marked in scenario 2 compared to scenario 1, for all eight countries, because of the retaliatory tariffs imposed by other countries. An important detail is that while imposition of retaliatory tariffs on digital service exports by other countries, as envisaged in scenario 2 is more reflective of practical realities, it is also possible that other countries retaliate by imposing reciprocal tariffs on more sectors and/or by imposing higher tariffs on digital and audio-visual service exports compared to the tariffs imposed by these eight countries. So, all things considered, this scenario is just a conservative estimate of the minimum impact that these reciprocal tariffs will have on the economies of the eight countries. In the real world, it is possible that the consequences of such a policy could have a stronger impact on the economic variables, such as GDP, sectoral output, employment, etc.

As we can see in (Table 2, Figure 4) Brazil's GDP is expected to decline by 0.24 per cent, i.e. a decline of 5.29 billion USD. Brazil's GDP decline is largely on account of a decrease in consumption and investment. India is also expected to be impacted adversely by mutual tariff imposition on digital services and audio-visual services, as seen from the fact that its GDP declines by 3.98 billion USD or 0.1%. This decline is also mainly steered by the decline in consumption caused by the imposition of tariffs. The GDP of Argentina, an upper-middle-income country, declines by 0.06% or by 400 million USD owing to the imposition of reciprocal tariffs. Kenya's GDP declines by 13.16 million USD or 0.01%. This country experiences the smallest impact in both absolute and percentage terms. As shown in Scenario 1, low-income countries are minimally affected by tariff measures due to their comparatively small service trade base values. A significant amount of GDP (11058.59 million USD) is wiped out from these regions.

Table 2: GDP Changes for different regions with reciprocal tariffs

Region	% Change	Abs Change in millions USD
Argentina	-0.06	-407.56
Brazil	-0.24	-5299.50
India	-0.10	-3982.00
Indonesia	-0.03	-366.50
Kenya	-0.01	-13.16
Nigeria	-0.02	-73.38
South Africa	-0.09	-358.44
Thailand	-0.11	-558.06
All Regions	-0.12	-11058.59

Figure 4: Change in GDP



The macroeconomic impact when the reciprocal tariff is applied is shown in the next set of tables. The *Table 12* below summarises the impact on output.

In this second scenario, the domestic production in all eight countries declines more steeply compared to the previous scenario, where the tariffs were unilaterally applied. The extent of substitution of exports by demand for domestic goods is surpassed by the degree of decline in demand from foreign countries for digital services & this is why domestic production is declining. Also, comparing the table on GDP and output changes demonstrates that Brazil and India witness a decline in domestic production of 0.16% and 0.07% respectively, while their GDP on the whole declines more acutely at 0.24% (Brazil's GDP) and 0.10% (India's GDP). It is indicative of the fact that the decline in production is also accompanied by a widening trade deficit or an increasing gap between imports and exports.

The output from these regions combined decreases by 14250.59 million USD, which is more as compared to scenario 1.

Table 12: Output Changes for different regions with reciprocal tariffs

Region	% Change	Abs Change in million USD
Argentina	-0.06	-548.39
Brazil	-0.16	-5943.52
India	-0.07	-4974.42
Indonesia	-0.02	-632.66
Kenya	-0.02	-44.09
Nigeria	-0.03	-179.60
South Africa	-0.08	-732.61
Thailand	-0.11	-1195.30
All Regions	-0.08	-14250.59

The output changes in the audiovisual, digital and streaming services sectors are shown in *Table 13*. Most countries are expected to experience a decrease in total output. India is expected to witness a considerable decrease of 801.69 million USD, with Brazil, Argentina, Thailand and South Africa also showing a decrease. Output decrease is considerable when reciprocal tariffs are imposed. Kenya and Nigeria are expected to increase their outputs in these sectors.

