

The impact of tariff on economic development: A study on Sri Lanka

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Abstract - Tariffs remain the central component of trade policy, especially in developing nations as a source of government revenues and as a means of protection for local companies. Tariff structures in Sri Lanka have been changed numerous times between 1990 and 2020 by political regime changes, economic reforms, and external shocks. This study examines the long-run and short-run effects of tariff policies on Sri Lanka's economic development over the past two decades. Using secondary time-series data sourced from the World Bank, WTO, CBSL, and IMF, the analysis applies regression techniques, causality testing, and trend analysis to capture the relationship between average tariff rates and development indicators such as GDP growth, per capita income, and the Human Development Index (HDI). Early evidence is that although reductions in tariffs often inaugurated short-run trade and import expansion, these contributed to undermining fiscal discipline and balance of the external account in the long run. Increases in tariffs, conversely, brought short-run increases in revenue but discouraged export competition and productivity gains. Evidence is that ad hoc policy actions introduced uncertainty, dissipating the beneficial effect of development from trade policy. This paper contributes the following to the literature: it has Sri Lanka-specific long-run evidence and policy implications for small open economies in the context of establishing stable, development-friendly tariff regimes. The research concludes that unstable trade policy mechanisms in 1990-2020 provided temporary expansion of the trade, however, at the cost of export competitiveness and the stability of investments. Continued policy instability and foreign shocks also undermined the economic stability and growth momentum in Sri Lanka.

Keywords: Economic Development, Growth, Sri Lanka, Tariff, Trade Policy

I. INTRODUCTION

Economic Trade liberalization and economic growth are two inseparable aspects of national development especially in the developing economies of the world like Sri Lanka. Trade orientation and fiscal policy have historically been largely shaped by tariffs. In the case of Sri Lanka, tariffs have been used in two main functions of raising fiscal revenue to support national budgets and to provide a protective safeguard to the weak local industries. Small island countries with low export base and high import dependence tend to be heavily dependent on tariff revenues, which leads to the paradox of conflicting goals of fiscal restraint and competitiveness (World Bank, 2021). The tariff regime in Sri Lanka has undergone several substantial transformations which look like a reflection of the overall political and economic cycles in the last three decades. The liberalization periods have alternated with the periods of protectionism based on the reaction to the domestic fiscal pressures as well as the shock of the global markets. An example is that post-War tariff cuts in the early 2010s caused an increase in the growth of imports, but led to the creation of external imbalance, whereas populist tariff adjustments before the 2022 economic crisis undermined fiscal discipline and investor trust (Central Bank of Sri Lanka, 2023). Such swings demonstrate that there is no stability in policies, and hence, economic predictability and growth in the long run is impaired.

Although tariffs are applicable in the economic trajectory of Sri Lanka, little research studies have been done to establish the developmental effects in the long-term. The literature available has focused on the balances of trade, taxation earnings or competitiveness of a sector, ignoring the general socio-economic consequences of increasing the GDP, enhancing human development, and equality in distribution of incomes. This is where the need of longitudinal studies to incorporate macroeconomic and institutional aspects in the analysis of tariffs lies.

The present research will help fill this gap in the literature by assessing the connection between tariff measures and the socio-economic progress of Sri Lanka in the time frame of 1990-2020. Specifically, it aims to:

1. To test the association between tariff structures and the socio-economic growth determinants in Sri Lanka.
2. To test both the short run and long run impacts of fluctuation of tariffs on the general development of the country.

The (H1) high tariff levels reduce long-term growth, by deterring competitiveness and innovation, and (H2) tariff changes have both positive and negative short-term effects suggest the study of relevance of consistency and strategy in the formation of tariffs. The results will have three significant contributions. First, on a scholarly level, the study provides an expansion of knowledge on the topic through the association of tariff dynamics with the more general development indicators over several decades. Second, policy-wise offers evidence-based policies on whether tariff interventions should focus on generating revenue, protecting industries or spurring growth. Lastly, the topicality of the current research is supported by the fact that it addresses the key periods of national life such as the era of post-war reconstruction, global financial crisis, COVID-19 pandemic and the debt crisis of 2022 all of which influenced the economy of Sri Lanka. Overall, this study does not only contribute to the theoretical debate about trade policy and development; however, this research also provides effective suggestions to the policymakers on how to establish a more stable, transparent, and growth-oriented tariff regime in the future of Sri Lanka as the policy has long been used as a dual economic tool in developing countries, Sri Lanka included, both as a source of fiscal revenue and as a means of protection to local industries. The current paper investigates the effects of tariff policies on the economic development of Sri Lanka between 1990 and 2020, which is a time-period of significant economic, political and institutional changes. The study aims at learning the impacts of tariff changes on the socio-economic indicator of GDP growth, income per capita, and human development. The hypothesis of the study is that a high level of tariffs would have a negative impact on growth in the long run, by lowering the competitiveness and innovation factor, and may have a comparatively mixed impact in the short-term, either temporary protection or fiscal relief. This paper would indicate using theoretical and empirical findings to challenge the idea of tariff volatility regimes being a more significant problem than the magnitude of tariffs. The findings not only add to the academic discussion but also offer policy implications to sustainable trade management and offer comparative insights to other small and trade-dependent economies. In summary, the study clarifies that the research gap explicitly states the existing studies which are mainly focused on the trade balance, the fiscal revenue or even

the sectorial impacts whereas none of the studies examine the long term link between the volatility of tariff and the overall development in Sri lankan economy across the years of 1990 to 2020 specifically in the context of the recent tariff shifts globally.

