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Trade Dynamics and Labor Income Share: Evidence from Panel Data

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ABSTRACT

Objective: This research aims to determine the effect of different trade dynamics on the labor income share in advanced, developing, and emerging economies.
Research Gap: Research on trade dynamics, such as trade openness, trade diversification, trade competitiveness, and trade globalization, is scarce, particularly in observing their influence on labor market outcomes.
Design/Methodology/Approach: The study used panel data from 2000 to 2019 and employed the GMM estimation technique to address the endogeneity problem.
Main Findings: This current study highlights that greater trade integration can affect the income distribution between labor and capital and lead to a reduced labor share due to increased competition, diversification, and shifts in production patterns and structures.
Theoretical / Practical Implications of the Findings: This study offers meaningful insight into the literature by identifying the relationship between trade dynamics and income distribution. Thus, the study recommends that policymakers implement policies that enhance labor standards and contribute to raising labor income.
Originality/Value: The research is valuable as it provides a comprehensive analysis of the different trade-related dynamics on one of the key labor market outcomes.
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1. Introduction

For advanced, emerging, and developing economies (AED) the impact of trade on labor income share (LISHARE) has been studied by many researchers in past and present eras. However, from the mid-1980s there has been a decline in the LISHARE (Guerriero, 2019). During 1980, LISHARE in advanced economies declined due to the use of technology, and in emerging and developing economies it declined because production resources shifted towards producing more capital-intensive goods. The central reason for the labor share reduction in all the middle-income economies of the world was due to the integration of economies and their association with global value chains (Dao et al. 2017). However, in times of economic calamity, LISHARE raises both in advanced and developing economies, but this does not indicate that wages and income of workers also increase in the same time period (Andic & Burda, 2021). After 2009, there was a radical fall in the LISHARE (Guerriero, 2019). Many other factors can affect LISHARE, such as changes in product and labor market and the greater use of technology in the production process.

One of the major factors that can influence LISHARE is international trade. The trade leads to enhanced labor income for all the workers living in different economies (Sampson, 2014; Helpman et al., 2010). In recent eras economic and technological development has taken place due to international trade (Daumal, 2010). Meanwhile, various trade indicators influence LISHARE, especially the income share that is attached to workers' earnings and wages are always considered a debated issue by various researchers.

In the previous decades, trade among economies has increased, but many economies of the world have faced a severe decline in LISHARE, focusing many economists to find the relationship between trade indicators, trade policies, globalization, and labor market outcomes (LM).

Foreign trade is a major factor that laid down the basis for economic development; it helps to achieve higher economies of scale, minimizes production expenditure, and fosters labor income (Balaguer & Cantavella-Jorda, 2002). Trade provides proper resource allocation, improves firm and economic competitiveness levels, raises living standards by providing maximum job opportunities, and ultimately enhances labor income. During the era of the 1960's in the developing economies trade grew more compared to economic growth. One of the reasons for this is that firms mainly produce less capital-intensive products, which further enhance workers' demand and earnings (Edwards, 1998).

In our study, we use different dimensions of trade that can affect LISHARE, firstly, trade openness (TOPEN). The TOPEN can alter the development patterns of economies, mainly through exports it perks up economies of scale, proper allocation of resources takes place, and significantly boosts improvement in LM. Thus, through TOPEN production patterns improved and better production of goods took place showing that trade provides gain to everyone. In the view of the H-O theorem trade will transfer employment benefits from the importing segment to the export sector, thus improving workers' jobs and income in that sector (Iqbal & Nosheen, 2016). Conversely, many of the researchers highlight that there is a reduction in the demand for labor due to the expansion of trade. On the other hand, Yanikkaya (2013) high light TOPEN does not play a momentous part in generating job opportunities within developing economies, and higher trade volumes also do not contribute a beneficial effect on the employment level of developed economies of the world, thus reducing LISHARE. However, globally, TOPEN is driving economic reform, though its impact on the LISHARE remains ambiguous. Every economy has a different economic structure; furthermore, TOPEN can affect each economy in a different way. Therefore, exploring this link plays a decisive role in formulating strategies that ensure that gains from TOPEN are distributed moderately between the laborers and the firm.

The next trade dynamic of our study is trade diversification (TDIV). Despite this fact, the evolution of TDIV is analyzed in studies conducted by (Klinger & Lederman, 2006; Cadot et al., 2011). TDIV is a shift in structure that occurs in economies due to expansion in their trade range (Dennis & Shepherd, 2007). Through diversification, there occurs diversity in the export basket and workers can acquire higher labor income (Acemoglu & Zilibotti, 1997). The Michael is first one who introduces concept of export diversification (Michaely, 1977).

Export diversification can affect employment and labor incomes through the channel of technology spillover (Agosin, 2009). Through TDIV demand for unskilled labor shrink hurting workers productivity and incomes (Edwards & Golub, 2004). TDIV brings significant changes in the composition of an economy's exports and production level, thus affecting the LISHARE. TDIV often supports the capital-intensive industries, thus reducing labor income. So, considering this association is vital for evaluating how trade strategies help the economies to achieve inclusive growth by protecting labor interests and reducing inequality among laborers.

Trade competitiveness (TCOM) can influence LISHARE. Competitiveness is the capacity of economies to sell different merchandise and services in the market although in the long term, the incomes of the workers rise as it enhances the employment rate (Porter Michael, 1990). A lot of economists predict that competitiveness can be achieved at the firm level (Krugman, 1996). In low-income economies, labor is available easily and not very expensive, so with the development in trade, employment opportunities and wages of labor increase (Van Ha & Tran, 2017). In addition to that firms in high-income economies demand labor from low-income economies to produce different products and this would enhance their TCOM level. According to Porter Michael (1990) numerous benefits, contributing to a sufficient rise in labor income. On the other hand, less productive firms cannot survive in any high-tech industries, due to competition. Thus, this leads to a shrink in worker benefits and income (Konings & Vandenbussche, 1995). TCOM has a mixed and theoretically uncertain impact on LISHARE through numerous transmission mechanisms. It can enhance labor income by enhancing labor productivity.