Table 13: Output changes in Audio Visual, Digital and Streaming Services Sectors with reciprocal tariffs

Region	% Change	Abs Change in million USD
Argentina	-0.13	-29.87
Brazil	-0.04	-27.37
India	-1.15	-801.69
Indonesia	-0.08	-28.94
Kenya	0.19	3.31
Nigeria	0.15	23.95
South Africa	-0.21	-60.34
Thailand	-0.74	-109.52
All Regions	-0.41	-1030.46

The following table (*Table 14, Figure 5*) shows the imports and exports for the countries in the study. Essentially, the imports and exports of all countries appear to decline in the case of the application of reciprocal tariffs on digital services. The decrease in exports is more than the decrease in imports for Kenya. A total trade surplus of 7937.42 million USD is estimated for the regions in total, with imports decreasing to a larger extent than exports. Kenya, being a lower-middle-income country, is not an import-driven economy.

Table 14: Total Import and Export Changes in different regions with reciprocal tariffs

Region	Exports		Imports	
	% Change	Abs Change in millions USD	% Change	Abs Change in millions USD
Argentina	-0.63	-505.08	-1.06	-623.55
Brazil	-0.10	-340.69	-1.50	-4019.32
India	-0.86	-3756.59	-0.96	-6428.26
Indonesia	-0.24	-639.62	-0.39	-864.29
Kenya	-1.54	-103.66	-0.34	-63.50
Nigeria	-0.46	-313.13	-0.54	-348.58
South Africa	-0.24	-267.89	-0.46	-451.62
Thailand	-0.23	-701.22	-0.37	-1084.82
All Regions	-0.82	-5946.51	-0.37	-13883.93

Figure 5: Total Import and Export Changes with reciprocal tariffs

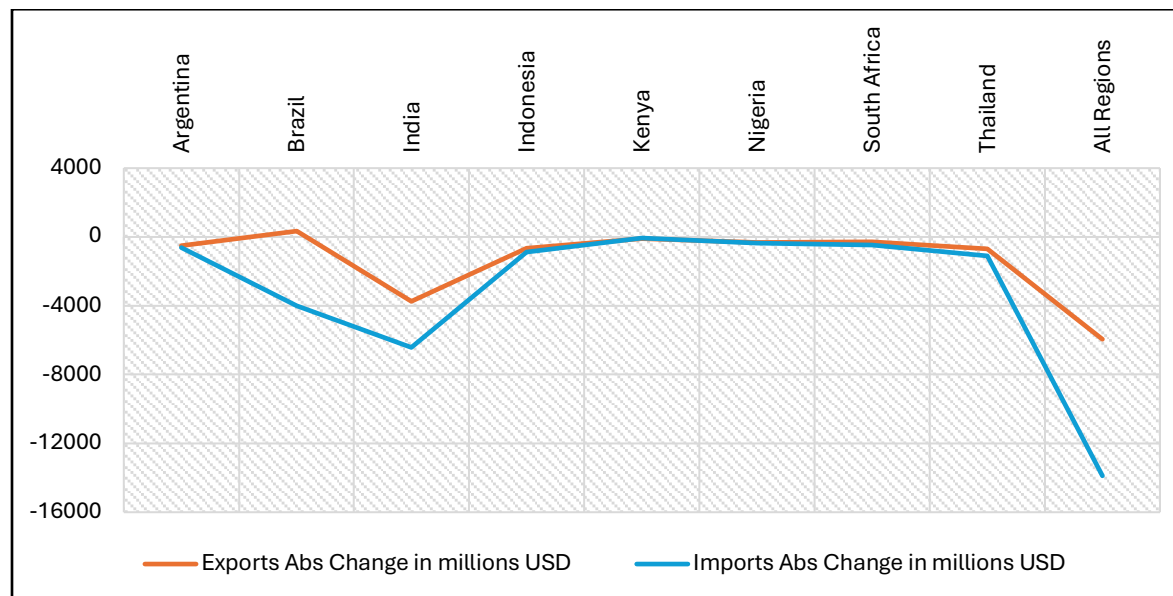


Table demonstrates the export changes in the audio-visual, digital and streaming services sectors. The decrease in exports is much greater when reciprocal tariffs are in place. Exports of all countries decrease in this scenario. India is expected to be significantly impacted with a decrease of 955.49 million in its exports. South Africa's exports decrease the least in percentage terms, while Kenya's decreases the least in absolute terms.