II. LITERATURE REVIEW

Tariff policies have long affected the patterns of economic development and global trade performance. The comparative advantage theory (Ricardo, 1817) argues that tariffs can create inefficiencies by providing shelter for industries that have no benefit in international trade in competitive, productive locations. The infant industry argument (List, 1841) the idea that providing temporary protection for a young industry in developing nations allows it to build competitiveness—runs counter to the comparative advantage theory. More recent frameworks, such as endogenous growth theory (Romer, 1990), also emphasize that trade and transfer of technology can facilitate sustained productivity and long-term gains in human-capital. Empirical studies by the (Furceri, 2019) and (Bank, 2022) add that sustained liberalization and predictable tariff regimes stimulate more foreign direct investment (FDI) and enhance innovation (research and development). Frequent backtracking in policy deters further private-sector confidence and slows productivity. These frameworks and empirical studies provide theoretical justification to study the connection of tariff changes on long-run economic development for Sri Lanka.

A. Sri Lanka's Tariff Policy and Development Outcomes

Sri Lanka's trade and tariff policies since the 1990s have continued to reflect an enduring tension between liberalization, fiscal imperatives, and political cycles. At the start of the reform agenda, the primary purpose was economic integration into the global markets; however, subsequent administrations have often altered policy either to address fiscal needs or, at times, for short-term political gains. There is a burgeoning literature that provides a detailed account of this trajectory showing how policy instability inhibits sustainable development outcomes.

Building on reforms launched in 1977, Sri Lanka entered the 1990s with a strong liberalization agenda. (Rajapatirana, 1988) provided an early evaluation, showing that trade reforms improved efficiency and expanded exports, though the benefits were unevenly distributed. (White, 1995) quantified these changes, noting that the trade-to-GDP ratio rose considerably as tariffs were reduced. However, he also cautioned that frequent adjustments in tariff rates created instability, undermining investor confidence.

While the initial liberalization improved efficiency in 1988 and 1995, evidence presented later shown in the years of 2000 the uneven distributional consequences and increased rural vulnerability. This contrast also indicates that the gains from tariff reform were of a context-specific nature and depended on fiscal discipline. Similarly, tariff reversals, which were not based on evidence, have shown to terminate growth benefits from post-war research in the years of 2012 and 2014. These inconsistencies support the conclusion that the real problem to sustained development is tariff volatility, not the tariff level itself. Sectoral studies shed further light on the liberalization experience. (MIM Rafeek, 2000) examined the rice sector, showing that while tariff reductions improved efficiency and reduced consumer prices, they also exposed small farmers to competitive pressures that lowered incomes. These findings suggest that the 1990s reforms enhanced overall openness but failed to deliver inclusive growth. The period revealed a key dilemma: liberalization boosted efficiency but created vulnerability for domestic

producers, particularly in agriculture. The 2000s were characterized by conflict and fiscal pressures that led to a reversal in earlier liberalization. (Naranpanawa, 2005), using a computable general equilibrium model, discovered that trade reforms contributed to aggregate economic growth, but poverty impacts were less uniform and poorer rural households lagged urban households. A follow-on paper by (Naranpanawa et al., 2011) has shown that while liberalization leads to economic growth the distribution of gains was irregular and grew inequality. Both papers highlight the fact that trade policy during periods of instability affects vulnerable groups disproportionately. (Pursell, 2011) also noted Sri Lanka's retreat to protectionism and that tariffs were more often concentrated as revenue instruments, not under an industrial development rationale. This was a point effectively made in the context of the fiscal problems faced by other South Asian economies. (Somaratne, 2000) also argued that trade tariff policy needed to be amended to better facilitate sustainable development through green trade policy tools. The evidence collectively demonstrates that the instability of the decade compromised the developmental potential of trade liberalization because of fiscal and political constraints to change tariffs in a timely manner.

The conclusion of the civil war in 2009 sparked hopes for renewed growth at the beginning of peace. Early work by (Athukorala and Jayasuriya, 2004) demonstrated that trade and foreign direct investment (FDI) could serve as complementary conduits for growth, which was a view shared in policy debates on the post-war situation for Sri Lanka. However, during the years that followed, the evidence became mixed, with (Athukorala, 2012) claiming that Sri Lanka was drifting back to dirigisme with growing reliance on tariffs harming export competitiveness. This scenario indicated that the agenda of the government was orientated towards short-term fiscal gain, rather than a policy of long-term integration. Using econometric analysis, (Liyanaarachchi et al., 2014) examined tariff reversals, finding that while tariff reversals encouraged revenue and provided short term relief for domestic import-competing producers, the reversals also inhibited export competitiveness. (Athukorala, 2015) echoed these findings, claiming that while liberalization spurred imports and contributed to short-term growth, the performance of the country's export trade deteriorated. Altogether, these studies expose that the optimism associated with the post-war period has been undermined by a policy approach that favored fiscal expediency over a sustained development agenda. Reformist governments sought to rationalize tariffs and mobilize investment, particularly during the mid-2010s. (Harvard CID, 2018) named tariff and para-tariff barriers to international trade as major constraints on the process of export diversification. While it is understood that tariffs were an avenue of protectionism that limited Sri Lanka's ability to diversify to new industries in a globalized economy, Rathnasekara showed that trade and FDI reforms had beneficial impacts on economic growth but did not promote fiscal sustainability ((Rathnasekara, 2022). The narrative of continued revenue dependence on tariffs showed that the reforms were not entirely effective.