On the other hand, it can trim down labor income by cost-cutting, and due to worldwide competition exists among economies. In order to get a better understanding of how TCOM can affect LISHARE, we incorporate this variable in our study, as it can measure the performance of the economy and has a direct implication for LISHARE. Exploring the link between TCOM and LISHARE can help in investigating whether the benefits of trade are shared with the laborers or limited only to firms, thus, making it more important for the economic strategy formulation.

Trade globalization (TGLOB) is one of the main variables that affect LISHARE. Due to globalization a lot of drastic changes occur in foreign trade, with the emergence of globalization nationwide economies convert into global economies (Appeleyard & Field, 2014). Trade between economies increases multiple times due to globalization (Ortiz-Ospina et al., 2018). According to Rama (2003) Millennium Development Goals can be attained with the occurrence of globalization, leading to enhanced labor income. In the view of Nurmi (2004), globalization plays an important role in stabilizing the economies, when they face any severe kind of shocks, hence it also does not affect worker incomes in advanced economies. Intriligator (2009) determined that middle-income economies obtain advantageous gains from globalization because it helps them handle various shocks and risks. TGLOB has notable effect on LISHARE as it changes the production patterns, enhancing foreign competition and support the use of new technologies. Thus, investigating this link is critical for examine the distributional effects of globalization and designing suitable policies that discourage the biased distributional consequences.

Limited research is available which discovers the relationship between trade dynamics and LISHARE. A noticeable gap is however left in the existing literature concerning the influence of the trade dynamics on LISHARE. Beside filling the gap in the literature, this study contribute in providing a deep economics understanding of how the global integration will affect the LM and distribution of income patterns, thus making it significant for understanding the academic inquiry and actual policy debates.

1.2. Significance of Study

This study contributes to the literature in numerous ways. To the best of our knowledge, none of the exceptionally few studies have investigated the influence of different trade dynamics on LISHARE. So, to some extent, this study facilitates filling the knowledge gap, and it extends the empirical debate by determining how different trade indicators have affected LISHARE within an integrated framework, to handle the constraints of different studies that address these factors only in isolation. This study also examines how different globalization indicators, capital intensity, and institutional quality affect LISHARE across advanced, emerging, and developing economies. By using these indicators in the study, we aim to determine how these trade-related theories benefit or harm the labor market. Additionally, this study also adds methodologically by using dynamic panel data techniques, which help to solve the problem of endogeneity and the problem of unobserved heterogeneity by providing more robust results. Furthermore, by using a dataset of many countries for a limited time period, this study will provide more generalizable results for diverse economic contexts. Lastly, the findings of the study will help policymakers in implementing balanced economic policies that stress the point that structural as well as external economic and market-driven forces will affect income distribution. The study also helps policymakers to formulate policies that are beneficial for the economy and labor market. Some of the significant studies by (Guscina, 2007; Guerriero & Sen, 2012; Doan & Wan, 2017) are very important; however, they also have some limitations in exploring the link between TD and LISHARE.

1.3. Theoretical Framework

This study is based on the set of complementary theoretical viewpoint that guide how the structural and the external or market driven forces can affect the LISHARE distribution within the different economies. The traditional trade theories lay stress on comparative advantage that changes occur in different economies, due to technological advancement (Ricardo, 1817). In the view of the Heckscher-Ohlin (H-O) theorem due to comparative advantage trade emerged between different nations and they sold those products which they could produce fluently and factor endowed (Heckscher, 1919). From a neoclassical perspective, different trade dynamics affects LISHARE through changes in allocation of different factors, whereas increased level of integration possibly will change the relative returns to manual labor and capital. Stolper and Samuelson focus on a point that due to comparative advantage not only do economies achieve gains but labor market performance also improves with the help of trade (Deardorff, 1994). So, foreign trade is to some extent is positive sum game, different economies trade

with different economies to produce and consume those goods that they cannot produce by them self alone due to limited production as well as technological capacity (Vijayasri, 2013). These different theories highlight that LISHARE is not affected by only single factor but it is determined by the interaction of different economic factors and trade dynamics.

1.4. Framework of Study
The section 2 and 3 of study represents the literature review and details about data, variables, and methodology used in this paper. The section 4 and 5 provides results of estimation and conclusions on the basis of empirical outcome of the study.

2. Literature Review
In this chapter of study we try to find how trade indicator effect on wage and employment in order to find their impact on LISHARE.

2.1. Trade Openness
The classical economists and their trade theories proposed by Adam and David Ricardo highlight the importance of trade and consider trade as the main element of development. They focused on the point that trade can expand the market size of economies and maximum returns on economies of scale are realized through proper labor specialization and division. According to Furusawa and Lai (1999) TOPEN will decrease job insecurity and improve the employment rate leading to enhanced LISHARE. Some researchers view TOPEN as a channel through which labor demand increases and creates employment opportunities for skilled and unskilled laborers (Njikam, 2016; Vashisht, 2016). In the same way, El-Ghamrawy (2014) carries out research to explore the link between employment rate, TOPEN, and worker earnings. The findings showed that trade helped in creating labor employment and if the labor employment rate rose, then labor income boosted. Guscina (2007) analyzed the influence of TOPEN on LISHARE using data from 1960 to 2000. Empirical results show that TOPEN has an inverse effect on labor share, analogous to the theoretical findings of the H-O trade theories. Between the periods of 1980–2010 Doan and Wan (2017) authenticated that trade is a major driver of the LISHARE.
Maiti (2019) explored the influence of foreign trade on LISHARE using data from 1998 - 2014 for Indian industries. The findings of the study show that trade have a pessimistic association with LISHARE. The relationship between TOPEN and LISHARE is highly debated in the literature. Some of the studies highlight that TOPEN will lead to enhanced labor demand and labor productivity, which leads to enhanced LISHARE, and many studies investigate that TOPEN will reduce the bargaining power of labor and favor capital-intensive products, thereby reducing LISHARE. These findings show mixed results, showing that it is affected by factor endowment and labor market conditions. The previous studies scrutinize these channels in isolation, emphasizing that there is a need for a strong, integrated methodical framework.

