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REMITTANCE FLOWS AND ECONOMIC EXPANSION IN ASIA'S DEVELOPING NATIONS: A PANEL DATA STUDY (1971–2020)

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Abstract—This research explores the influence of remittance inflows on economic growth across 47 developing nations in Asia over the period 1971 to 2020, utilizing annual panel data from the World Bank. Through Fixed Effects and Random Effects modeling, the study assesses the relationship between remittances and GDP per capita growth. The findings indicate that both gross capital formation and economic openness are significant contributors to economic performance, with estimated coefficients of 0.3279 and 0.3268, respectively. Country-level analysis reveals diverse growth patterns: China and South Korea demonstrate sustained economic expansion with moderate remittance inflows, while Bhutan and Myanmar achieve notable growth despite limited remittance volumes, suggesting strategic utilization of external income. Vietnam shows a strong positive correlation between remittances and GDP growth, whereas India's modest growth amid substantial remittance receipts points to underlying structural inefficiencies. The study categorizes countries into five regional groups, identifying South Asia, East Asia, and Southeast Asia as the leading recipients of remittances. Further classification by income level reveals that upper-middle-income economies gain the most when remittances are invested productively. High-income countries show limited growth impact due to consumption-oriented remittance use, while lower-middle-income nations face constraints from underdeveloped financial systems. Low-income countries experience minimal benefit due to low remittance volumes. These results highlight the importance of strengthening financial infrastructure, enhancing human capital, and implementing targeted policies to optimize the developmental potential of remittances. The study offers practical guidance for policymakers seeking to harness remittance flows as a driver of inclusive and sustained growth in Asia's emerging economies.

Keywords— Asia, Economic Growth, Panel Data Models, Remittances

I. INTRODUCTION

According to the World Migration Report in 2024 by the International Organization for Migration indicated that in 2024, there were 304 million people move as migrants around the world, with many different reasons such as economic opportunities, conflict and violence. Approximately 50% of migrants reside in high-income nations, while nearly 33% of migrants settle in developing regions. Those who relocate internationally for employment frequently transfer remittances back to their countries of origin. Remittances sent by migrants to their home countries serve as a key driver of both economic and social progress, especially within developing regions. As privately transferred funds, they represent a significant stream of external financing for low- and middle-income economies more than official aid or foreign investment, with some smaller economies heavily reliant on them. Data from the World Bank's Migration and Development Brief reveal that global remittance flows have notably exceeded the volumes of Official Development Assistance (ODA) and Foreign Direct Investment (FDI) to LMICs economies, reaching an estimated $905 billion globally in 2024, with $656 billion going to LMICs in 2023 (Fig. 1). Although this was a slower rate than the post-pandemic increases of 2021-2022, but its expansion was still high. Migrant workers sent these crucial funds to support families, improve access to education and healthcare, and boost economies. Challenges remain in high transfer fees and limited financial access for recipients, and promoting digital remittances is crucial to lowering costs and increasing inclusivity.

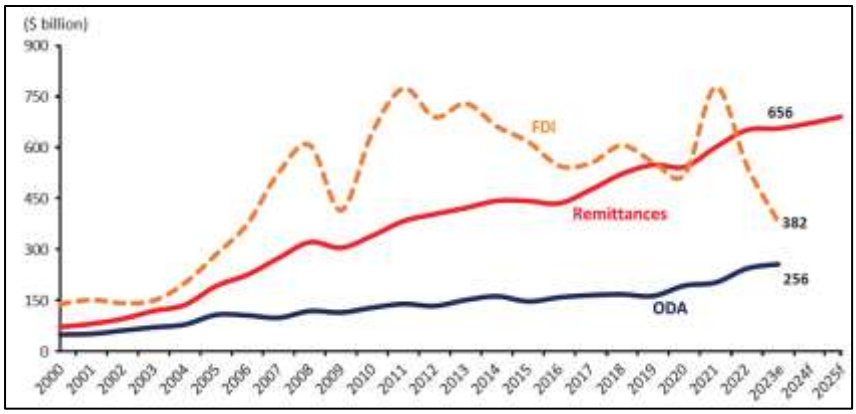

Fig. 1 Transfers of remittances, foreign direct investment, and official development assistance directed toward low- and middle-income economies, 2000–2025 (projected)
Source: World Bank, 2024. {1} Data from World Bank-KNOMAD staff estimates, World Development Indicators, and IMF Balance of Payments Statistics.
Note: FDI is Foreign Direct Investment; ODA is Official Development Assistance; e is estimate; f is forecast.

In the Asian context, remittance inflows represent the most significant channel of external financing for developing nations, playing a pivotal role in their economic support. Remittances provide critical financial support, helping to improve living standards, healthcare, and education for families, particularly in developing countries. Fig. 2 illustrates the importance of remittances across Asia countries, clearly showing that South Asia is the top remittance recipient subregion in Asia, with an estimated value of $176 billion in 2022. India received large remittance inflows over $111 billion. Remittances are a vital lifeline for many families, especially in the Philippines, India, and China ranks among the leading global recipients of remittance inflows. Remittance has a significant potential for poverty alleviation and fostering economic stability in Bangladesh, India, and the Philippines. Remittance is as economic buffer. In smaller Pacific nations like Tonga and Samoa, remittances are a substantial part of the GDP, acting as a vital economic buffer against global fluctuations.