Studies in the labor market offered further exploration. While the liberalization provided new employment, and promoted employment particularly in export-enabling industries, they also identified displacement in protected industries (Liyanaarachchi et al., 2016). This provides insight into the distribution of gains, where some benefited and some faced adjustment costs. The literature therefore shows that the reforms during this time seemed beneficial, while they were undermined by partial reform, and the limiting fiscal context. The beginning of the economic crisis in 2020 shed light on the precariousness of

Sri Lanka's trade policies. The study by Pitigala and Singh (Pitigala and Singh, 2020), which examined para-tariffs, revealed a hidden trade barrier in that costs for firms increased and their competitiveness decreased. It is declared that tariff reductions spurred growth in an economy-wide CGE model, but resulted in fiscal stress, demonstrating that there is always a trade-off between openness and revenue (Swarnathilake and Weerasooriya, 2021). While another documented how protectionist policies during this timeframe were political, rather than developmental, indicating a thinking process based on the immediate and not based developmental (Lakmini, 2022). Collectively, these studies illustrate how policy inconsistency and fiscal reliance on tariffs led to a vulnerable posture in the lead-up to the crisis. Recent evaluations put forth by the IMF in 2013 and the UNESCAP in 2024 show that South Asian nations, including Sri Lanka, shifted their tariffs to the aftermath of the pandemic finances where tariff adjustments were made more as a reaction to a financial crisis as opposed to a longer-term view to enhance competitiveness. These conclusions reinforce the position that short-term protectionism can exacerbate a country's fiscal strain or deterioration of confidence among investors when it is not part of an incremental development strategy.

Ultimately, the literature indicates the overall presence of a repeated trajectory of policy instability, where patterns of alternating liberalization and protectionism hampered the pace of development in Sri Lanka. Tariff reductions sometimes had a positive effect on trade and revenue; however, abrupt reversals of those same policies had a detrimental effect in reducing exports and long-term investment. Across several decades, the evidence is unequivocal: policy uncertainty limited the development liberalization could have offered; and therefore consistency, transparency, and policy stability may be more valuable to sustainable development than the sheer level of tariffs.

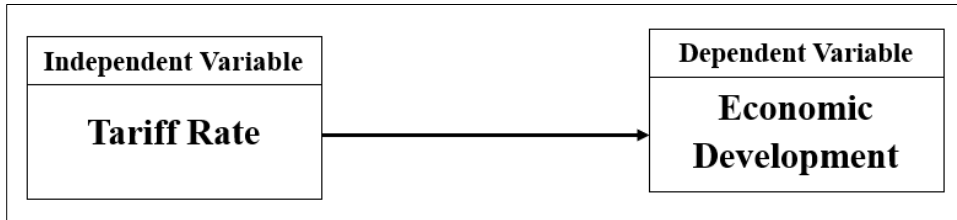
B. Critical Review

Sri Lanka's tariff policy has shown a pattern of instability over the past thirty years, resulting from changing political and fiscal priorities and events. Although tariff liberalization promoted greater openness in trade policy in the 1990s, it did not lead to inclusive growth absorption in Sri Lanka. The protectionist reversals we saw in the 2000s in responses to varying fiscal needs, along with competing demands established under conflict, undermined continued credibility in reforms. Even the optimism that surrounded the end of the war in early 2010 was eclipsed by dirigiste policy responses that focused on revenue generation first and formulistic reform later, which continued and deepened the conflicts before continuing in response to conflict mitigation after 2015, but only moderately successfully. By 2020, tariffs had ultimately devolved as being primarily a political and fiscal tool resulting in making an economy vulnerable to a crisis.

The evidence provided suggests that Sri Lanka has struggled with the use of tariffs as instruments of sustainable development. Frequent policy reversals have increasingly damaged the ability of the economy to compete and disrupt investments of various forms that have real economic potential while simultaneously creating a fiscal reliance on trade taxes. Throughout the literature, there is the recognition of the need for an overall more stable and coherent trade policy framework that balances fiscal needs with long term growth development.

C. Conceptual Framework

Figure 1 Conceptual Framework



Source: Authors' creation.

D. Research Gap and Justification

Most existing research on Sri Lanka has focused on the impact of trade policy on fiscal revenue, trade balance, or poverty outcomes. Studies by (Naranpanawa, 2005, Naranpanawa et al., 2011) and Pursell & Ahsan (2011) analyzed specific periods or policy shifts, while others such as (Rathnasekara, 2022) and (Pitigala and Singh, 2020) assessed particular instruments like para-tariffs. However, very few studies have examined the long-term relationship between tariff changes and overall economic development outcomes. Furthermore, while comparative research exists for South Asia and East Asia, there is little integration of government policy shifts into the analysis of Sri Lanka's tariff-growth nexus. No study comprehensively covers the 1990–2020 period, which saw liberalization, conflict, post-war recovery, reform attempts, and crisis-prone policies. This gap justifies the present research, which provides long-term, Sri Lanka-specific evidence to evaluate how tariffs influenced development and whether policy instability weakened growth potential. By bridging this gap, the study contributes to both academic debates and policy discussions on the role of tariffs in small, open economies.

III. METHODOLOGY

A. Research Design

A quantitative research design that uses secondary time-series data is used in this research. A quantitative method is appropriate because it objectively and numerically measures the relationship between tariff policies and indicators of economic development over time. This also allows us to look for trends, correlations, or even causal relationships between protectionist trade tools and growth patterns. The use of time-series analysis is common in economic studies, especially to assess the long-term effects of trade liberalization and tariff reforms. In the case of Sri Lanka, previous research has applied an econometric approach using growth outcomes to outline the relationship between growth and openness, protection, and structural changes. In the studies (The Causal Relationship between Trade and Economic Growth in Sri Lanka: Foreign Trade and Economic Development: Sri Lanka's Experience), the authors followed a similar path. Thus, this study applies both regressions and causality-testing to give a thorough analysis of the tariff–growth relationship.

The research is explanatory in its intent to discover not only statistical relationships but also the direction and strength of such relationships and, therefore, involves aspects of description, given that trend perspectives are utilized, which give some proxies of the historical trajectory of tariff movements, GDP benchmarks, and welfare indicators. As it combines relevant explanatory and descriptive techniques, the approach offered would

provide for analysis and context, like Trade Protection Measures Implemented by Sri Lanka During the Past Three Decades and How Open Has the Sri Lankan Economy Become? when seeking more accurate options in the possible design.