Table 15: Total Export Changes in Audio Visual, Digital and Streaming Services Sectors with reciprocal tariffs

Region	% Change	Abs Change in million USD
Argentina	-13.63	-68.52
Brazil	-13.72	-218.05
India	-12.71	-955.49
Indonesia	-13.8	-68.98
Kenya	-15.22	-2.18
Nigeria	-15.02	-26.37
South Africa	-0.18	-51.18
Thailand	-14.2	-97.13
All Regions	-3.79	-1487.91

The import changes in Table 16 show that they are less impacted than exports. All countries' imports are negatively impacted in this scenario. The decline varies from 5.54 million USD for Kenya to 344.88 million USD for India. In terms of percentage, the variation is from a decline of 0.28 % for South Africa to a decline of 13.53% for Brazil, reflecting the size of the sector in these economies. India and Brazil are the two countries that are impacted significantly more than the others.

Table 16: Total Import Changes in Audio Visual, Digital and Streaming Services Sectors with reciprocal tariffs

Region	% Change	Abs Change in million USD
Argentina	-12.75	-56.62
Brazil	-13.53	-321.26

India	-11.40	-344.88
Indonesia	-5.85	-53.95
Kenya	-8.66	-5.54
Nigeria	-7.97	-49.32
South Africa	-0.28	-76.62
Thailand	-4.30	-23.62
All Regions	-2.64	-931.82

Table shows a change in unskilled employment in the range of -0.41% to ~0%. India will have the maximum negative impact, followed by Nigeria, while South Africa will have a negligible impact. Overall, a 0.78 million workforce reduction is estimated in unskilled employment.

Table 17: Unskilled employment changes with reciprocal tariffs

Region	% change	Abs change in 000s
Argentina	-0.01	-13.45
Brazil	-0.19	-191.59
India	-0.41	-414.34
Indonesia	-0.06	-58.39
Kenya	~0.00	-4.23
Nigeria	-0.03	-30.20
South Africa	-0.02	-15.69
Thailand	-0.06	-55.12
All Regions	-0.14	-782.99

Even in skilled employment, India and Brazil are expected to see a significant drop. The decline in skilled employment ranges from 0.58 % to ~0% and 576 thousand people to about 220 people at different ends of the spectrum (

Table). Overall, skilled employment is reduced by 0.82 million in these regions, accounting for 0.23% of the existing workforce.

Table 18: Skilled employment changes with reciprocal tariffs

Region	% change	Abs change in 000s
Argentina	-0.01	-8.18
Brazil	-0.15	-148.55
India	-0.58	-575.79
Indonesia	-0.02	-23.85
Kenya	~0.00	-0.22
Nigeria	~0.00	-0.97
South Africa	-0.02	-18.33
Thailand	-0.05	-47.89
All Regions	-0.23	-823.34

A comparative analysis of macroeconomic variables between the two scenarios is shown in *Table 19*. As the numbers point out, the GDP and Exports decrease more with reciprocal tariffs, while imports decrease more when there are no reciprocal tariffs. This is mainly because in Scenario 2, there is an overall additional impact on exports due to the global tariff increase. The results show that overall, the total trade balance is impacted positively in both scenarios.

Table 19: Comparative summary between the two scenarios over all the regions for GDP, Total Exports and Total Imports

	GDP (Absolute Change in million USD)		Exports (Absolute Change in million USD)		Imports (Absolute Change in million USD)	
	Scenario 1	Scenario 2	Scenario 1	Scenario 2	Scenario 1	Scenario 2
Argentina	-236.69	-407.56	-445.00	-505.08	-480.96	-623.55
Brazil	-3509.25	-5299.50	-231.69	-340.69	-3045.28	-4019.32
India	-1282.25	-3982.00	-3786.81	-3756.59	-3326.78	-6428.26
Indonesia	-221.63	-366.50	-539.55	-639.62	-614.33	-864.29
Kenya	-5.88	-13.16	-96.12	-103.66	-45.62	-63.50
Nigeria	-37.34	-73.38	-272.30	-313.13	-262.27	-348.58
South Africa	-161.06	-358.44	-214.44	-267.89	-242.86	-451.62
Thailand	-315.00	-558.06	-611.66	-701.22	-703.02	-1084.82
All Regions	-5769.10	-14250.59	-6197.55	-5946.51	-8721.10	-13883.93