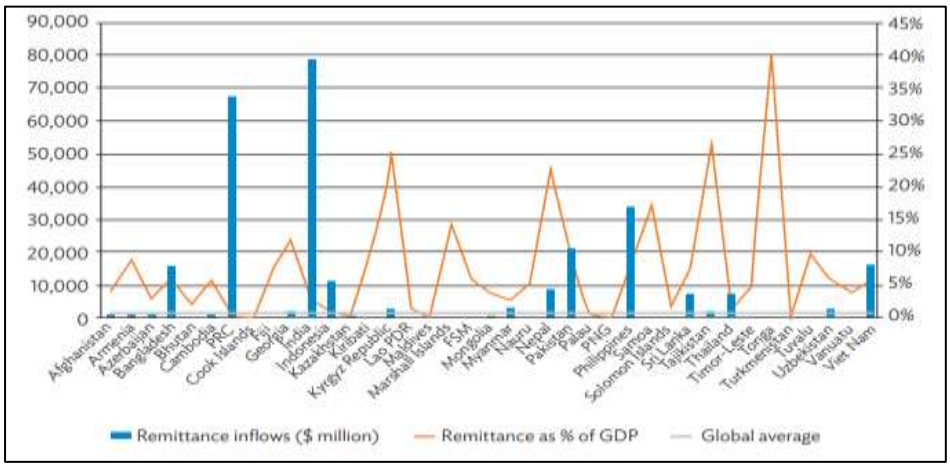

Fig. 2 Importance of remittances to the Asia region
Source: Dhar, U., 2021. {2} Data from World Bank, 2018. Bilateral Remittance Matrix. {3}
Note: FSM is Federated States of Micronesia, GDP is Gross Domestic Product, Lao PDR is Lao People's Democratic Republic, PNG is Papua New Guinea, PRC is People's Republic of China. The blue bar graph comes from the Bilateral Remittance Matrix 2018

International remittance inflows are most heavily concentrated in the Asia region, making it the foremost recipient worldwide. In 2025, remittance activity in Asia is characterized by robust growth, with total transaction values projected to reach approximately $396.17 billion, driven by factors like family support, investments, and digital payment innovation. Digital platforms and mobile apps are the preferred method for sending money due to their speed, convenience, and enhanced security, surpassing traditional cash-based services. Digital remittance usage for various personal and investment-related reasons is very high transfer in the Philippines, Singapore, China, and Japan. This research adds to existing scholarship on remittance flows by examining their influence on GDP growth across developing nations in Asia. The influx of remittances is important in stimulating GDP growth, increase household income, reduce poverty levels. Cash transfers help households mitigate the credit crisis, a key issue in Asia, which accounts for two-thirds of the world's poorest population.

II. LITERATURE REVIEW ON ASSESSING THE INFLUENCE OF REMITTANCE INFLOWS ON ECONOMIC EXPANSION

Literature shows mixed results, with some studies finding positive, negative, or insignificant effects, often dependent on context, methodology, and country-specific factors. Remittance inflows have the potential to enhance economic growth by boosting household-level spending, encouraging savings, facilitating investment activities, strengthening financial development, and reducing poverty. A significant portion of the literature demonstrates remittances appear to contribute positively to economic performance, attributing this to increased household income and consumption, which stimulate demand, and to enhanced domestic investment in human capital and businesses, which fosters long-term productivity and helps poverty reduction.
Remittance flows are widely recognized for their favorable association with economic growth, as shown by many studies is ASEAN, Africa, Europe and other region. Research on remittances in ASEAN and developing countries presents mixed findings regarding their impact on economic growth. Vargas-Silva, Jha, and Sugiyarto (2009) [4] analyzed data from 1988 to 2007 using fixed and random effects models, finding that remittances positively affect GDP per capita but slightly increase poverty rates. Shera and Meyer (2013) [5], using panel data from 21 developing countries (1992–2012) and a fixed effects model. The study highlighted that factors such as remittance inflows, foreign direct investment, educational attainment, trade liberalization, and capital accumulation tend to support economic growth, whereas household consumption and inflation were found to have adverse effects. Fagerheim (2015) [6], employing OLS and 2SLS techniques on data from ASEAN nations between 1980 and 2012, identified an overall negative influence of remittances on growth, though the impact varied across countries—Indonesia, Laos, Malaysia, and Vietnam experienced negative outcomes, while Cambodia, the Philippines, and Thailand showed positive growth effects.

A growing body of empirical research across Africa underscores the beneficial impact of remittance inflows on economic growth. Nyamongo et al. (2012) [7], utilizing pooled OLS and fixed effects models on data from 36 African nations spanning 1980 to 2009, identified remittances as a significant contributor to GDP growth. Samuel et al. (2018) [8], through cointegration analysis of Nigeria's data from 1980 to 2015, observed a positive association between remittances and private sector credit, contrasting with a negative relationship between development aid and credit expansion. In their study of 20 sub-Saharan African countries (2000–2015), Olayungbo and Quadri (2019) [9] applied PMG/MG-ARDL and cointegration techniques, revealing that remittances support economic growth in both the short and long run, with unidirectional causality from remittances and financial development to GDP, but no causal link between remittances and financial development. Adjei et al. (2020) [10], employing dynamic panel estimation and VECM Granger causality on data from seven West African economies, confirmed that remittance inflows bolster economic growth and are positively correlated with real exchange rates, trade openness, and investment activity

Studies on remittances in Europe and other regions reveal their positive influence on economic growth. Meyer and Shera (2017) [11] analyzed panel data from six European countries (1999–2013) using pooled OLS, fixed effects, and random effects models. Their findings indicate that remittances positively affect GDP growth, particularly in quarters with high remittance-to-GDP ratios. Topxhiu and Krasniqi (2017) [12] examined six Western Balkan countries (2005–2015) using fixed effects, random effects, and GLS models. They found that remittances, along with exports and capital formation, promote GDP per capita growth, while foreign direct investment (FDI) has a negative impact. In a broader context, Giuliano and Ruiz-Arranz (2006) studied around 100 developing countries using GMM and found that remittances positively influence initial GDP per capita levels. Similarly, Mundaca (2009) [13], using GMM on data from 25 Latin American and Caribbean countries (1970–2002), reported that remittances and net fixed capital formation per capita enhance GDP per capita growth, whereas domestic bank credit shows no significant effect.