2.2. Trade Diversification
The classical trade theories analyzed that economies should focus on manufacturing products in which they are capable of attaining maximum comparative advantage. Thus, specialization in exporting goods will lay down the basis of TDIV, which amplifies the production process, employment, and labor income. Trade diversification has an optimistic impact on labor income; it stimulates the demand for labor leads to enhanced labor wages, and expands the product range in the market and employment level (Dennis & Shepherd, 2007). Diversification sometimes creates differences in skilled and unskilled labor demand, reducing wages for unskilled workers and causing a cut in LISHARE (Edwards & Golub, 2004). A study conducted for 18 different economies from the time period 2011 to 2023 showed that different trade variables have an optimistic relationship with workers' income (Shaheen, 2025). The effect of TDIV on LISHARE is not precise and shows some challenging theoretical perspectives. Some studies emphasize that TDIV expands the production base and reduces external shocks, leading to higher employment rates and LISHARE. However, some other studies explore that TDIV will lead to the use of more capital-intensive technologies that amplify the gain of capital owners and reduce LISHARE.
This divergence is due to the sectoral change and absorptive capacity of the labor. The earlier studies are unable to determine how TDIV will influence LISHARE. So this study helps in determining the exact relationship between TDIV and LISHARE.

2.3. Trade Competitiveness

Trade competitiveness has impacts on LISHARE. In the view of classical economists and neoclassical economists competitiveness can act differently, it may be categorized as a dynamic process related to competition, while others think, it would improve market structures (Klimašauskienė, 2007).Competitiveness is the capacity of an economy to trade different goods in the market and boost the income of workers for a longer period. Furthermore, competitiveness in exports will help the economy to be involved and participate in different export markets, leading to an optimistic impact on labor income (Bruneckiene & Paltanaviciene, 2012). With the increase in trade competition, the inefficient firm loses its ability to stay in the market, thus contributing to a diminution in LISHARE (Bernard et al. 2007). Revenga (1992) explores the link among competition on import, employment rate, and wage level by using a time range from 1977 - 1987. The finding shows that the prices of imports have a momentous outcome on the employment rate and wage rate. The study conducted by Endoh (2018) explores the impact of import competitiveness on wage rates while covering data from 1998–2013. The empirical result of the study shows that both these variables have a significant relationship with each other.

The link between TCOM and LISHARE is theoretically vague and commonly debated in the literature. One group of studies highlights that TCOM will enhance export performance, enhancing the production of goods and demand for labor in the competitive industries. But on the other hand, TCOM depends on cost-cutting policies such as reduction of wages, flexibility of labor, and automation of machinery, which results in a reduction of LISHARE. The above channel shows that TCOM influenced LISHARE through various economic factors and labor market regulations. On the other hand, this study provides a more detailed analysis of how TCOM will change LISHARE by using a more robust empirical framework. Thus, addressing the gap present in existing research.

2.4. Trade Globalization

Globalization is an integration process that inflates international trade in various economies (Ortiz-Ospina et al., 2018). Furthermore, Tytell and Jaumotte (2008) analyze that due to globalization process LISHARE increased. Although, variations in labor market occur due to globalization, and any negative shock in labor market is easily handle by economies, which further have numerous impact on labor demand and wages.

Additionally, Doan and Wan (2017) focus on the role of globalization and consider it as most important determinant of labor income. Subsequently, conclude that exports reduce and import enhances the LISHARE. Harrison (2005) and Guscina (2007) analyze that in industrialized economies, globalization will erode LISHARE. Tytell and Jaumotte (2008) analyzed the influence of globalization on LISHARE, while covering data of 18 advanced countries from 1982 to 2002 empirical results suggested that globalization hurts LISHARE. Hung and Hammett (2016) explored the influence of globalization on LISHARE from 1999 to 2009, indicating that globalization will cut LISHARE. The literature on TGLOB and LISHARE presents inconclusive evidence. Whereas some studies predict that TGLOB will increase LISHARE through increased availability of market access and generate employment opportunities for laborers. Others stated that it decreases LISHARE by enhancing capital-related production and enhancing foreign competition in the markets. So these mixed results suggest that the relationship between these two variables is context-dependent and differs from one economy to another. Consequently, this study contributes to the existing literature by giving a more inclusive and cohesive examination of how TGLOB affects LISHARE by taking into accounts several transmission mechanisms within a steady critical framework. This study also allows more knowledge about the distributional consequences of TGLOB on LISHARE. This study not only observes the positive influence of TGLOB on LISHARE but also investigate how this association is influence by different moderating variables.

3. Methodology, Data Source and Descriptive Statistics

This study used the System GMM technique to examine how different trade dynamics affect LISHARE. This technique is valid to use as the distribution of labor income is dynamic in nature, and the past level of LISHARE affects current LISHARE outcomes. Furthermore, TOPEN and TGLOB are endogenous together as they are determined by labor market conditions, leading to reverse causality and measurement error. So this technique can easily solve the problem of omitted variable bias, endogeneity, and measurement error. System GMM is used because the model has endogeneity and dynamic behavior across various economies**,** so, it solves the problems by using internal instruments more accurately.

