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A Study on Establishing Tariff and Non-Tariff Barrier Classifications for Virtual Goods and Services

Mr. Prashant Dalvi[1], Dr. Parag Karulkar[2]

[1]Assistant Professor, Dept. Of Commerce, St Wilfred's College Of Arts, Commerce & Science, Panvel, Raigad, Maharashtra, India
[2]Asst. Professor, Dept. Of Commerce, K. G. Uran College Of Commerce And Arts, Uran-Raigad Raigad, Maharashtra, India.

Abstracte:
In the expanding digital economy, classifying virtual goods and services for trade is a critical, unresolved issue. Unlike physical commodities, intangible assets such as in-game items, digital art, and software don't fit into traditional trade agreements like GATT and GATS. This paper proposes a new classification system for virtual trade, arguing that traditional tariff barriers are being replaced by restrictive Non-Tariff Barriers. Our research will categorize virtual goods by function and purpose, distinguishing between consumable items, durable goods, and transactional services. We'll then analyze emerging NTBs, including data localization, cybersecurity standards, and discriminatory platform regulations. By proposing this framework, the study aims to help policymakers and international organizations create a transparent and equitable global digital trade environment. This is essential to prevent fragmentation and foster innovation and cross-border commerce.

Keywords: GATT, Non-Tariff Barriers, Tariff Barriers, virtual goods, GATS

1. Introduction:

The global economy is undergoing a significant transformation fueled by the rapid growth of digital technologies and the rise of virtual goods and services.[1] This new form of commerce, which includes everything from streaming media to non-fungible tokens (NFTs), has outpaced traditional trade regulatory frameworks. The lack of a clear, universally accepted system has created a policy vacuum, resulting in a patchwork of national regulations that often act as de facto trade barriers. This ambiguity makes it difficult for customs authorities and policymakers to apply consistent rules, leading to trade friction and market fragmentation.[2] A central problem is that while virtual goods and services are increasingly vital to modern commerce, they don't fit neatly into the "goods" or "services" classifications used for tariffs and non-tariff barriers (NTBs).[3] For example, it's ambiguous whether a downloadable video game is a "good" subject to a tariff or a "service" that provides entertainment. Historically, agreements like GATT for physical goods

[1] Suntsova Olesia, (2024), "Digital transformation of the global economy: challenges and opportunities", Financial and Credit Systems: Prospects for Development. Issue - 3, Volume - 14. pp. 87-100.
[2] https://www.wto.org
[3] Mira Burri (2015) "The international economic law framework for digital trade" University of Lucerne, pp 01-71

and GATS for services can't properly define, categorize, or regulate these intangible digital products. This research aims to address this critical gap by proposing a new classification system for virtual goods and services based on their function and tradability. This study examines a new wave of non-tariff barriers, like data localization and platform regulations, that are often more restrictive than traditional tariffs. The goal is to establish a framework that helps international policymakers create a more transparent and fair system for digital trade, which in turn fosters innovation and global economic integration.

2. Review of Literature

1. Taranath P. Bhat, (1978), Quotas and other Non-Tariff Barriers (NTBs), like Voluntary Export Restraint (VERs), have historically hampered cotton textile exports from developing nations, including India, by especially targeting finished goods. These protectionist measures, institutionalized by agreements like the LTA and MFA, often benefited less efficient producers in developed countries. Domestic issues, such as high production costs, also significantly impact a country's export performance
2. Ibragimova Naylya Muradovna, (2020), Despite recognized negative consequences, developed nations utilize tariffs and non-tariff barriers (NTBs) to protect domestic industries, often for political reasons. A gravity model analysis (1999–2006) revealed that while all barriers reduce trade volume, NTBs—particularly Sanitary and Phytosanitary Standards (SPS) and Technical Barriers to Trade (TBT)—have the most detrimental effect on international trade flows.
3. Anupama,(2022) Tariffs and non-tariff barriers, while offering brief domestic protection, ultimately harm global trade by raising consumer prices and disrupting supply chains through reduced competition. A more open global economy is vital; through trade liberalization, strengthened partnerships, and technology, nations can cooperate to build a sustainable and equitable future, addressing issues like poverty and climate change.
4. Alla Shlapak, (2023), The fast digitalization of global trade, hastened by the pandemic, has created a major digital divide, especially in less-developed parts of Africa and the Asia-Pacific due to poor internet access and weak data protection laws. To stay competitive and foster economic growth, nations must prioritize digital transformation and investment to bridge this technological gap.
5. Lei Wang, (2025) Digital technology innovation has a net positive effect on service tradability across industries, despite a potential negative impact on the information sector, based on a 1995–2020 study of 76 economies. Developing countries can increase service tradability by investing in digital R&D, promoting cross-industry technology spillovers, and prioritizing data and algorithm-related patents over computing-power ones, supported by policies like labor reskilling