In contrast to studies emphasizing the growth-enhancing role of remittances, a number of empirical investigations point to their potentially adverse effects on economic performance. These negative outcomes are frequently linked to diminished labour market participation or the 'Dutch disease' phenomenon, whereby real exchange rate appreciation undermines competitiveness. Acosta, Lartey, and Mandelman (2009) [14] suggest that remittance inflows may discourage active job search and reduce employment levels. Chami, Fullenkamp, and Jahjah (2003) [15] argue that such transfers can lower household labour effort, while Barajas et al. (2009) [16], examining data from 84 countries, report either detrimental or insignificant impacts. Chami et al. (2003) [15], using data from 113 countries between 1970 and 1998, found a positive association between capital accumulation and GDP growth, but a negative link with remittances. Similarly, Barajas et al. (2009) [16], applying fixed effects and a dynamic Keynesian framework across eight countries (1969–1993), observed that remittances suppressed consumption, investment, and output. Rasha Qutb (2021) [17], through VECM and Granger causality analysis of Egypt's data (1980–2017), concluded that remittances exert a long-term negative influence on growth. Lacheheb and Ismail (2020) [18], using GMM on data from 93 low- and middle-income economies (2009–2017), reported comparable findings. Sutradhar (2020) [19], analysing four South Asian countries (1977–2016), found remittance inflows negatively affected economic growth in Bangladesh, Pakistan, and Sri Lanka, while India experienced a positive impact.

III. RESEARCH METHODOLOGY ON THE RELATIONSHIP BETWEEN REMITTANCES AND ECONOMIC GROWTH MODEL

Goschin (2014) [20], Meyer and Shera (2017) [11], as well as Topxhiu and Krasniqi (2017) [12], employed comparable methodological frameworks in their analyses of remittances and economic growth. Their studies utilized panel data techniques, including Pooled OLS, Fixed Effects (FE), and Random Effects (RE) regressions, with model selection guided by the Hausman test. These investigations generally identified a mean-level influence of remittance flows and other explanatory variables on economic performance. Building on this approach, the present study examines the role of remittances in shaping economic outcomes across developing Asian economies, applying pooled OLS, FE, and RE models suited to panel data structures. The analytical framework extends the neoclassical growth model as formulated by Barro (1996) [21]. This model is written in log-linear form, the Double Log-linear Cobb-Douglass Production Function, the growth equation can be written as follows.

$$\ln GDP_{it} = \beta_0 + \beta_1 \ln GDPC_{i,t} + \beta_2 \ln Remit_{it} + \beta_3 \ln CAP_{it} + \beta_4 \ln HC_{it} + \beta_5 \ln FDI_{it} + \beta_6 \ln OPEN_{it} + \beta_7 \ln INF_{it} + \eta_i + e_{it} \quad (1)$$

$\ln GDP_{i,t}$: Natural logarithm of the GDP per capita growth rate for Asian country i at time t (expressed in percentage terms).
$\ln Remit_{i,t}$: Natural logarithm of remittance inflows per capita for country i in Asia at time t (percentage).
$\ln CAP_{i,t}$: Natural logarithm of gross fixed capital formation for country i in Asia at time t (percentage).
$\ln HC_{i,t}$: Natural logarithm of human capital index for country i in Asia at time t (percentage).
$\ln FDI_{i,t}$: Natural logarithm of foreign direct investment received by country i in Asia at time t.
$\ln OPEN_{i,t}$: Natural logarithm of trade openness for country i in Asia at time t (percentage).
$\ln INF_{i,t}$: Natural logarithm of the inflation rate for country i in Asia at time t (percentage).
β_i: Coefficient parameter associated with country i.
η_i: Unobserved country-specific effect capturing heterogeneity across nations.
$e_{i,t}$: Stochastic error term for country i at time t.
i: Index representing each country in the sample, where i = 1, ..., N.
t: is time, which t= 1…T

The dependent variable in this study is the growth rate of gross domestic product per capita ($GDP_{i,t}$), expressed as a constant percentage. The model incorporates several independent variables: GDP per capita, remittance inflows per capita, gross fixed capital formation, human capital, foreign direct investment (FDI), trade openness, and inflation rate. The underlying assumptions are as follows: 1) GDP per Capita ($GDPC_{i,t}$) is measured in constant 2010 US dollars and is anticipated to exhibit a positive association with GDP growth, reflecting that higher income levels contribute to economic expansion. 2) Remittances per Capita ($Remit_{i,t}$) represent personal transfers received, calculated as a percentage of real GDP. These inflows are expected to positively influence GDP growth, as increased remittance volumes from migrant populations can stimulate domestic

consumption and investment. 3) Gross Fixed Capital Formation ($CAP_{i,t}$), serving as a proxy for physical capital investment, is measured as a percentage of real GDP. It is presumed to have a positive effect on per capita GDP growth, indicating that higher capital accumulation drives productive capacity. 4) Human Capital ($HC_{i,t}$) is proxied by secondary school enrolment rates, expressed as a percentage. Investment in education is expected to enhance labour productivity and thereby support GDP growth. 5) Foreign Direct Investment ($FDI_{i,t}$), measured in US dollars, captures the role of external capital inflows. It is assumed to positively affect GDP per capita growth by introducing new technologies, employment opportunities, and market efficiencies. 6) Economic Openness ($OPEN_{i,t}$) is defined as the ratio of total exports and imports to GDP, serving as an indicator of trade integration. Greater openness is expected to correlate positively with GDP growth, as increased trade activity fosters competitiveness and market expansion. 7) Inflation Rate ($INF_{i,t}$) is measured as the annual percentage change in the GDP deflator. Inflation is assumed to be positively related to GDP growth, under the premise that moderate price increases may signal rising demand and economic dynamism.