B. Data Sources

The study only makes use of secondary data drawn from established, globally recognized, and nationally authoritative sources as follows.

Table 1. Data Sources

Variables	Definition	Measure	Source
Tariff Rate (TR)	Tariff	As % of total imports	Our world in Data https://ourworldindata.org/grapher/tariff-rate-applied-weighted-mean-all-products
Economic Growth (GDP)	GDP (Gross Domestic Product)	Annual % change in real GDP	Our world in Data https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=LK

Source: Authors' creation.

To achieve consistency, the data required cleaning and adjusting prior to analysis. The data were interrogated where applicable via interpolation for missing values, and all variables were grouped at the annual level to allow comparisons. The data were examined using econometric models in STATA, specifically via multiple linear regression models and panel data regression models to assess the statistical relationship between tariffs and economic growth. The use of reputable data sources, namely the World Bank, enhanced the rigor and comparability of the current study. Having similar data sources in previous studies, Trade Liberalization in Sri Lanka: Impacts on Exports and Imports and Sri Lanka Trade Policies: Back to Protectionism, will substantiate the rigor of the comparisons made and further endorse the credibility of the empirical findings in the paper.

C. Study Period

The study period is selected from 1990–2020 (30 years). This timeline was chosen for three reasons: Policy changes: While stability began in the early 1990s with the most liberal policy enacted, there were changes in the subsequent years, and then reversals to protectionism (Sri Lanka's Trade Policies: Back to Protectionism; Trade Protection Measures of Sri Lanka: Corroborate survey processes manuals & reflect on outcomes every thirty years).

Conflict and Rehabilitation: The End of Sri Lanka's Civil War in 2009 demonstrates a Structural Break in Economic Performance. This creates a natural break from Sri Lanka's Trade Policy: Reverting to Dirigisme?). Global crises: The period also captures the 1997 Asian financial crisis; the 2008 global financial crisis, as well as the first-mover effects of the COVID-19 pandemic and their intersection with tariffs (Distributional Impacts of Trade: Empirical innovations, analytical tools, and policy responses). This

thirty-year period provides sufficient variation to enable testing of both cyclical and structural effects of the tariff reforms on Sri Lanka's economy.

D. Analytic Tools and Techniques

1). Multiple Linear Regression

To analyze the effect of tariffs on economic development in Sri Lanka, a multiple linear regression (MLR) model was utilized. MLR is appropriate for capturing the linear effect of one dependent variable on one or more independent variables while holding the influence of other factors constant. In the current study, the dependent variable is the GDP growth rate (GDP), while the independent variables include average tariff rate (TR) and a time trend (Year) to capture the confounding effect of time.

2). Trend Analysis

To identify long-run shifts in tariff rates and development indicators, we use both descriptive statistics and graphical trend analysis. This is notably useful in contextualizing regression results, so they are consistent with historical experience. For instance, there are observed increases in para-tariffs in the late 2000s and early 2010s that can be visually linked to stagnation in growth and welfare (Impact of Para-Tariffs in Sri Lanka; How Open Has the Sri Lankan Economy Become?). This triad of approaches combines statistical rigor with attention to historical processes, thus capturing the complexity of the tariff–development linkages.

3). Proposed Granger Causality Test

This specification assesses the potential for bidirectional causality between tariff rates and GDP growth. In the first equation, we model GDP growth as a function of its own past values and the lagged values of tariffs. These tests if past levels of tariffs contain predictive information about future GDP. In the second equation, we model tariff rates as a function of its own past values and lagged GDP, which tests whether past GDP growth contains predictive information about tariffs. Together, the two equations will allow us to identify whether we have a unidirectional or bidirectional relationship between tariffs and GDP, as required under the Granger causality framework.

$$GDP_{it} = \alpha_i + \sum_{k=1}^p \beta_k GDP_{i,t-k} + \sum_{k=1}^p \gamma_k TR_{i,t-k} + \varepsilon_{it}$$

$$TR_{it} = \alpha_i + \sum_{k=1}^p \delta_k TR_{i,t-k} + \sum_{k=1}^p \theta_k GDP_{i,t-k} + \mu_{it}$$

E. Justification of Methodology

The case for methodology is drawn from both theoretical and empirical bases.

First, the regression, causality, and trend analysis methods I have employed align with the methodological recommendations of previous studies. For example, The Distributional Impacts of Trade recommends a combination of econometric estimation and descriptive contextualization, and Trade Liberalization and Poverty in a Computable

General Equilibrium Model suggests analysis of both direct benefits of trade reforms and impacts of indirect effects of liberalization. Second, the period allows me to consider Sri Lanka's experience in liberalization, conflict, recovery, and crisis; thus, the research covers a substantially longer period and allows for analysis of structural change, not simply short-run shocks. Research on the Sri Lankan economy has recommended the analysis of public policy considering long-term development, such as *The Sri Lankan Economy: Charting a New Course* and *Sri Lanka Growth Diagnostic Analysis*. Third, with one dependent variable, GDP growth, addresses economic efficiency and social equity principles. Previous research focused exclusively on GDP growth as a dependent variable, but newer research (in particular, *Economic Growth, Income Distribution and Social Equity in Sri Lanka*; *Trade and Poverty Nexus*) has shown that tariff policies produce distribution effects. The current study takes a more multidimensional approach and inclusively shows how tariffs can affect several social issues.

Finally, the dependence on secondary data sources is not only about accuracy but also comparability. This adheres to the methods used in *Trade Liberalization in Sri Lanka: Impacts on Exports and Imports* and *Sri Lanka's Trade Policies: Back to Protectionism* research by making use of CBSL, WTO, and World Bank databases and data credibility.