3. Objectives:

1. To create a new classification system to clearly define virtual goods and services.
2. To identify and analyze modern non-tariff barriers that block digital trade.
3. To show why current trade rules (GATT/GATS) are not suitable for virtual commerce.
4. To recommend a new policy framework to guide global virtual trade.

4. Scope Of Study :

This research paper will focus on the economic and legal challenges of classifying virtual goods and services for international trade. The study will analyze the inadequacy of current trade frameworks,

specifically the WTO's General Agreement on Tariffs and Trade (GATT) and the General Agreement on Trade in Services (GATS), in addressing the unique nature of digital commerce. It will examine how a lack of clear definitions leads to the rise of modern non-tariff barriers (NTBs) that hinder the free flow of digital trade.

4.1. Inclusions :

1. The paper created a new way to classify digital products.
2. It analyzed real examples of trade barriers (NTBs), showing how they harmed digital trade.
3. A legal review examined agreements and rules to find gaps in digital trade policy.

4.2. Limitations :

1. The study did not include a detailed plan for valuing or taxing virtual products.
2. It avoided focusing on cryptocurrency as a payment method, only its use for trading things like NFTs.
3. The paper did not fully analyze the social issues behind the global digital divide.

5. Research Methodology :

The study's methodology began with an extensive literature review of international trade law, focusing on GATT and GATS, alongside literature from economics, law, and computer science to develop a conceptual framework for classifying virtual products through an inductive process. The core of the research was a critical legal and policy analysis, which involved examining WTO Agreements (GATT, GATS, and rulings) to find ambiguous clauses for virtual trade, comparing national regulations (US, China, EU) on data and cybersecurity to identify de facto non-tariff barriers, and assessing digital trade provisions in modern agreements like USMCA and CPTPP. To illustrate these issues practically, the research employed a case study approach, analyzing the cross-border journey of select virtual goods or services to highlight the impact of regulations and the need for a unified classification system. All findings were based on secondary data, drawing from academic sources, official reports by international bodies (WTO, OECD, UNCTAD), legal databases, and government publications. The final data analysis was qualitative, focused on systematic interpretation and synthesis of non-numerical legal and policy information, rather than statistical tests.

6. Data Collection and Sourcing

The data for this analysis comes from secondary, non-quantitative sources. This includes:
Analysis of digital trade governance involves a comprehensive review of several key areas. This includes examining the legal frameworks of agreements like the GATT and GATS, as well as scrutinizing government policy papers and regulatory announcements from nations with notable digital trade barriers, such as China and the European Union. Furthermore, the analysis extends to case law and arbitration rulings from bodies like the WTO's Dispute Settlement Body to understand how existing rules are applied in digital disputes. Finally, it incorporates insights from academic and industry reports published by international organizations like the OECD and UNCTAD, which provide critical context on the current discourse and challenges within the digital trade landscape.

6.1 Analytical Framework and Interpretation

The interpretation of this qualitative data will be done through a structured content analysis and comparative analysis process.

1. **Content Analysis of Legal Frameworks:** We'll break down the GATT and GATS agreements by their core principles (e.g., non-discrimination, national treatment, market access). We'll then systematically

analyze each principle to identify where their definitions of "goods" and "services" fail to account for the unique characteristics of virtual assets. For instance, the GATT's focus on physical products and customs duties is irrelevant to a downloadable software, while the GATS's modes of supply (cross-border, consumption abroad, etc.) can be a poor fit for a globally accessible online game.