IV. FINDINGS AND DISCUSSION

(A) Examining the Influence of Remittances on Economic Growth in Developing Asian Economies

Table I presents the coefficient estimates and supplementary statistics derived from model, which evaluates the relationship between GDP per capita growth and remittance inflows using both Random Effects and Fixed Effects regression techniques. To determine the most suitable estimation approach, the study applies the Hausman Test—a diagnostic procedure that assesses whether the covariance between the estimators is zero, formally expressed as $\beta_{RE} - \beta_{FE} = 0$. Acceptance of the null hypothesis implies that the Random Effects model is appropriate, whereas rejection favours the Fixed Effects specification.

H_0: Random Effects model is consistent and efficient

H_1: Fixed Effects model provides a more reliable estimation

Hausman Test is employed to determine the most suitable estimation technique for model, which investigates the relationship between GDP per capita growth ($GDP_{i,t}$) and a set of explanatory variables: GDP per capita ($GDPC_{i,t}$), remittances per capita ($Remit_{i,t}$), gross fixed capital formation ($CAP_{i,t}$), human capital ($HC_{i,t}$), foreign direct investment ($FDI_{i,t}$), trade openness ($OPEN_{i,t}$), and inflation rate ($INF_{i,t}$) across Asian economies. At a 95% confidence level, the test yields a chi-square statistic of 27.35 with a p-value of 0.001, leading to the rejection of the null hypothesis (H_0) that the Random Effects model is appropriate. Consequently, the Fixed Effects model is selected as the preferred specification. The model's F-statistic of 8.30, also significant at the 0.001 level, confirms that the independent variables collectively explain variations in GDP per capita growth (see Table I).

TABLE I Hausman Test of the Linkages Between Per Capita GDP Growth and Remittance Inflows

	Coefficients			
	(b)	**(B)**	**(b-B)**	**sqrt(diag(V_b-V_B))**
	Fixed Effect	**Random Effect**	**Difference**	**S.E.**
$GDPC_{i,t}$	0.1273	0.0132	0.1141	0.0792
$Remit_{it}$	-0.0532	0.0273	-0.0805	-0.0805
CAP_{it}	0.3279	0.2474	0.0805	0.0536
HC_{it}	-0.1593	-0.1404	-0.0189	0.2596
FDI_{it}	-0.0146	0.0210	-0.0356	0.0270
$OPEN_{it}$	0.3268	0.1059	0.2209	0.0866
INF_{it}	0.0043	-0.0095	0.0139	0.0116
Chi-square = 27.35				
Prob > chi-square = 0.0003				

Note: (b) is the coefficient obtained by estimating using the Fixed Effect method.

(B) is the coefficient obtained by estimating using the Random Effect method.

$GDPC_{i,t}$ is GDP per capita, $Remit_{i,t}$ is remittances per capita, $CAP_{i,t}$ is net gross capital formation, $HC_{i,t}$ is human capital, $FDI_{i,t}$ is foreign direct investment, $OPEN_{i,t}$ is economic openness, $INF_{i,t}$ is inflation rate.

Table II presents the coefficient estimates and statistical outputs from model, evaluated using both Random Effects and Fixed Effects regression techniques. Based on the Hausman Test results, the Fixed Effects model is identified as the more appropriate specification for analyzing the relationship between GDP per capita growth ($GDP_{i,t}$) and remittance inflows across Asian economies. Among the independent variables, two—gross fixed capital formation ($CAP_{i,t}$) and trade openness ($OPEN_{i,t}$)—demonstrate statistically significant positive associations with the dependent variable. Specifically, an increase of one unit in gross fixed capital formation corresponds to a 0.3279% rise in GDP per capita growth, significant at the 0.001 level. Similarly, a one-unit increase in economic openness leads to a 0.3268% increase in GDP per capita growth, also significant at the 0.001 level. Other variables, including GDP per capita ($GDPC_{i,t}$), remittances per capita ($Remit_{i,t}$), human capital ($HC_{i,t}$), foreign direct investment ($FDI_{i,t}$), and inflation rate ($INF_{i,t}$), do not exhibit statistically significant relationships with GDP per capita growth in the Asian context. The model's explanatory power, indicated by an R-squared value of 0.4796, suggests that approximately 47.96% of the variation in GDP per capita growth is accounted for by the included independent variables. These findings underscore the importance of capital investment and trade openness as key drivers of economic growth in the region.

TABLE III Results of coefficient analysis and statistical values of Model by Random Effect Model and Fixed Effect Model

Variable	Random Effects GLS Regression			Fixed Effects GLS Regression	
	Coefficient	**Standard Error**		**Coefficient**	**Standard Error**
$GDPC_{i,t}$	0.0132	0.0206		0.1273	0.0818
$Remit_{it}$	-0.0273**	0.0108		-0.0532	0.0456
CAP_{it}	0.2474***	0.0471		0.3279***	0.0713
HC_{it}	-0.1404	0.1306		-0.1593	0.2906
FDI_{it}	0.0210	0.0407		-0.0146	0.0488
$OPEN_{it}$	0.1059***	0.0389		0.3268***	0.0949
INF_{it}	-0.0095	0.0119		0.0043	0.0167
Cons FDI_{it}	1.6441	0.5486		1.2673	1.2520
R-sq	0.3800			0.4796	
Wald chi-square	40.88				
F-statistic				8.3	
Observation	106			106	
Hausman test		27.35***			

Note: A double asterisk (**) indicates significance at the 1% level, while a triple asterisk (*) denotes significance at the 0.1% level.