In conclusion, the methodology framework contributes towards robustness, validity, and relevance. Practical methods incorporating quantitative data with historical sensitivity allow for a comprehensive assessment of the effect of tariffs on economic and development impact on Sri Lanka for the years 1990 - 2020.

IV. RESULTS AND DISCUSSION

This chapter reveals the empirical findings of the study on tariff effects on economic development in Sri Lanka for the period 1990–2020. The analysis is conducted using secondary time series data from the World Bank, WTO, CBSL, and IMF. The primary variables used in the analysis are the GDP growth rate (GDP) as a measure of economic development, and the average tariff rate (TR) as the independent variable. The study uses multiple statistical and econometric techniques, including descriptive statistics, correlation analysis, multicollinearity testing, stationarity testing, VAR, and multiple linear regression to investigate the short-run and dynamic relationships between tariffs and economic growth in Sri Lanka. This chapter interprets the patterns, relationships, and dynamics amongst the variables and addresses the implications of the findings for Sri Lanka's trade policy and economic development.

1). Descriptive Statistics

Prior to conducting econometric estimations, it is necessary to analyze the descriptive statistics for the principal variables to explore their distribution, central tendency, and variability with respect to the study period. The summary statistics for Sri Lanka's GDP growth rate (GDP) and the average tariff rate (TR) for the period 1990 - 2020 are given in the Table.

Table 2. Descriptive Statistics of Key Variables (1990–2020, Sri Lanka)

Variable	Observation	Mean	Standard Deviation	Minimum	Maximum
GDP (%)	31	4.8883	2.8265	-4.6245	8.6695
TR (%)	31	12.3653	8.6320	4.4300	31.2200

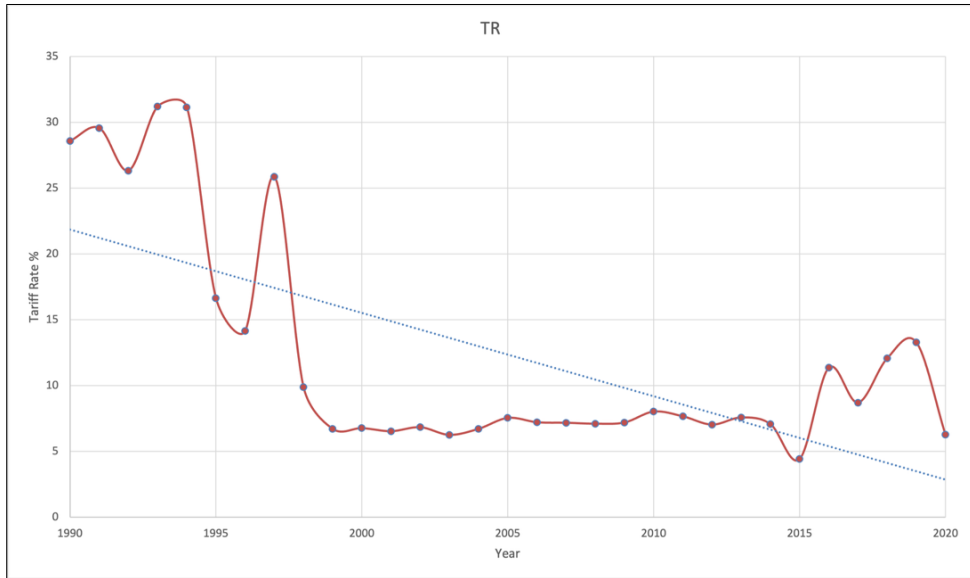
Source: Authors' creation.

The GDP growth rate has an average value of 4.89% with a standard deviation of 2.83% indicating Sri Lanka's economic performance varies moderately over the 31 years. The minimum value of -4.62% is indicative of a steeper contraction period during economic crises, such as the recession in 2001 or the post-COVID-19 pandemic downturn in 2020. The maximum growth rate of 8.67% refers to post-war recovery phases and the general economy expanding, particularly after 2009. The findings from the descriptive statistics suggest that Sri Lanka's average growth is cumulative; health indicators demonstrate that any given period is generally positive, while the country has experienced periodic downturns attributable to both internal and external shocks.

During the same period, the average tariff rate (TR) was 12.37%, with a high standard deviation of 8.63%, indicating significant volatility in trade policy. The minimum tariff rate of 4.43% corresponds to years of greater trade liberalization, consistent with Sri Lanka's tariff reduction commitments in other regional and global trade agreements. The maximum tariff rate of 31.22% reflects periods of greater protectionism, particularly during periods of fiscal pressure or policy reversal. The degree of deviation in tariff rates illustrates the fluidity of Sri Lanka's trade policy toward liberalization and protectionist regimes over the past thirty years.

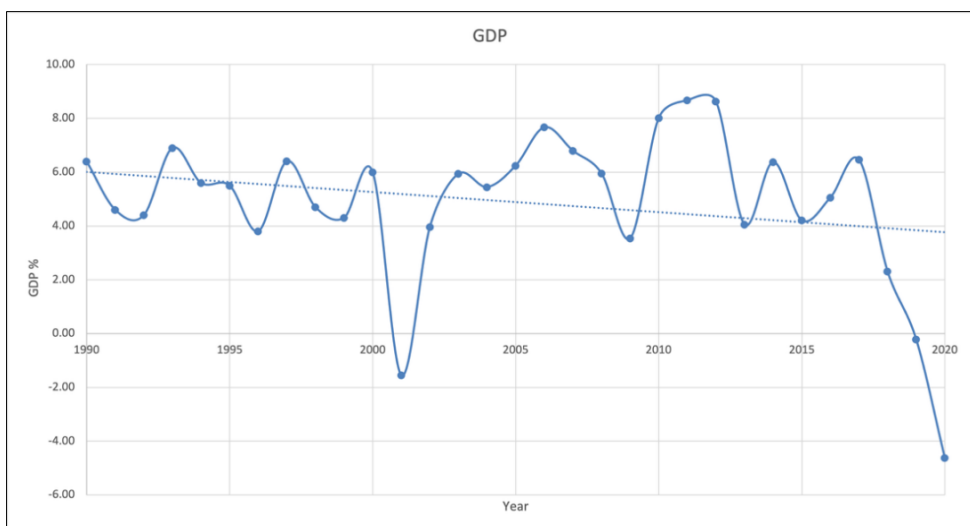
Overall, the descriptive statistics provide helpful information about the dynamics of Sri Lanka's economy and trade policy. The variability in GDP growth illustrates the economy's sensitivity to global shocks and domestic conditions, while the variability in tariff rates illustrates that trade policy reform has had an inconsistent trajectory. These patterns provide justification for continued econometric work to assess the causal relationship between tariffs and economic development outcomes in Sri Lanka.