Table 1: Descriptive Statistics

Variables	SUM	S.D	Minimum	Maximum
Advanced Economies				
LISHARE	4.037	.107	3.600	4.282
TOPEN	4.561	.633	2.986	6.092
TDIV	-2.552	.495	-3.398	-.417
TCOM	.131	.385	-.908	1.274
TGLOB	4.296	.151	3.742	4.565
ECGLOB	4.337	.123	3.848	4.549
SOGLOB	4.410	.0708	4.123	4.524
PPGLOB	4.394	.238	3.301	4.586
TOT	4.585	.157	3.916	5.299
RER	4.599	.122	4.053	5.0561
KI	12.964	.544	10.036	13.620
HC	1.131	.286	-.503	1.4705
RLGDP	26.450	1.767	22.673	30.538
INFL	0.566	0.861	-4.791	2.735
GOVTEXP	3.679	.306	2.492	4.202
FD	-.473	.368	-1.777	0.000
INQ	4.388	.117	3.844	4.565
FDI	23.038	1.738	17 .686	26.078
Developing Economies				
LISHARE	3.775	.219	3.063	4.334
TOPEN	4.079	.801	-1.787	5.349
TDIV	-2.056	.676	-3.305	-.408
TCOM	.732	.837	-2.043	3.606
TGLOB	3.722	.308	2.818	4.352
ECGLOB	3.762	.256	2.999	4.237
SOGLOB	3.559	.326	2.406	4.265
POGLOB	4.048	.274	2.755	4.4561
TOT	4.770	.309	4.035	5.774
RER	4.741	2.628	-3.112	9.949
KI	9.924	.975	7.620	12.499
HC	.582	.275	.067	1.276
RLGDP	23.517	1.067	20.155	26.89
INFL	1.741	1.084	-3.207	6.242
GOVTEXP	3.100	.305	1.726	3.934
FD	-2.135	.411	-3.5888	-.753
INQ	3.971	.203	3.111	4.243
FDI	17.377	2.101	12.941	20.859
Emerging Economies				
LISHARE	3.751	.266	2.701	4.165
TOPEN	4.203	.462	3.084	5.395
TDIV	-2.313	.644	-3.441	-.264
TCOM	.005	.729	-2.337	3.416
TGLOB	3.963	.315	3.093	4.534
ECGLOB	3.994	.242	3.244	4.466
SOGLOB	4.0490	.246	3.075	4.424
POGLOB	4.314	.205	3.651	4.539
TOT	4.791	.316	4.006	6.128
RER	2.969	2.655	-1.313	10.127
KI	11.823	.858	9.776	14.006
HC	.917	.203	.2600	1.286
RLGDP	12.263	1.210	9.499	16.261
INFL	1.615	1.180	-2.922	11.088
GOVTEXP	3.373	.321	2.425	4.198
FD	-1.159	.488	-2.744	-.284
INQ	4.163	.132	3.789	4.426
FDI	.782	1.408	-3.753	3.729

Source: Author's Own Calculations

This technique reduces the estimator bias and gives a valid result if the sample size is small, and gives a more robust result when the variables in the given model are constant, and is best suited for the structure of our dataset.
In order to study the impact of different trade dynamics on LISHARE, a panel data on developing, advanced and emerging economies from time 2000 to 2019 has been taken from different sources such as WDI, UNCTAD, KOF index of globalization, Pen world table, WITS, IMF, ICGR and ILO Stat and transformed into natural log form. In this study we use Generalized Method of Moments (GMM) estimation technique. In this research GMM technique is used to find a association between different trade indicators and LISHARE. The dependent variable of study is LISHARE is measured as LISHARE % of GDP annual. The main independent variable such as trade openness (TOPEN) measured in Trade as % of GDP. The TDIV measured by using Revealed comparative index, TCOMP is measured using HH Market concentration index and TGLOB is measured using sum of defacto and dejure trade liberalization. The control variables such as GDP is measured at constant 2010 US dollar, Exchange Rate (RER) is measured as Real effective exchange rate index, Terms of Trade (TOT) is considered as net barter terms of trade index, Capital intensity (KI) is obtained bydividing Real Capital Stock by Employment, Financial development (FD) is measured as private credit to GDP ratio, Government expenditure (GOVTEXP) is measured as GOVTEXP % of GDP. Human capital (HC) is measured based on the average years of schooling and a Rate of return to education is assumed, Foreign direct investment (FDI) is measured as net inflows as percent of GDP, Inflation (INFL) as consumer price index, annual percentage, Economic globalization (ECOGL), Political Globalization (POLGL), Social Globalization (SOCGL) is measured as Sum of defacto and dejure index of ECGLOB, POGLOB and SOGLOB. Institutional Quality (INQ) measured by adding all component of INQ.

3.2. Model Specification

The goal of this study is to inspect the different determinant of LISHARE, by focusing on the different trade dynamic (TD) and globalization indicators. The determinant of LISHARE is taken in this study is based on the work of (Guscina, 2007; Guerriero & Sen, 2012; Doan & Wan, 2017).
Hence, the resultant empirical model takes the form as;

$$LM_{it} = f(TD_{it}) \quad (3.1)$$

Equation 3.1of the study shows that how different trade dynamics (TD) effect labor market outcomes (LM).

$$LISHARE_{it} = f(TD_{it}) \quad (3.2)$$

The equations 3.2 show that the LISHARE is the function of different TD. The different indicators of TD are used to show how they affect LISHARE.
The final equation of the study is given below:

$$LISHARE_{it} = f(TOPEN_{it} + TGLOB_{it} + TDIV_{it} + TCOMP_{it}) \quad (3.3)$$

The effects of trade dynamics such as TOPEN, TCOMP, TDIV and TGLOB on LISHARE are shown in equation 3.3
However, in literature various determinants of LM are examined, but in our study we used most commonly used LM determinants to overcome with the problem of specification bias.
By including all major determinants of LM the final general form of our model is as follows:

$$LISHARE_{it} = f(TOPEN_{it} + TGLOB_{it} + TDIV_{it} + TCOMP_{it}) + BX_{it} + \mu_{it} \quad (3.4)$$

In the equation 3.4 X_{it} represent the control variables used in our study. μ_{it} is the error term of our study.