$GDPC_{i,t}$ is GDP per capita, $Remit_{i,t}$ is remittances per capita, $CAP_{i,t}$ is net gross capital formation, $HC_{i,t}$ is human capital, $FDI_{i,t}$ is foreign direct investment, $OPEN_{i,t}$ is economic openness, $INF_{i,t}$ is inflation rate.

B) Investigating the Link Between Remittance Inflows and Per Capita GDP Growth in Asia

Across Asian economies, remittance inflows are commonly associated with increases in GDP per capita, primarily through their role in enhancing household earnings, promoting savings, and supporting investment—factors that collectively drive economic expansion and elevate living conditions. However, this relationship is not always straightforward, as factors such as the volatility of remittance flows can create economic instability. The extent to which remittances influence economic outcomes is shaped by multiple factors, notably the efficiency of policy frameworks aimed at directing these funds toward productive uses and the robustness of formal financial channels facilitating their transfer.

Fig. 3 depicts the association between remittance inflows and GDP per capita growth across Asian nations from 1970 to 2000. The findings reveal a positive correlation in China, where remittances appear to align with robust economic expansion—China having recorded the highest per capita growth in the region during this timeframe. China's remittance patterns shifted dramatically from 1970 to the present, transitioning from a period of isolationism to economic reforms post-1978. These reforms spurred massive internal labor migration and initiated international migration. Initially, remittance inflows were minimal due to emigration restrictions, but they grew significantly after the introduction of the "Open Door Policy," becoming a vital mechanism for sustaining rural household income and contributing to regional development by transferring wealth from the booming eastern coastal regions to the central and western areas.

South Korea, characterized by moderate levels of remittance inflows, holds the second-highest position in the observed correlation between remittances and GDP per capita growth. In 1970s, government initiatives like the Korea Overseas Development Corporation (KODC) promoted overseas employment as a means to boost foreign exchange. Over time, as South Korea's economy transitioned from an agrarian to an industrial powerhouse, remittances became less central to national economic growth, with their contribution declining as a percentage of GDP. The country's economic strategy shifted from reliance on remittances and exports to a more robust, internally driven economy.

Vietnam, with relatively large remittance inflows, ranks third, showing an enhancing influence on GDP growth at the individual level. Remittance patterns in Vietnam transformed from informal commodity and cash deliveries in the 1970s and 1980s to significant formal financial inflows in the 1990s and beyond. The inflow of funds has supported structural improvements and stimulated economic progress, supporting household spending, becoming a major source of foreign currency. The post-war period saw the emergence of informal markets for goods sent from abroad, followed by a boom in official remittance channels after the Cold War, making the Vietnamese diaspora a key component of the modern Vietnamese economy.

In comparison, Bhutan and Myanmar, despite receiving relatively few remittances, exhibit a substantial influence of remittance inflows on per capita GDP expansion. In Bhutan, remittance inflows evolved from minimal recorded data in the early 1970s to a more significant source of external finance by the 2000s and 2010s, fueled by growing emigration and a more outward-looking economy. While not a primary driver in the 1970s, remittances have become an important economic component, accounting for an estimated 5% of GDP by 2020. Myanmar's remittance patterns similarly evolved from informal transfers through Informal Value Transfer Systems in the late 20th century to more formal systems in the 2010s and 2020s, driven by labor migration to neighboring countries. Remittances became a central focus of policy and economic analysis in the early 21st century as Myanmar integrated into the global economy and introduced reforms to facilitate legal migration and access to financial services.

India, despite having the highest volume of remittances, experiences a more moderate impact on GDP per capita growth. This may be attributed to other economic factors influencing India's growth trajectory. Remittances to India grew significantly from the 1970s onward, supported by the migration of skilled workers, economic liberalization, and improved transfer mechanisms. While remittances initially focused on supporting family consumption, they are increasingly being directed toward asset creation and investment, contributing to India's trade and capital flow balances alongside its foreign reserve accumulation.

Additionally, result shows that during the study period, most Asian countries experienced economic growth rates ranging from 0 to 5 percent. When analyzing the distribution of remittance inflows across the 47 countries, a concentration of remittances

is observed, with most countries receiving approximately $100,000 in remittances annually. Notably, India sends the highest remittance value, nearly $2.5 million per year, followed by the Philippines, Vietnam, and China.
In summary, while remittance inflows tend to support increases in GDP per capita across recipient economies in Asia, their impact varies across countries depending on factors such as migration patterns, economic policies, and the strength of formal financial systems. Understanding these dynamics is crucial for developing effective policy frameworks aimed at maximizing the economic benefits of remittances in the region.