Figure 2. Tariff Rate Fluctuation



Source: Authors' creation.

Figure 3. GDP Rate Over the Years



Source: Authors' creation.

2). Correlation Analysis

A Pearson correlation test was utilized to explore the linear connections between GDP growth (GDP) and the independent variables. The outcomes related to the correlation of GDP growth (GDP) with tariff rate (TR) is detailed in below table.

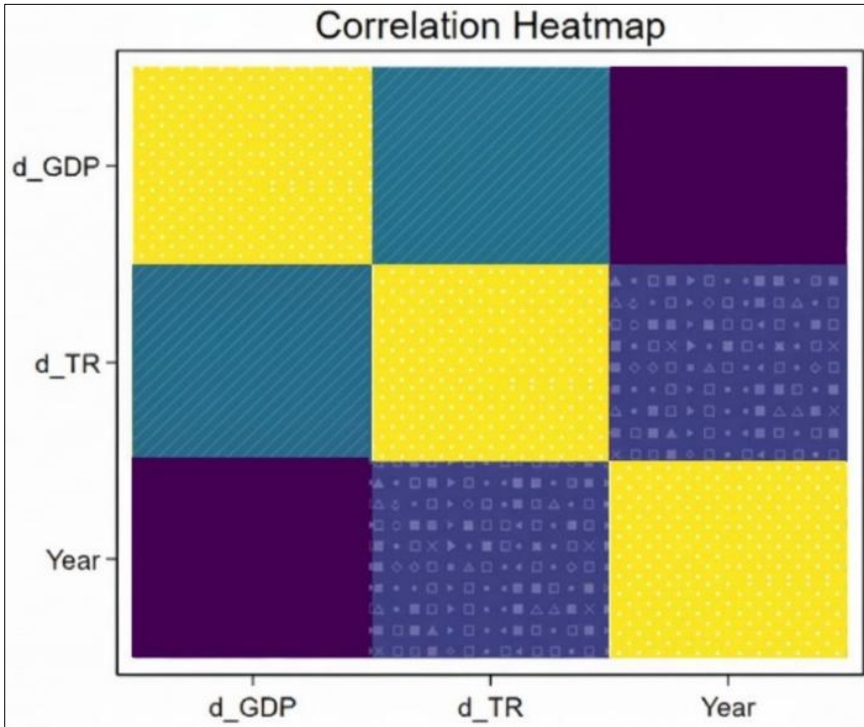
Table 3. Correlation Analysis

Variable	GDP	TR
GDP	1.0000	
TR	0.2223	1.0000

Source: Authors' creation.

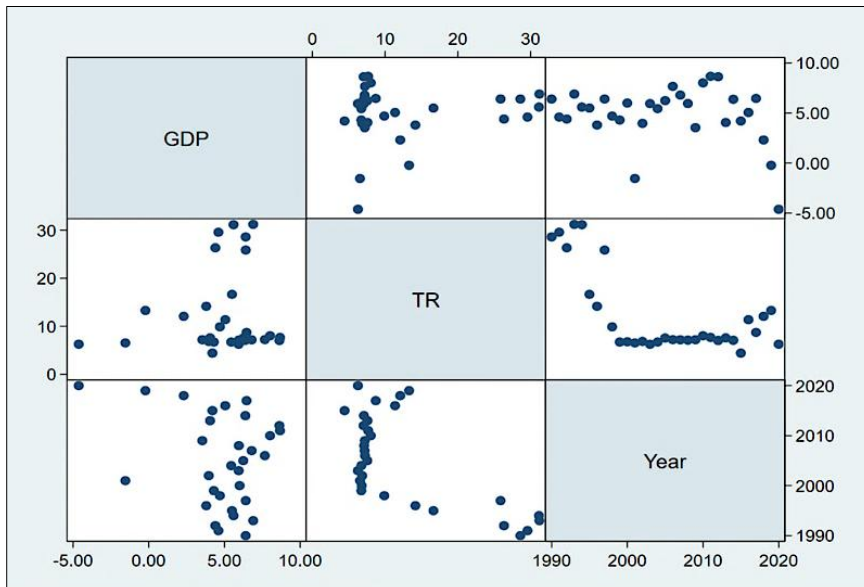
The correlation coefficient between GDP growth (GDP) and tariff rates (TR) is 0.2223, indicating a positive but weak relationship. However, the p-value (0.2441) indicates that it is not statistically significant at the 5% threshold. This means it is not reasonable to say that there is a strong or linear association with economic growth with respect to changes in tariff rate during the period (1990 – 2020) in the context of Sri Lanka. Although the coefficient being positive suggests that higher tariff rates may be associated with slightly higher GDP growth rates in a few instances, the results cannot be generalized because we cannot conclude significance. Overall, a weak and insignificant correlation between the two means that changes in tariff rate alone, are unlikely to explain variance in GDP growth. However, as the correlation is below the threshold to be concerned with multicollinearity, tariff rate can be included as an explanatory variable in the data analysis through regression to explore a potential indirect or combined effect with other factors and variables, such as inflation and trade openness.