2. **Comparative Analysis of Non-Tariff Barriers (NTBs):** We'll compare the digital trade policies of different countries and regions to identify patterns and common types of non-tariff barriers. The analysis will focus on how these policies such as data localization laws (e.g., requiring data to be stored within a country's borders) and discriminatory platform regulations (e.g., favoring domestic app stores or e-commerce sites) function as trade barriers. This will involve interpreting policy intent and assessing their practical impact on foreign firms' market access.
3. **Synthesis and Interpretation:** The final stage of the analysis will involve synthesizing the findings from the legal and comparative analyses to build the proposed classification and policy framework. The interpretation will show how the identified gaps in existing frameworks and the rise of NTBs are causally linked. The interpretation will not be based on numerical correlation, but rather on a logical and argumentative connection, demonstrating how the legal ambiguity creates a vacuum that national governments exploit for protectionist purposes. This process will ultimately support the alternative hypotheses and the paper's central recommendations.

6.2 A Functional Classification System for Virtual Goods and Services

This proposed classification system is designed to provide a comprehensive framework for understanding and regulating the trade of virtual goods and services in the global digital economy. It moves beyond traditional trade classifications (like the GATT and GATS) by focusing on the unique attributes and functions of these intangible assets. The system is structured into three primary categories: Consumable Goods, Durable Goods, and Transactional Services.

Category 1: Consumable Virtual Goods

These are digital assets that are used up or depleted after a single use or a limited number of uses. They are analogous to physical consumables and typically provide a temporary benefit or effect.

- **Sub-Category 1A: Utility Items:** Goods that provide a temporary boost, effect, or an in-game advantage.
  - *Examples:* Virtual potions or elixirs that restore health or energy, Single-use power-ups or special abilities, Digital tickets for a single event or performance.
- **Sub-Category 1B: Currencies and Tokens:** Virtual assets that function as a medium of exchange within a specific platform or ecosystem. While a currency itself is durable, an individual transaction involving it is a consumption of that currency from the user's wallet.
  - *Examples:* In-game gold, gems, or coins, Virtual gift cards or single-use redeemable codes.

Category 2: Durable Virtual Goods

These are persistent digital assets that are not depleted with use. They are owned and can be traded or held for an indefinite period, often representing long-term value or status.

- **Sub-Category 2A: Fixed Assets:** Persistent virtual items that provide a lasting benefit or are a permanent part of a user's collection or inventory.
  - *Examples:* Virtual real estate (e.g., land plots in a metaverse), Digital collectibles, art, or non-fungible tokens (NFTs), Permanent character cosmetics (e.g., skins, outfits) or equipment (e.g., weapons, armor).

- **Sub-Category 2B: Transportable Goods:** Virtual assets that can be moved or used across different virtual spaces or platforms.
  - *Examples:* Virtual vehicles, mounts, or pets, Unique digital characters or avatars.

Category 3: Transactional Virtual Services

This category includes intangible services that facilitate an action, process, or experience without providing a distinct, ownable good. They are often subscription-based or transactional in nature.

- **Sub-Category 3A: Platform Services:** Services that enable access to a digital platform or its core functionalities.
  - *Examples:* Online gaming subscription services, Cloud data storage and hosting services, Access to streaming content libraries (e.g., music, movies).
- **Sub-Category 3B: Facilitation Services:** Services that facilitate a transaction or interaction between users or platforms.
  - *Examples:* Data processing services, Digital identity verification services, Matchmaking services in multiplayer games.

This classification provides a foundation for policymakers to address the unique challenges of digital trade, including the nuances of taxation, intellectual property rights, and the identification of non-tariff barriers that impede cross-border commerce. It emphasizes the function and tradability of the asset, offering a more precise tool for regulation and analysis in the rapidly evolving digital economy.