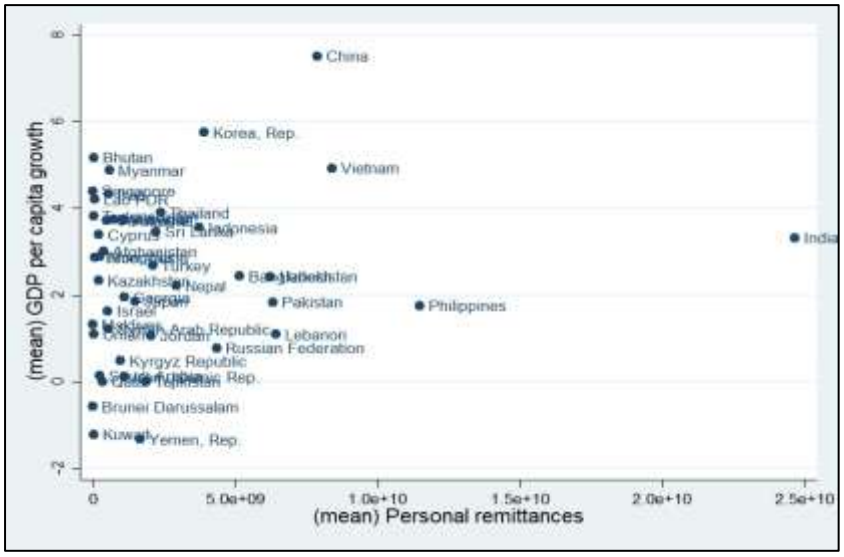

Fig. 3 The Link Between Remittance Inflows and Per Capita GDP Growth in Asia
Source: Own Calculation.

This study investigates the regional patterns in the relationship between GDP per capita growth and personal remittance inflows (measured in US dollars). Countries are grouped into five regions: Central Asia (CA), East Asia (EA), South Asia (SA), Southeast Asia (SEA), and West Asia (WA). The findings indicate that South Asia, East Asia, and Southeast Asia—respectively—are the top three regions receiving the highest levels of remittances.
The highest remittances country in South Asia (SA), are India and Pakistan. India and Pakistan receive high remittances due to their large diasporas in economically stable host countries like the US, UK, and the Gulf, a strong cultural emphasis on family support, favourable economic conditions in some host nations boosting migrant incomes, and policies like tax incentives that encourage formal transfers. These factors enable a significant number of workers to send substantial funds back, thereby making India and Pakistan top recipients of remittances in South Asia. The high remittances may be due to the large number of populations in these countries migrate to work abroad. Both India and Pakistan have extensive overseas communities in countries like the US, UK, and the Gulf, which are major remittance-sending regions. Moreover, population in these countries still have ties and concerns for their families in their home countries. Close-knit family and community bonds in South Asia foster a strong cultural obligation for migrants to support their relatives back home. In addition, families in their home countries encounter with high poverty and frequent natural disasters, resulting in high expenses. As a result, the migrant population has to send a large number of remittances each year.
East Asia ranks next among the regions receiving substantial remittance inflows, with China leading within this group. China's prominence as a remittance-receiving nation stems from its classification as an upper-middle-income economy, its vast population—many of whom reside overseas—and its historical trajectory of structural transformation and Labor mobility. These factors have contributed to significant financial transfers from the Chinese diaspora, aimed at supporting households and bolstering domestic economic activity. China has the largest population in the world. There are also a large number of Chinese populations who migrate to settle or work abroad. A significant portion of China's large population lives in other countries, particularly in high-income and other developing nations, creating a vast network of migrants who send money back home. As a major global economic power and an upper-middle-income country, China receives large amounts of money from migrants abroad to support family members, pay for migration costs, or build new homes. China has undergone considerable labour mobility, serving both as a source of skilled migrants relocating to wealthier nations and as a host country for lower-skilled workers from neighbouring East and South Asian regions. These migration patterns have resulted in notable remittance inflows that support domestic households and economic activity. Due to Asian cultures with connections and support between relatives, there is a high remittance flow. Therefore, remittances are also high.
The third group of countries with the highest remittances is Southeast Asia (SEA). The Southeast Asian countries with the highest remittances are the Philippines and Vietnam, which shows that the large number of Filipino and Vietnamese people migrate to work abroad, so remittances to their home countries are also high. The Philippines ranks among the top remittance-receiving countries due to its substantial population of Overseas Filipino Workers (OFWs), whose financial transfers are facilitated by supportive government initiatives, well-established overseas networks aiding employment placement, and sustained international demand for Filipino labour in sectors such as caregiving and domestic services. The Philippines has a massive stock of Overseas Filipino Workers (OFWs), which the number has reached over 12 million people. There is a sustained demand for Filipino workers abroad, especially in skilled and semi-skilled sectors. According to Vietnam, Vietnam's high remittance inflows are due to its large diaspora and workforce in countries like Japan, South Korea, and Taiwan, coupled with government policies that are favourable to migrants, such as tax incentives and stable currency exchange rates, alongside robust money transfer services and engagement by overseas Vietnamese in supporting national investment and sustaining cultural and social linkages.

The fourth group of remittances is Central Asia (CA), the highest remittances country is Uzbekistan. Uzbekistan has high remittance inflows because a large number of its citizens work abroad, primarily in Russia and other countries, sending money to support their families at home. Strong labour demand in host countries, strengthening of the Uzbek currency, and government initiatives to diversify migration destinations contribute to the significant and increasing volume of these cross-border financial transfers.

Finally, the country with the lowest remittances is West Asia (WA). The highest remittance country in this continental is Lebanon. Lebanon receives substantial remittance inflows, largely driven by its extensive and active diaspora community, which consistently transfers significant financial resources to assist household livelihoods and reinforce the domestic economy. This vital financial inflow serves as an economic buffer against poverty and helps families maintain their livelihoods, particularly during the country's severe financial crisis (Fig.4).