The final empirical form of the study is as follows, where as our model contain five equations for LISHARE ranging from 3.5 to 3.9.

$$LISHARE_{it} = \alpha_0 + \alpha_1 TD_{it} + \alpha_2 HC_{it} + \alpha_3 INQ_{it} + \alpha_4 FD_{it} + \alpha_5 GOVTEXP_{it} + \alpha_6 TOT_{it} + \alpha_7 INFL_{it} + \alpha_8 POGLOB_{it} + \alpha_9 ECGLOB_{it} + \alpha_{10} SOGLOB_{it} + \alpha_{11} RER_{it} + \alpha_{12} FDI_{it} + \alpha_{13} RLGDP_{it} + \alpha_{14} KI_{it} + u_{it} \quad (3.5)$$

$$LISHARE_{it} = \beta_0 + \beta_1 TOPEN_{it} + \beta_2 HC_{it} + \beta_3 INQ_{it} + \beta_4 FD_{it} + \beta_5 GOVTEXP_{it} + \beta_6 TOT_{it} + \beta_7 INFL_{it} + \beta_8 POGLOB_{it} + \beta_9 ECGLOB_{it} + \beta_{10} SOGLOB_{it} + \beta_{11} RER_{it} + \beta_{12} FDI_{it} + \beta_{13} RLGDP_{it} + \beta_{14} KI_{it} + u_{it} \quad (3.6)$$

$$LISHARE_{it} = \beta_0 + \beta_1 TDIV_{it} + \beta_2 HC_{it} + \beta_3 INQ_{it} + \beta_4 FD_{it} + \beta_5 GOVTEXP_{it} + \beta_6 TOT_{it} + \beta_7 INFL_{it} + \beta_8 POGLOB_{it} + \beta_9 ECGLOB_{it} + \beta_{10} SOGLOB_{it} + \beta_{11} RER_{it} + \beta_{12} FDI_{it} + \beta_{13} RLGDP_{it} + \beta_{14} KI_{it} + u_{it} \quad (3.7)$$

$$LISHARE_{it} = \beta_0 + \beta_1 TGLOB_{it} + \beta_2 HC_{it} + \beta_3 INQ_{it} + \beta_4 FD_{it} + \beta_5 GOVTEXP_{it} + \beta_6 TOT_{it} + \beta_7 INFL_{it} + \beta_8 POGLOB_{it} + \beta_9 ECGLOB_{it} + \beta_{10} SOGLOB_{it} + \beta_{11} RER_{it} + \beta_{12} FDI_{it} + \beta_{13} RLGDP_{it} + \beta_{14} KI_{it} + u_{it} \quad (3.8)$$

$$LISHARE_{it} = \beta_0 + \beta_1 TCOMP_{it} + \beta_2 HC_{it} + \beta_3 INQ_{it} + \beta_4 FD_{it} + \beta_5 GOVTEXP_{it} + \beta_6 TOT_{it} + \beta_7 INFL_{it} + \beta_8 POGLOB_{it} + \beta_9 ECGLOB_{it} + \beta_{10} SOGLOB_{it} + \beta_{11} RER_{it} + \beta_{12} FDI_{it} + \beta_{13} RLGDP_{it} + \beta_{14} KI_{it} + u_{it} \quad (3.9)$$

4. Result and Discussion

This section of the paper shows an empirical investigation and confers the empirical finding of the study. To substantiate the impact of different trade dynamics on LMO, such as LISHARE, we used the instrumental variable GMM approach with the fixed effect to estimate the model.

Tables 2, 3 and 4 contain the empirical result for advanced, developing and emerging economies. The F-test for all economies is significant. The under-identification test also indicate that all the estimated equations are identified. Also, the Hansen J statistic shows that all instruments are valid.

Table 2: LISHARE and TD in Emerging Economies

Dependent Variable: LISHARE

	TOPEN		TDIV		TCOM		TGLOB	
Independent Variables	Coefficient	P>|z|	Coefficient	P>|z|	Coefficient	P>|z|	Coefficient	P>|z|
OPEN	-0.06	0.31						
TDIV			0.43^^	0.02				
TCOMP					-0.05^^^	0.01		
TGLOB							0.15^	0.06
GOVTEXP	0.19	0.01	-0.23^^^	0.00	-0.23^^^	0.00	-0.15^	0.08
FD	-0.11	0.80	-0.00	0.49	-0.06	0.27	0.02	0.74
INQ	0.05	0.69	0.06	0.49	0.06	0.48	0.00	0.98
TOT	-0.18^^^	0.01	-0.16^^^	0.00	-0.16	0.01	0.23^^	0.03
ECGLOB			-0.09	0.49	-0.05	0.55		
SOGLOB	-0.36^^	0.02	-0.30^^	0.02	-0.321^^	0.01	-0.35^^	0.048
POGLOB	-0.08	0.37	-0.23^^^	0.01	-0.13	0.15	0.12	0.43
RER	0.17^^^	0.00	0.14^^	0.02	-0.12^^	0.05	0.197^^^	0.01
HC	0.36	0.13	0.41^	0.10	0.39^	0.10	0.60^	0.07
KI	-0.41^^^	0.00	-0.36^^^	0.00	-0.30^^^	0.00	-0.41^^^	0.00
RLGDP	0.49	0.00	0.43^^^	0.00	0.37^^^	0.00	0.61^^^	0.00
INFL	-0.00	0.57	-0.00^	0.07	-0.00	0.99	-0.00	0.23
FDI	0.00	0.30	-0.00	0.63	.000	0.62	0.00	0.76
F- Stat	5.18^^^		3.53^^^		4.75^^^		2.31^^^	
UnderIdentificationTest	58.17		63.06		64.24		48.57	
Hansen J Statistics	0.32		0.83		0.52		0.32	