6.3. Analysis of Modern Non-Tariff Barriers (NTBs) in Digital Trade

In the rapidly evolving digital economy, traditional trade barriers like tariffs have been largely replaced by new, more subtle, and often more restrictive non-tariff barriers (NTBs). These measures, which are often justified on grounds of national security, data privacy, or consumer protection, can significantly impede the flow of virtual goods, services, and data. This analysis identifies and examines the most prevalent forms of modern NTBs. Digital trade is hindered by several non-tariff barriers (NTBs) that impede the free flow of data and services. These include data localization requirements, which force companies to store data domestically, significantly increasing costs for global firms and creating a barrier to entry for smaller businesses. Another key barrier is discriminatory platform regulations, such as "Buy National" policies and content restrictions, that favor domestic companies over foreign competitors, fragmenting the digital marketplace. Additionally, some countries impose arbitrary cybersecurity and technical standards, requiring foreign products to meet unique and often opaque regulations, which increases development costs and slows down the deployment of new technologies. Finally, intellectual property and source code disclosure requirements are a significant threat, as they compel foreign companies to reveal sensitive proprietary information, creating a high risk of IP theft and discouraging foreign investment and innovation.

6.4. The Inapplicability of GATT/GATS to Virtual Commerce

The General Agreement on Tariffs and Trade (GATT) and the General Agreement on Trade in Services (GATS) were foundational treaties for global commerce in the 20th century. However, their frameworks are ill-equipped to address the complexities of modern virtual trade due to their inherent focus on tangible goods and traditional services.

1. The GATT Framework: Designed for Physical Goods

The General Agreement on Tariffs and Trade (GATT) faces significant challenges in governing digital trade because its principles are rooted in the movement of physical products. Digital goods, being non-physical, cannot be subjected to GATT's primary tool, tariffs, as there is no customs border to tax them.

The concept of rules of origin, which is straightforward for manufactured goods, becomes meaningless for digital assets created and distributed across multiple countries. Furthermore, GATT's provisions for physical inspection and standards are irrelevant to virtual goods, which lack physical attributes, highlighting the need for a new framework to address the complexities of the digital economy.

2. The GATS Framework: Outdated for Digital Services

The General Agreement on Trade in Services (GATS), while a step forward for regulating services, is poorly equipped to handle the complexities of the digital economy. Its framework, which categorizes services into four modes of supply, is largely irrelevant for virtual commerce. While Mode 1 (cross-border supply) is applicable to some digital transactions, the other modes, such as consumption abroad, commercial presence, and movement of natural persons, were designed for a physical world and fail to account for the nature of digital goods and services. The GATS framework does not adequately address a reality where a service provider's "presence" is a server in a different country and "movement of natural persons" is replaced by an automated process, rendering its rules largely inadequate for modern digital trade.

3. The Failure to Address Non-Tariff Barriers

Existing global trade agreements like GATT and GATS are ill-equipped to handle modern non-tariff barriers that are unique to the digital economy. These agreements, drafted before the rise of the internet, lack specific provisions to address issues such as data localization requirements which mandate data storage within a country's borders, or the demand for source code disclosure and arbitrary cybersecurity standards as a condition for market entry. These novel barriers do not fit the traditional, nation-state-centric model of trade that GATT and GATS assume. The case of a global service like Spotify, which operates in over 180 countries, highlights this fragmentation, as it must navigate a complex patchwork of domestic regulations instead of a cohesive global framework, demonstrating the significant gap in current international trade law.

6.5 Non-Tariff Barriers (NTBs)

A company like Spotify, a global music streaming service, faces its most significant challenges not from traditional tariffs, but from a variety of non-tariff barriers (NTBs). These include data localization regulations, such as those in the European Union's GDPR and China's Cybersecurity Law, which force the company to invest in local data storage and compliance infrastructure. Additionally, Spotify must contend with foreign exchange and repatriation hurdles in emerging markets, which complicate the process of moving revenue back to its parent company. Finally, the service is often targeted by discriminatory taxation, such as digital service taxes (DSTs), which are unevenly applied and disproportionately affect foreign tech companies, creating a fragmented and unfair operating environment.