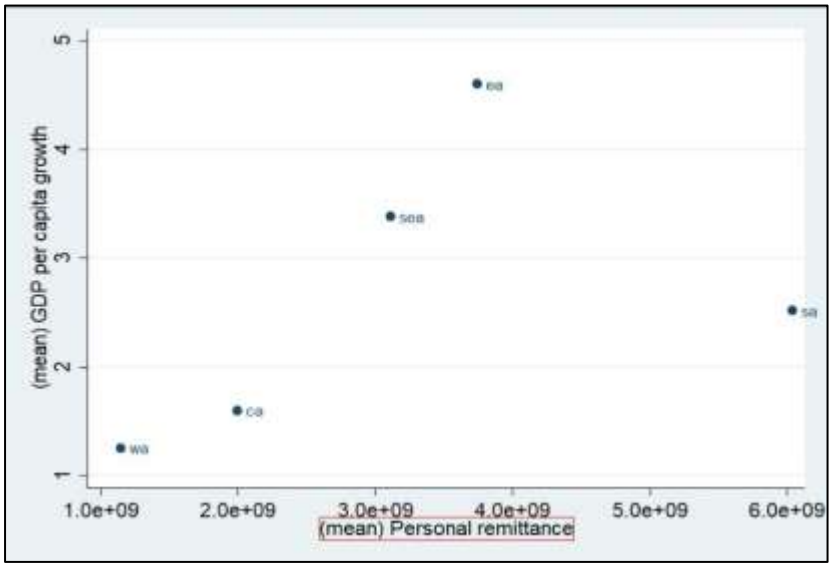

Fig. 4 Relationship between Annual Growth Rate of Remittances per Capita and Personal Remittances in US Dollars by Region
Source: Own Calculation.
Note: The regional abbreviations used in this study are as follows: CA refers to Central Asia, EA to East Asia, SA to South Asia, SEA to Southeast Asia, and WA to West Asia.

This study explores the link between annual growth in gross national income (GNI) per capita and personal remittance inflows across Asian countries, categorized into four income-based groups. According to the World Bank's 2024 classification, High-Income Economies (HI) are defined by a GNI per capita exceeding USD 13,936. Upper-Middle-Income Economies (UMI) fall within the range of USD 4,496 to USD 13,935. Lower-Middle-Income Economies (LMI) are characterized by GNI per capita between USD 1,136 and USD 4,495, while Low-Income Economies (LI) report GNI per capita below USD 1,135.

Research findings are despite substantial remittance inflows exceeding 4 million US dollar annually from high-income economies, the resulting annual growth rate in recipient countries can be limited to approximately 1.5 percent per year. The reason may due to several factors. The main reason may due to the remittances are primarily utilized for consumption, including basic needs, education, healthcare, and housing, rather than being channelled into productive investments that directly stimulate economic growth. The next reason may due to large and consistent remittance inflows can potentially foster a culture of dependency in recipient households, which may reduce incentives for labour force participation and entrepreneurship, thereby hindering domestic economic activity. An additional factor is that large-scale remittance inflows can exert upward pressure on the real exchange rate in receiving countries, which may undermine the competitiveness of export sectors and create difficulties for industries dependent on international markets.

The interesting research finding is Upper-middle-income economies (UMI) group has the remittance at the moderate level. The average remittance is 3 million dollars per year but the remittance has a highest effect on growth rate among all economies group, which is more than 3 percent. Upper-middle-income economies (UMI) receive moderate remittances because migrants from these countries have better-paid, higher-skilled jobs in wealthier nations, which can lead to more substantial individual transfers but fewer migrant workers compared to low-income nations sending large numbers of unskilled workers. The pronounced impact of remittances on economic growth in these countries can be attributed to their relatively robust economic structures, which enable more effective absorption and allocation of incoming funds toward development-enhancing activities. This growth effect is further reinforced when remittance recipients channel resources into productive investments that elevate household income and stimulate consumption. In upper-middle-income countries, elevated remittance inflows enhance households' capacity to allocate resources toward education, health services, housing improvements, and entrepreneurial ventures. Secondly, these investments lead to increased consumption, which stimulates local economies and fosters economic growth. Thirdly, by encouraging entrepreneurship and business investment, remittances can contribute to a country's capacity to produce and export more complex products.

In addition, the study indicate that Lower-middle-income economies (LMI) has not high remittance. The remittance is about 500,000 dollars annually but the remittance effect results in a 2.7 percent on economic growth rate. Lower-middle-income economies may see limited growth effects from remittances because of weak financial systems, low human capital, and dependency on remittances for consumption rather than productive investment. Factors hindering remittance impact due to weak financial systems, that are, poor financial infrastructure in developing countries hinders the ability to channel remittances into productive investments, thereby limiting their supportive role in accelerating economic development. Another explanatory factor is the limited human capital in certain countries, which constrains their ability to translate

remittance inflows into expanded labour force participation or productive capital formation—both essential components of sustained economic growth. Moreover, remittances often serve immediate needs like food, health, and education, rather than long-term productive investments like business growth or infrastructure.

The last group is Low-income economies (LI) has the lowest remittance, which has the least effect on growth rate. Low-income economies (LI) often have weak financial systems, low human capital, and unstable institutions, which hinder the productive use of remittances for investment and growth, making their impact insignificant compared to wealthier nations with strong financial infrastructure and educated workforces (Fig.5).

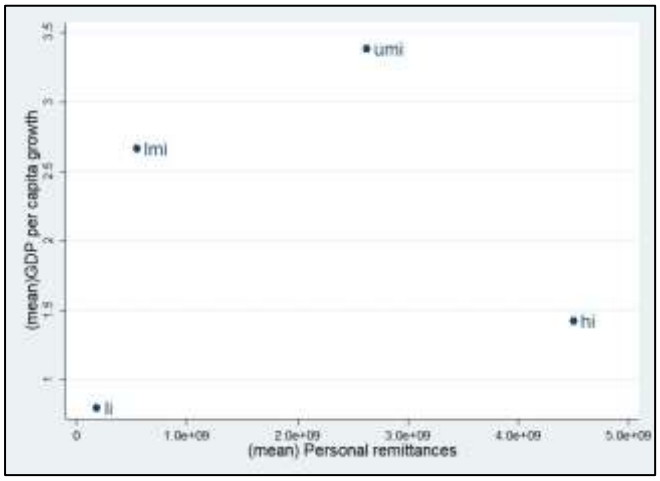

Fig. 5 Linkage Between Annual GNI Per Capita Growth and Personal Remittance Inflows Across Asian Economies, Categorized by Income Level

Source: Own Calculation.