Author own calculations

Table 3: LISHARE and TD in Developing Economies

Dependent Variable: LISHARE

	TOPEN		TDIV		TCOM		TGLOB	
Independent Variables	Coefficient	P>|z|	Coefficient	P>|z|	Coefficient	P>|z|	Coefficient	P>|z|
TOPEN	-0.01	0.35						
TDIV			0.03^	0.07				
TCOM					-0.02^	0.10		
TGLOB							0.07^^	0.05
GOVTEXP	-0.80^^^	0.01	-0.06^^^	0.00	-0.06^	0.07	-0.10^^^	0.00
FD	-0.02^^	0.04	-0.07^^	0.04	-0.04^	0.06	-0.041^^	0.02
INQ	0.12^	0.06	-0.09	0.37	-0.02	0.79	0.07	0.31
TOT	0.03^	0.07	-0.02	0.33	0.33^	0.06	-0.42^^^	0.01
ECGLOB			-0.05	0.37	-0.07	0.22		
SOGLOB	-0.19^^^	0.01	0.08	0.11	-0.13^	0.06	-0.19^^^	0.01
POGLOB	0.12^^	0.04	0.16^^	0.04	0.13	0.11	0.11^^	0.04
RER	-0.04	0.23	0.03	0.43	-0.02^	0.06	-0.00	0.95
HC	0.12^^^	0.00	0.56^^	0.03	0.77^^^	0.01	0.93^^^	0.01
KI	-0.02	0.48	-0.17^^^	0.00	-0.03	0.31	0.00	0.86
RLGDP	-0.15^^	0.02	-0.25^^^	0.00	-0.02^^^	0.01	-0.13^^	0.03
INFL	-0.00^^^	0.00	-0.00^	0.05	-0.00^^	0.02	-0.00^^^	0.01
FDI	-0.00	0.69	-0.00	0.45	0.00	0.75	0.00	0.25
F-Stat	2.58^^^		4.31^^^		2.66^^^		3.78^^^	
Under Identification Test	24.84		37.41		31.01		31.84	
Hansen J Statistics	0.58		0.29		0.26		0.36	

Author own calculations

Our estimated results for emerging and developing economies indicate that the value of TOPEN is negatively insignificant. Thus, for emerging and developing economies 1% raise in TOPEN will lead to 0.059% and 0.005% percent decline in LISHARE. Consequently, in the case of emerging and developing economies, our results are consistent with the result of (Harrison, 2005; Guscina, 2007; Dünhaupt, 2017). But in the case of advanced economies, our estimated empirical results show that a one percent increase in TOPEN will lead to enhanced LISHARE by 0.096 percent. The study of Njikam (2016) and Guerriero and Sen (2012) confirm our results that TOPEN helps in enhancing LISHARE. The relations between TOPEN and LISHARE are supported by many trade-related theorems, such as the H-O theory, which highlights that TOPEN changes the production factors demand, leading to enhanced labor demand that in turn boosts the labor wage and labor income. According to the Stolper–Samuelson Theorem, TOPEN can decrease the return on the scarce factors that are present in the economies and increase the return on the abundant factors. So, this shows that TOPEN can enhance or reduce the LISHARE, therefore making it a momentous variable for the analysis.

Another important variable included in our study is TDIV which can influence LISHARE. Our estimated result for emerging and developing economies indicates that the slope coefficient has a positive and significant impact showing that a one percent increase in TDIV will bring 0.425 and 0.028 increase in LISHARE and at 5 % and 10 % level it is significant. Our computed results are similar to the study of (Dennis & Shepherd, 2007; Acemoglu & Zilibotti, 1997).

Table 4: LISHARE and TD in Advanced Economies

Dependent Variable:	**LISHARE**							
	TOPEN		TDIV		TCOM		TGLOB	
Independent Variables	Coefficient	P>|z|	Coefficient	P>|z|	Coefficient	P>|z|	Coefficient	P>|z|
TOPEN	0.10^^	0.04						
TDIV			-0.03	0.13				
TCOM					0.486^	0.08		
TGLOB							0.22^	0.09
GOVTEXP	0.01	0.77	0.089	0.12	0.12^^^	0.01	0.03	0.70
FD	0.23^^^	0.01	0.26^^^	0.00	0.23^^^	0.00	0.26^^^	0.00
TOT	0.10^	0.06	0.08	0.14	0.63^	0.09	0.09	0.13
ECGLOB			0.48^^^	0.00	0.49^^^	0.00		
SOGLOB	0.98^^^	0.00	0.67^^	0.02	0.36^	0.10	1.11^^^	0.00
POGLOB	-0.12	0.47	0.03	0.87	0.14	0.28	-0.12	0.45
RER	-0.16^^^	0.00	-0.11^^^	0.00	-0.10^^^	0.00	-0.13^^^	0.00
HC	0.94^^^	0.01	0.62^^	0.04	0.58^	0.01	0.77^^	0.03
RLGDP	-0.76^^^	0.00	-0.60^^^	0.00	-0.48^^^	0.00	-0.72^^^	0.00
KL	-0.03	0.80	-0.09	0.52	-0.03	0.79	-0.07	0.60
INQ	0.58^^^	0.00	0.48^^^	0.00	0.52^^^	0.00	0.50^^^	0.00
INFL	0.01^^	0.04	0.01^	0.06	0.61^^	0.05	0.01^	0.07
FDI	-0.00^	0.04	-0.00^	0.06	-0.00	0.15	-0.00^^	0.04
F-Stat	7.55^^^		8.48^^^		8.16^^^		6.54^^^	
Under identification Test	26.23		32.25		37.13		28.16	
Hansen J Statistics	0.23		0.12		0.14		0.21	