Figure 4. Scatter Plot for Correlation



Source: Authors' creation.

Figure 5 Correlation Heatmaps



Source: Authors' creation.

In the context of Sri Lanka, this correlation may relate to the country's reliance on sectors that are less sensitive to changes in tariffs, such as services and remittances, coupled with

fluctuating trade policies, which limited tariffs' direct impact on aggregate economic growth.

3). Multicollinearity Test (Variance Inflation Factor – Vif Test)

Table 4. Multicollinearity Test

Variable	VIF	1/VIF
Year	1.01	0.9856
TR	1.01	0.9856
Mean VIF	1.01	

Source: Authors' creation.

Above table indicates that VIF values for the independent variables are 1.01, with an overall mean VIF of 1.01, which is very low, less than the generally accepted value of 5, indicating that there is no multicollinearity present. This result indicates that, in the context of this model, tariff rates (TR) and the year-time trend variable (Year) do not covary with problematic correlation to one another. Thus, we can estimate the independent effects of tariff changes on economic growth without worrying that the coefficients and standard errors are inflated or distorted due to multicollinearity. Therefore, we can be a bit more confident in our regression results, as the predictors provide independent explanatory power in the model.

4). Stationarity Test (Augmented Dickey-Fuller Test)

Table 5. Stationarity Test

Variable	Test Statistic	1% CV	5% CV	10% CV	P - value	Stationary (p < 0.05)
GDP	-6.390***	-3.730	-2.992	-2.626	0.0000	Yes
TR	-4.221***	-3.730	-2.992	-2.626	0.0006	Yes

Source: Authors' creation.

Note: *, **, and * denote statistical significance levels. *** indicates significance at the 1% level ($p < 0.01$); ** indicates significance at the 5% level ($0.01 \leq p < 0.05$); and * indicates significance at the 10% level ($0.05 \leq p < 0.10$)**

The Augmented Dickey–Fuller (ADF) test was employed to check for stationarity in the time-series variables. The null hypothesis (H_0) states that the variable possesses a unit root and is therefore non-stationary, while the alternative hypothesis (H_1) states that the variable is stationary. As illustrated in Table 5.1, both GDP growth (GDP) and Tariff Rate (TR) reject the null hypothesis of a unit root. The test statistic for GDP is -6.390, which is below all three critical values at the 1%, 5%, and 10% significance levels. The p-value of 0.0000 confirms that the GDP variable is stationary. Similarly, the Tariff Rate (TR) variable has a test statistic of -4.221 and a p-value of 0.0006, both of which indicate that the TR variable is stationary based on conventional significance levels.

In summary, both key variables are stationary at levels and can be used in regression and causality analysis without differencing or any additional transformation. The significance of these findings increases confidence in subsequent econometric analysis because it indicates that the risk of obtaining a spurious regression due to non-stationarity is not present for either of these key variables in this study. In the context of Sri Lanka, the stationarity of GDP and tariffs indicates that both variables have levelled off and followed relatively stable long-term trends indicative of continuous adjustments of the economy and gradual changes in trade policy instead of a short-term structural change.

5). Stability Test for The Var (1) Model

Dependent Variable	Independent Variable	Lag	Coefficient	Std. Error	z-Statistic	p-Value	Significance (p < 0.05)
GDP	GDP	L1	0.5563**	0.2095	2.66	0.008	Yes
	TR	L1	-0.0137	0.054	-0.25	0.8	No
	Constant	–	2.114	1.3409	1.58	0.115	No
TR	GDP	L1	-0.0701	0.3858	-0.18	0.856	No
	TR	L1	0.7732** *	0.0995	7.77	0	Yes
	Constant	–	2.4712	2.4697	1	0.317	No

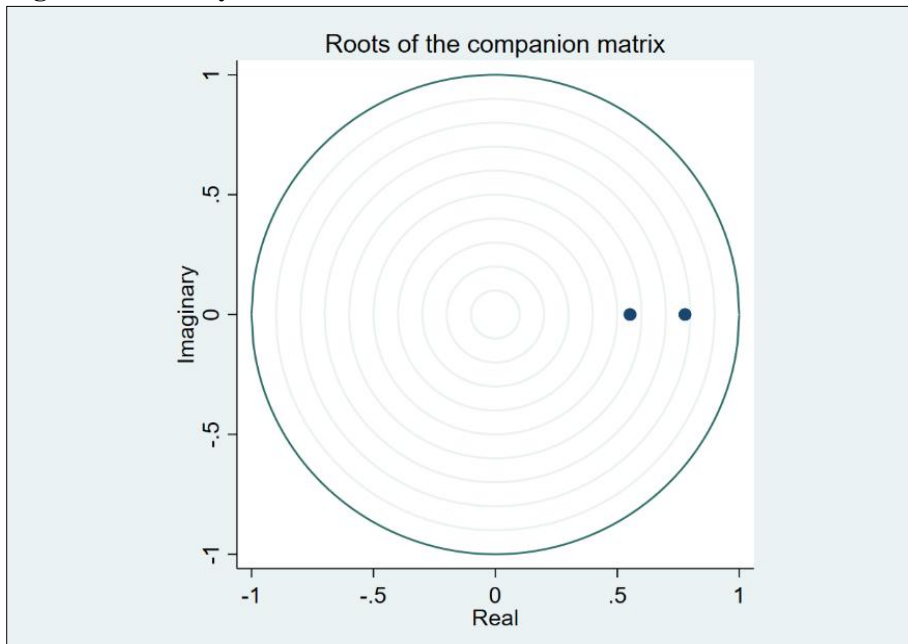
Source: Author's creation

Note: ***, **, and * denote statistical significance levels. *** indicates significance at the 1% level ($p < 0.01$); ** indicates significance at the 5% level ($0.01 < 0.05$); and * indicates significance at the 10% level ($0.05 \leq p < 0.10$)