As can be seen from

Table 20, the proportion of skilled to unskilled employment changes in scenario 2 is more than in scenario 1. Unskilled employment changes between scenario 2 and scenario 1 are less than the skilled employment changes between them, indicating that skilled employment has changed relatively more compared to the other, with it surpassing unskilled employment changes in scenario 2. While skilled employment is negatively impacted in both scenarios, reciprocal tariffs induce a much larger change in skilled employment, indicating that as tariffs impact globally, the service sector gets impacted adversely, leading to an increase in skilled labour reduction.

Table 20: Comparative summary between the two scenarios over all the regions for Skilled and Unskilled employment

	Unskilled (in 000s)		Skilled (in 000s)	
	Scenario 1	Scenario 2	Scenario 1	Scenario 2
Argentina	-8.58	-13.45	-1.29	-8.18
Brazil	-128.21	-191.59	-3.50	-148.55
India	-207.54	-414.34	-65.92	-575.79
Indonesia	-41.52	-58.39	-6.38	-23.85
Kenya	-3.22	-4.23	9.62	0.22
Nigeria	-24.90	-30.20	-93.44	-0.97
South Africa	-8.34	-15.69	1.51	-18.33
Thailand	-33.75	-55.12	-21.17	-47.89
All Regions	-456.07	-782.99	-186.89	-823.34

TablTabl looks at the estimated revenue each country can expect from levying a unilateral tariff on the imports of streaming and audio-visual services. The revenue numbers are calculated on the current imports before the application of tariffs. While India is expected to get the most revenue and Kenya the least as a result of the imposition of tariffs, the estimated revenues that will be generated from imposing tariffs are relatively small when compared to the overall negative impact on the economy.

Table 21: Estimated revenue from imposition of tariffs on audiovisual, digital and streaming services

Region	Tariff Revenue in million USD
Argentina	0.43
Brazil	14.66
India	28.36
Indonesia	1.11
Kenya	0.06
Nigeria	0.78
South Africa	0.13
Thailand	0.47
All Regions	46.00

5. Conclusion

This study analysed the impact of tariffs on audio-visual services and digital services, along with a cascading impact that can occur on other sectors due to the change in economic outlook. This study analysed two scenarios in which, in the first scenario, each country unilaterally imposes tariffs on its imports, while in the second scenario, other countries retaliated with a reciprocal tariff on imports from the countries of study.

The clear finding that comes out from each of the scenarios is that imposing of tariffs, whether unilateral or reciprocal, is not beneficial to the economy as a whole. The magnitude of negative impact is larger in the latter case than in the former on different macroeconomic parameters.

India is negatively impacted to a larger extent as compared to other countries in many different economic spheres. Brazil is the other country that will have a larger negative impact. Kenya and Nigeria are relatively less impacted, which could be because they are comparatively less developed economies with a lesser digital presence.

The impact on audiovisual and digital services exports and imports is negative for all countries. Exports decrease more than imports when reciprocal tariffs are imposed, but this is not the case with unilateral tariffs.

The revenue that countries are expected to earn is only a small fraction of the economic losses that they will experience from the imposition of tariffs. Countries would be better off economically with no tariffs.