Note ^, ^^, ^^^ denote significance at 10, 5 and 1 percent level of significance for all tables.
Source: Author estimation

In the case of advanced economies, the estimated results signify with 1% rise in TDIV resulting in a 0.029 percent decline within LISHARE. Our empirical results are consistent with the results of Edwards & Golub, (2004). Furthermore, the link between TDIV and LISHARE is underpinned by many structural trade theories. TDIV can diversify the range of export-related products and promote the shift of resources toward the labor-intensive sector. So, this process generates employment opportunities, enhancing LISHARE. TDIV shrinks the exposure to the external shocks, which further enhances the labor income. On the other hand, if the TDIV promotes the production of capital-intensive products, then the demand for labor in the market will decrease, leading to reduced LISHARE. Hence, the TDIV is one of the important factors that can influence LISHARE by generating employment opportunities and supporting structural transformation.

TCOM has a greater influence on LISHARE through productivity, demand for factors, and market structure. According to Ricardo, many economies in the world compete with each other based on differentiation in their productivity level. If an economy can produce more labor-intensive products, then in that economy, wages and incomes of workers increase, whereas, LISHARE is reduced in the economy, where the demand is decreasing. For emerging and low incomes countries our empirical findings show that the 1% rise in TCOM will lead to a 0.046% and 0.021% decline in LISHARE and it is significant at 10% and 1%. But for advanced economies, it is positive and significantly related to LISHARE. Trade competition has a destructive impact on firm output and unproductive firms would leave the market, shrinking the aggregate employment and wage rate and causing a serious turndown in labor income (Bernard et al., 2007; Schwellnus et al., 2018). In the case of advanced economies, our empirical result shows the link between trade competitiveness and labor income share is positively significant. The finding of Revenga (1992) is also similar to our estimated results. Its consequence can be constructive and unconstructive depending on whether from the increased in level of competitiveness labor gain enhance or shrink making it more vital to study.

We have also analyzed the impact of TGLOB on LISHARE. TGLOB can be supported by the New Trade Theory, which focuses on economies of scale. This shows that if a firm produces more efficiently, then the cost per unit will be reduced. When all economies are involved in foreign trade, firms can easily access foreign markets, having more opportunities to produce at a higher level and become competitive in the market. Hence, TGLOB is one of the major determinants that can affect LISHARE The relationship between TGLOB and LISHARE is highly positive and significant for all the estimated equations of our model. For all economies, our result shows that a one percent increase in TG will bring a 0.147, 0.067 and 0.216 percent increase in LISHARE and it is statistically significant. Our empirical results also confirm the findings of Krüger (1983) and Faridi and Chaudhry (2013) which indicate that a higher level of globalization will enhance labor-intensive production and with time perk up the wage rate and LISHARE.

The results of all extraneous variables of our study are robust across all estimated equations.

The GOVTEXP is one of the most significant policy variable that can affect LISHARE through various channels, so, that why we incorporate this variable in the study. GOVTEXP plays a significant role in determining LISHARE, and it is supported by many economic theories. In the Keynesian viewpoint, with the increase in the GOVTEXP level, demand for labor will also increase in the economy as to produce more good more labor is needed for that reason LISHARE also enhanced. Our empirical result for GOVTEXP has linked negatively significance with the LISHARE for developing economies, while our findings are similar to the findings of (Stockhammer, 2017). For advanced and emerging economies, our empirical finding shows a positive relationship between GOVTEXP and LISHARE. Ali & Audi (2023) and Munir et al. (2024) also confirm our result that GOVTEXP has an optimistic influence on LISHARE through the provision of different products and services (Ali & Naeem, 2017).

One of the central growth indicators of the financial industry is the FD (Bui, 2019). FD has diverse effects on the deprived and affluent economies. Our empirical results depict that FD taking place in developing and middle-income economies is pessimistic, analogous to the results of (Popov & Rocholl, 2015). However, the findings of Guillaumont et al. (2006) and Cherif and Dreger (2016) are similar to our findings, which depict that FD improves LISHARE in advanced economies. Hence, FD provides a more valid strategy to the government on how employment, wage and labor income can be affected by the implementation of financial sector reforms.

The FDI is included in the estimated model of our study due to its strong underpinned theoretical background in spillover theory and endogenous growth theory, which emphasize its role in rising labor demand and LISHARE. In emerging economies, most of the estimated results show that FDI and LISHARE are associated positively. The findings of Dufaux (2010), Rizvi and Nishat (2009) and Saurav and Kuo (2020) are similar to our empirical result showing that the FDI spillover effect had an optimistic impact on job creation and wage rate, leading to a rise in LISHARE. In advanced and developing economies, FDI exerts a negative association with LISHARE. Similar findings were obtained by (Hu et al., 2020). Hence, the use of FDI to determine how it affects LISHARE is very important to give more valid and policy-related empirical results.

The INQ is one of the key determinants that can directly affect LISHARE, as it also helps determine how income can be distributed between labor and capital. It is included in the model because it is based on Endogenous Growth Theory, which posits that INQ promotes an innovation and encourages firms to work more efficiently and pay higher wages, thereby enhancing the LISHARE. The results show that in some economies, INQ does not help in improving LISHARE. For developing economies, our estimated results indicate that INQ will drop down LISHARE, which is similar to the findings of (Buchele & Christiansen, 1999; North, 1990). In both emerging and advanced economies, INQ will have an optimistic impact on LISHARE. Our empirical finding is similar to the work of Doyle and Martinez-Zarzoso (2011) and Ayyagari et al. (2006) highlight that the financial constraint can be tackled with the existence of better INQ, which facilitates firms to attain production efficiency, and in this way, more income is attained by laborers.