To verify that the estimated relationships between GDP growth (GDP) and tariff rates (TR) are not spurious, the stability of the Vector Auto regression (VAR) model was evaluated. Stability means that all eigenvalues are within the unit circle. If stability can be assured, the VAR process is stationary, and this allows for the use of the VAR model for impulse response and causality analysis. According to the results of the Vector Autoregression (VAR) model, GDP shows a strong dependence on its own first lag (coefficient = 0.5563, $p = 0.008$), indicating that previous economic growth has a positive and persistent effect on growth in GDP. However, tariffs (TR) do not appear to have a statistically significant short-run impact on GDP ($p = 0.800$), which means that GDP does not change based on a trade policy change in the short run as specified within this model. On the contrary, tariffs (TR) show strong dependence on their own lag. The coefficient for TR at lag 1 is positive and statistically significant (0.7732, $p = 0.000$), indicating that tariff levels are persistent and carry-over time. However, GDP does not have a statistically significant effect on tariffs ($p = 0.856$). Overall, these results imply that GDP is primarily driven by itself, while tariffs show a high amount of internal persistence and little, short-run effect on GDP growth.

6). VAR Stability Test

Figure 6. Stability Test



Source: Author's creation

The stability test demonstrates that all eigenvalues are contained within the unit circle with modulus values of 0.7776 and 0.5520 (both are < 1). This indicates that the VAR (1) model is dynamically stable and thus suitable for additional analysis, such as impulse response functions and variance decomposition. In the Sri Lankan context, this pattern of stability indicates that economic growth is largely self-sustained while tariff modifications provide a limited impact in the short run owing to frequent policy changes and structural rigidities in the trade and production process.

7). Multiple Linear Regression

The regression model assesses the relationship between the first-differenced GDP growth (GDP) as the dependent variable, and tariff rate changes (TR) and a time trend (Year) as independent variables. The model estimates 30 observations. There is not statistically significant of the overall model: $F(2, 27) = 1.35$, $p = 0.276$, and the R-squared estimates that the independent variables only explain 9.1% of the variation in GDP growth. The adjusted R-squared indicates very limited explanatory power of 0.024 after accounting for degrees of freedom

Table 6. Multiple Linear Regression

Dependent Variable: d_GDP	Coefficient	Std. Error	t-Statistic	p-Value	95% Confidence Interval
TR (Tariff Rate Changes)	0.132	0.099	1.34	0.193	-0.071 – 0.336
Year (Time Trend)	-0.064	0.058	-1.11	0.276	-0.183 – 0.054
Constant (_cons)	129.035	116.379	1.11	0.277	-109.754 – 367.825

Source: Author's creation

In general, the multiple linear regression results suggest that tariffs and/or the linear time trend explain minimal variation in Sri Lanka's GDP growth during the study period. While the sign of TR is positive, suggesting a small positive effect should one exist, this estimate is statistically insignificant, indicating that other factors likely unrelated to tariffs have a much greater effect on GDP growth. The low R-squared value and small F-test affirm the model's limitation in explaining the complexity of economic growth, indicating that a more robust alternative method (e.g. VAR analysis or additional explanatory variables) can be assessed to gain greater insight into the relationship between tariffs/economic development. In the context of Sri Lanka, the relationship may be attributable to fragmented trade policy changes, political and economic uncertainty and structural dependencies that reduced the immediate influence of tariff adjustments on GDP growth.

V. POLICY RECOMMENDATIONS

This research with its empirical results identifies some of the practical policy options to the Sri Lankan country. To start with, the policymakers need to focus on the long-term approach of having a steady and moderate tariff regime as opposed to having frequent tariff changes because volatility has been the worst factor in influencing growth compared with the level of tariff. Second, the tariff policy must be accompanied with more inclusive competitiveness strategies, including enhancing logistics related to exportation, lightening regulatory bottlenecks, and encouraging innovation, to contain the long-term depreciation in export performance that has been witnessed in the past in the face of protectionism. Third, because tariff cuts will also be a source of short-term fiscal strain, the government must intensify other sources of non-tariff revenue and simplify how taxes are collected to lessen the dependence on the import duties. Lastly, the transparent and rule-based trade system would increase investor confidence and allow Sri Lanka to become resilient against external shocks to ensure that tariff policy serves the goals of sustainable long-term economic growth instead of the short-term fiscal or political demands.

VI. CONCLUSION AND RECOMMENDATIONS

The main objective of this conference paper is to look at how tariff rates changed between 1990 and 2020 when different governments were ruling Sri Lanka and the implications of these changes for economic outcomes. A detailed analysis of Sri Lanka's tariff policy during 1990-2020 reveals the presence of a complex relationship between the magnitude of tariffs and economic growth. The major findings would be as follows:

Short-run Effects: Reductions in tariffs seemed to stimulate import growth and facilitate short-term growth in trading activity. However, they worsened trade deficits and posed fiscal risks through reduced tariff revenues on imports. Long-term Impacts: Prolonged or perpetually varying tariffs worsened export competitiveness, discouraged investment into value-added productivity sectors, and adversely affected overall growth momentum. Policy Volatility: Recurrent tariff regime switching, prompted by political motives, injected uncertainty among domestic and external investors. Policy volatility constrained the use of tariffs as a tool for development. Interaction with External Shocks: International crises, for example, the 2008 financial crisis, COVID-19, and the 2022 debt crisis, amplified the unwanted effects of unstable tariff policy, which serves the benefit of resilience and predictability of trade regimes.

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