6.7. Tariff Barriers and the Goods vs. Services Debate

While a direct tariff on a Spotify subscription is currently prevented by the WTO moratorium, the underlying "goods vs. services" debate still affects its business model. The various components of the Spotify service, such as downloadable songs (for offline use) or the subscription itself, could be classified differently. Some countries might view the service as a one-time purchase of a digital good, while others see it as an ongoing subscription service, which affects how it's taxed for purposes like sales tax or value-added tax (VAT). The lack of a clear, internationally agreed-upon definition for these digital products makes compliance a constant and evolving challenge. The Spotify case illustrates that the most impactful barriers to virtual goods and services are not traditional tariffs but rather a complex web of non-tariff barriers, including data localization, foreign exchange regulations, and discriminatory taxation. These

NTBs are a form of protectionism that requires companies to create different operational and financial models for each country, hindering the seamless flow of global digital trade and underscoring the need for a modern, unified classification system.

6.8. A Policy Framework for Global Virtual Commerce

A new policy framework for global virtual commerce must move beyond the constraints of physical goods and traditional services to address the unique challenges of the digital economy. This framework should be guided by a few core principles: a focus on data flows, a tiered approach to regulation, and a commitment to global cooperation.

1. Principles of the Framework

A forward-looking framework for digital trade must prioritize the free and open flow of data across borders, treating restrictions as significant barriers to business. It should adopt a "digital first" approach, designed specifically for the instantaneous and borderless nature of virtual commerce, moving beyond outdated concepts like physical tariffs. The framework should also use tiered regulation, applying a level of scrutiny proportional to the size and influence of a digital service, and promote the harmonization of standards to prevent a fragmented global landscape. Finally, it must be inclusive, with policies aimed at enabling developing economies and small to medium-sized enterprises (SMEs) to fully participate and bridge the digital divide.

6.9. Key Policy Areas

A. **Data and Privacy:** A modernized framework for digital trade must establish a clear set of global data transfer rules that balance privacy with the free flow of information. This could involve a universal "privacy seal" to facilitate transfers between certified organizations. Simultaneously, it should enshrine a universal set of consumer data rights, guaranteeing individuals the right to access, correct, and delete their personal information, no matter where the company is based.

B. **Taxation and Customs:** Digital Services Tax: Develop a multilateral agreement on the taxation of digital services, moving away from unilateral national taxes that create a complex and fragmented system. This should focus on where value is created and consumed. No Customs Duties on Electronic Transmissions: Make the current WTO moratorium on tariffs for electronic transmissions permanent and binding, ensuring that digital goods remain untaxed.

C. **Competition and Market Access:** Interoperability Mandates: Mandate that dominant platforms allow for interoperability with smaller services to prevent the formation of "walled gardens" that stifle innovation. Prohibition of Unfair Practices: Create rules that prevent major platforms from using their market power to disadvantage smaller competitors, such as by favoring their own services or products.

D. **Intellectual Property and Security:** Globally Harmonized IP Protections: Strengthen and harmonize intellectual property protections for digital assets, including clear rules on copyright and patent enforcement.

E. **Cybersecurity Standards:** Establish a baseline of internationally recognized cybersecurity standards that all services must meet to operate across borders. This would protect both consumers and businesses from cyber threats.

7. Suggestions & Recommendations

7.1. Suggestions:

1. Policymakers should create a single, global system to classify virtual products.
2. International groups must focus on setting rules to limit non-tariff barriers (NTBs).
3. The World Trade Organization (WTO) needs to reform its rules for e-commerce.

7.2. Recommendations

1. Make the moratorium on customs duties for digital goods permanent.
2. Establish an international accord that promotes data sharing and sets common cybersecurity rules.
3. Create a standing committee with governments and tech companies to guide new policies.

8. Conclusion:

The current GATT/GATS frameworks are inadequate for governing the rapidly evolving trade of virtual goods and services because they fail to classify these intangible assets. This policy vacuum has led to fragmented national regulations and the rise of new protectionist non-tariff barriers (NTBs), like data localization and discriminatory platform rules, which stifle the global digital economy. To ensure a predictable and equitable digital trade environment, we recommend a new classification system, a new international accord for NTBs, the permanent abolition of digital tariffs, and increased public-private partnerships. Establishing a robust system for digital trade is a necessity to prevent the balkanization of the digital world and secure future economic growth.

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