INFL is the macroeconomic indicator (Mankiw, 2001). It can affect LISHARE through various theoretical channels. According to the Keynesian model, moderate inflation raises employment and wages of labor. Monetarist theories highlight that inflation reduces the real wages of labor over time. As INFL is concerned, the empirical result of the study shows a significant impact of INFL on LISHARE in the case of both emerging and developing economies. On the other hand, INFL happens to be positively significant for LISHARE in most of the model specifications for advanced economies. The findings are similar to the work of (Pollin & Zhu, 2009; Sultan & Shah, 2013), which shows inflationary labor income.

The RER and KI are the variables that are important to include in the study, as they find out how both affect the LISHARE. As far as RER and KI are concerned, the detrimental impact of KI on LISHARE for emerging, developing, and high-income economies showed that when an additional amount of capital is used instead of labor, it will reduce LISHARE. Our results for KI are similar to the empirical results of (Jayadev & Narayan, 2018; Grazzini & Rossi, 2020). On the other hand, the RER happens to be significant for LISHARE in most of the model specifications. Our empirical findings align with the work of (Aye & Harris, 2019).

HC is one of the strong determinants of LISHARE in the empirical analysis. According to the HC theory, when there is investment in the skills, health, and training of individuals, it leads to higher wages and LISHARE. HC is the representation of the labor skills and experience embedded in it, and it was positive for LISHARE for all of the estimated equations of our model. Our study is similar to the (Çelik, 2022; Guerriero & Sen, 2012; Chortareas & Noikokyris, 2021).

RLGDP affects LISHARE through a lot of theoretical channels, together with Kaldor's growth, the Solow model, and endogenous growth theory, which highlight how RLGDP promotes the productivity gains, wage increases, and LISHARE. The effect of real GDP on the different groups of economies is different. For emerging economies, an increase in RLGDP will enhance LISHARE, showing that the growth of economies matters a lot as growth benefits the labor (Zhang et al., 2023; Leshoro, 2013). The findings of our studies show that the effect of RLGDP is negative but highly significant on advanced and developing economies, and similar to the empirical results of (Ibarra & Ros, 2019).

The SOGLOB, POGLOB and ECGLOB are one of the core variables that can affect LISHARE. SOGLOB affects LISHARE through institutional strengthening, globalization, endogenous growth, and technology diffusion theories, which predict that with the increased information flows, specialization and technology use and improved worldwide connectivity boost skills, employment opportunities and LISHARE. In empirical findings for emerging and developing economies, different dimensions of globalization also affect LISHARE differently, SOGLOB and ECGLOB happen to be negative and significant for LISHARE. While, POGLOB tends to reduce LISHARE for emerging and advanced economies but opposite case happens for developing economies which enhance LISHARE. In advanced economies, social and economic globalization will enhance LISHARE. Our result is similar to Stockhammer (2017) and Dogan (2016) results, which imply that globalization is necessary for the economies and for the workers to obtain extra returns on earnings.

According to classical trade theory, if there is a rise in TOT, the national income also rises, which encourages the economies to import more because earnings from export are high, subsequently, this enhances the wage, employment, and LISHARE. But according to the Prebisch–Singer Hypothesis, developing nations in the world may face a reduction in TOT, which trims down the export earnings and LISHARE. The TOT can affect the LISHARE of advanced, emerging, and developing in a different way. For emerging and developing nations, the TOT is negatively related to LISHARE. For advanced economies positive relationship between TOT and LISHARE is obtained. Our findings are similar to the work of Caballero and Hammour (1991) and Sala-i-Martin and Barro (1995) showing an optimistic relationship with each other.

5. Conclusion and Policy Recommendations

The study empirically investigated the influence of different factors affecting LISHARE. The study used panel data from 2000 to 2019 by using the GMM estimation technique. The different trade indicators and globalization indicators are used to study their impact on LISHARE.

The present study investigates the determinants of LISHARE by focusing on the most significant macroeconomic and globalization-related factors. The empirical finding of the study shows that LISHARE is determined by the complex interaction of different trade dynamics, investment, and growth channels. Each variable is used to generate the channels or mechanisms that enhance the growth effect and the distributional effect. The empirical results of the study show that TOPEN and TCOM will help to enhance LISHARE in the case of advanced economies. The TDIV for middle and low income economies will boast LISHARE. TGLOB will positively affect the LISHARE in all the estimated equations of study. The study also concludes that different indicators of globalization will affect the LISHARE differently. The empirical results of all economies show that HC will have an optimistic impact on LISHARE. Whereas, FD and FDI improve the allocation of resources, productivity gain, and LISHARE.

The HC is one of the strong determinants that enhance LISHARE through advancement in the skills and education of workers. On the other hand, the TGLOB will make access to the global market easier, and TCOMP will enhance the specialization and expand the competitive pressures that transform the distribution of income. However, the influence of these entire variables on the LISHARE is not the same but depends upon the economic, structural, and institutional conditions of the economies. Therefore, based on the empirical findings, the study provides some imperative policy suggestions that the government should not only focus on promoting TOPEN and FD but also encourage the positive role of INQ, HC, and LM policies to have equitable growth and improved LISHARE.

Furthermore, the government should play a positive role in providing necessary education to all laborers and prioritize its investment plans in workers skill development programs, which help workers to gain employment in high-value, technology-related industries generated by trade as well as globalization. The administrative authorities must improve labor protection laws to guarantee that workers receive a fair share of labor income. Policymakers should set up various trade agreements that include better labor standards, ensuring that international trade provides gains to workers instead of just capital owners, so that labor will reap higher returns.

The limitation of the study is that it may be affected by the data constraints, time period, and cross-country heterogeneity. Furthermore, future studies can avoid the data constraint and also use one more dimension of trade, such as trade margins.

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