Note: For clarity, the following abbreviations are applied: HI (High-Income), UMI (Upper-Middle-Income), LMI (Lower-Middle-Income), and LI (Low-Income) economies.

V. RESEARCH CONCLUSION AND SUGGESTION

In summary, this research offers meaningful perspectives on the connection between remittance inflows and GDP per capita growth across 47 Asian nations over the period 1971–2020. The results suggest that remittances tend to support economic expansion by enhancing household earnings, boosting national savings, and facilitating investment activities. However, the effects vary significantly across countries, shaped by factors such as remittance volatility, the effectiveness of policies that channel funds into productive investments, and the strength of formal remittance transfer systems. Countries like China, South Korea, and Vietnam experience substantial positive effects from remittances, with China's growth driven by economic reforms and labor migration, South Korea benefiting from early government policies promoting overseas employment, and Vietnam is experiencing a transition from informal to regulated remittance pathways. On the other hand, Bhutan and Myanmar, despite receiving fewer remittances, show high growth impacts due to their productive use of these funds. India, despite being the largest remittance recipient in Asia, experiences moderate growth, suggesting the influence of other economic factors. The study further classifies countries into four income groups, revealing that high-income economies, despite receiving large remittance inflows, exhibit limited growth due to the consumption-driven nature of these funds. Upper-middle-income economies, however, benefit the most, with remittances fueling productive investments and fostering higher growth rates. Lower-middle-income economies experience moderate growth, hindered by weaker financial systems and human capital, while low-income economies, with the least remittance inflows, see minimal growth due to underdeveloped infrastructures and unstable institutions. In essence, the research highlights the pivotal influence of financial infrastructure, human capital development, and sound policy design in unlocking the developmental benefits of remittance inflows. These findings carry important implications for policymakers seeking to amplify the economic contributions of remittances within Asia's developing economies.

VI. POLICY RECOMMENDATION

Remittance inflows contribute positively to per capita GDP expansion, functioning both as a strategic instrument for sustained national development and as a stabilizing force during periods of economic volatility. However, remittances do not function as an automatic solution to macroeconomic fluctuations, such as declining exports or downturns in tourism. They should not be viewed as an appropriate policy instrument for addressing such macroeconomic volatility. Rather, the role of remittances is generally more beneficial than detrimental in terms of mitigating local income or output volatility. In alignment with Singh (2010) [22], the analysis suggests that during periods of global economic weakness, such as financial crises, the incomes of immigrants are similarly affected by economic downturns. Consequently, it becomes more difficult for immigrants to remit money to their home countries in these circumstances. Although remittances appear to support long-term growth in per capita GDP, additional empirical analysis is required to validate their sustained influence on key economic indicators. Despite this potential, Asian countries should explore alternative strategies for driving their own economic growth, rather than relying solely on remittances.

The analysis advises Asian policymakers to implement strategies that strengthen trade and investment channels, while promoting the efficient allocation of remittance inflows to foster long-term economic sustainability. Firstly, Foster Regional Trade Integration. Governments should promote a liberal trade environment by negotiating reduced trade barriers among

economic blocs. Leveraging comparative advantage in production and exports can increase trade volume and improve welfare for both producers and consumers. Second, Strengthen Public–Private Investment Collaboration. Policymakers should collaborate with the business sector to encourage investment accumulation, which is essential for boosting GDP per capita growth. Thirdly, Support Migrant Workers and Remittance Utilization. Governments should facilitate labour migration to higher-income countries and ensure that remittances are effectively harnessed for development. As an expanding channel of foreign exchange, remittance inflows have the potential to drive economic advancement by boosting household consumption, generating employment, and enhancing industrial productivity—ultimately aiding in the reduction of poverty. Finally, Mitigate Capital Outflows and Tailor National Strategies. While remittance inflows benefit recipient countries, labour-exporting nations may face capital outflows. Policymakers must assess remittance dynamics and design country-specific strategies: India and Pakistan promote remittance use for long-term development. Myanmar and Bhutan should encourage small-scale investment and human capital formation. China and South Korea explore remittance potential despite moderate inflows.

In many developing nations, remittances have emerged as a vital source of foreign exchange, with their aggregate value rising significantly over recent decades. These financial transfers from migrant workers contribute directly to economic development and indirectly through increased consumption, which stimulates employment and industrial activity. As economic growth accelerates, poverty tends to decline—a dynamic widely recognized as a core strategy for poverty alleviation. Countries across Asia, including China and India, have leveraged this growth-consumption-poverty nexus to advance development, underscoring why economic expansion remains a central focus for policymakers and economists. While remittances can be strategically managed to enhance their developmental impact, the overall effect on long-term growth remains a subject of ongoing debate. Several Asian economies continue to benefit from remittance inflows originating from global labour migration, which has played a significant role in their economic advancement. However, for some Asia countries that are countries that support workers from all over the world, when money is sent to the workers' home countries, it has the effect of causing a large amount of capital outflow. Therefore, it is necessary to consider the influence of remittances on promoting economic growth of countries in the Asian region, which is a region with a large number of migrant workers.

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