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7. Appendix

MFN Tariff Rates Applied

Region	Simple Average MFN rate
Argentina	9.93
Brazil	10.59
India	9.78
Indonesia	5
Kenya	14.94
Nigeria	12.33
South Africa	3.46
Thailand	5.01
World	6.97

Digital imports as a proportion of sectoral service imports

Region	% of population who have access to internet
Argentina	89.2
Brazil	84.2
India	72.18
Indonesia	69.2
Kenya	35
Nigeria	39.2
South Africa	75.7
Thailand	89.5
World	65.4

List of GTAP regions considered in this study

GTAP country//regions	Coverage
Indonesia	Indonesia
Thailand	Thailand
India	India
USA	USA
Argentina	Argentina
Brazil	Brazil
Nigeria	Nigeria
Kenya	Kenya

South Africa	South Africa
Rest of World	Australia, New Zealand, Rest of Oceania, China, Hong Kong SAR, Japan, Republic of Korea, Mongolia, Taiwan Province of China, Rest of East Asia, Brunei Darussalam, Cambodia, Lao People's Democratic Republic, Malaysia, Philippines, Singapore, Viet Nam, Rest of Southeast Asia, Afghanistan, Bangladesh, Nepal, Pakistan, Sri Lanka, Rest of South Asia, Canada, United States of America, Mexico, Rest of North America, Bolivia (Plurinational State of), Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela (Bolivarian Republic of), Rest of South America, Costa Rica, Guatemala, Honduras, Nicaragua, Panama, El Salvador, Rest of Central America, Dominican Republic, Haiti, Jamaica, Puerto Rico, Trinidad and Tobago, Caribbean, Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom of Great Britain, Switzerland, Norway, Kazakhstan, Kyrgyzstan, Tajikistan, Uzbekistan, Turkmenistan, Armenia, Azerbaijan, Georgia, Turkey, Rest of EFTA, Albania, Serbia, Belarus, Russian Federation, Ukraine, Rest of Eastern Europe, Rest of Europe, Rest of Former Soviet Union, Bahrain, Iran (Islamic Republic of), Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates, Rest of Western Asia, Algeria, Egypt, Morocco, Tunisia, Rest of North Africa, Benin, Burkina Faso, Cameroon, Côte d'Ivoire, Ghana, Guinea, Mali, Mauritania, Niger, Senegal, Togo, Rest of Western Africa, Central African Republic, Chad, Congo, Democratic Republic of the Congo, Equatorial Guinea, Gabon, South-Central Africa, Comoros, Ethiopia, Madagascar, Malawi, Mauritius, Mozambique, Rwanda, Sudan, United Republic of Tanzania, Uganda, Zambia, Zimbabwe, Rest of Eastern Africa, Botswana, Eswatini, Namibia, Rest of Southern African Customs Union, Rest of the World.

Share of Audio-Visual in the GTAP sector of Recreational Services

Country	Exports		Imports		Production	
	Audio-visual	Other Recreational	Audio-visual	Other Recreational	Audio-visual	Other Recreational
World	0.87	99.13	1.05	98.95	15.00	85.00
Argentina	1.80	98.20	3.78	96.22	13.11	86.89
Brazil	1.15	98.85	0.34	99.66	4.50	95.50
India	0.49	99.51	0.54	99.46	1.69	98.31
Indonesia	0.87	99.13	1.05	98.95	8.83	91.17
Kenya	2.25	97.75	1.05	98.95	15.00	85.00
Nigeria	0.87	99.13	1.11	98.89	30.34	69.66

South Africa	2.79	97.21	1.37	98.63	1.86	98.14
Thailand	0.87	99.13	1.05	98.95	16.68	83.32
United States	2.47	97.53	3.99	96.01	11.34	88.66

Share of Digital Services in GTAP sector of Other Business Services

	Exports		Imports		Production	
Country	Digital services	Rest of Other Business services	Digital services	Rest of Other Business services	Digital services	Rest of Other Business services
World	54.11	45.89	49.44	50.56	5.86	94.14
Argentina	44.15	55.85	39.28	60.72	4.23	95.77
Brazil	49.99	50.01	51.02	48.98	6.92	93.08
India	74.11	25.89	87.23	12.77	0.06	99.94
Indonesia	29.39	70.61	47.51	52.49	8.35	91.65
Kenya	32.77	67.23	45.11	54.89	5.86	94.14
Nigeria	30.62	69.38	27.04	72.96	0.07	99.93
South Africa	43.97	56.03	43.88	56.12	9.37	90.63
Thailand	30.15	69.85	46.57	53.43	3.09	96.91
United States	64.48	35.52	52.58	47.42	1.44	98.56