



The Impact Of Export Destination Policies To East Asia And Pacific On GDP Per Capita

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ABSTRACT

East Asia and the Pacific region has been the second-largest trading bloc in the world for the past 40 years, following Europe, with a steadily increasing transaction value trend. In contrast, Europe, which has the highest trade levels globally, has shown no significant growth over the past four decades and has even experienced a slight decline. East Asia and the Pacific provide access to a diversified market with efficient technology transfer, which is believed to have a positive impact on GDP per capita growth. This study analyzes the impact of export destination policies to East Asia and the Pacific on GDP per capita by comparing sample countries from the Upper Middle Income (UMI) and Lower Middle Income (LMI) groups. The study employs a dynamic panel System GMM (Arellano-Bond 2-step) method, which combines level and first-difference equations for greater efficiency while using instrumental variables to capture endogeneity, mitigate heteroskedasticity, and address serial correlation in the model. The regression results indicate that exports to East Asia and the Pacific contribute to an increase in GDP per capita by an average of 0.016% for every 1% increase in export proportion to this region, ceteris paribus, in Upper Middle Income countries. However, the impact is insignificant and non-linear for Lower Middle Income countries. Furthermore, there is no strong evidence that export destinations to Europe and Central Asia, South Asia, Latin America, the Arab region, or Sub-Saharan Africa are significantly correlated with GDP per capita in either income group. The results of multicollinearity tests, AR(2) tests, and Hansen tests confirm the absence of multicollinearity, serial correlation, and that the instruments used in the model are valid.

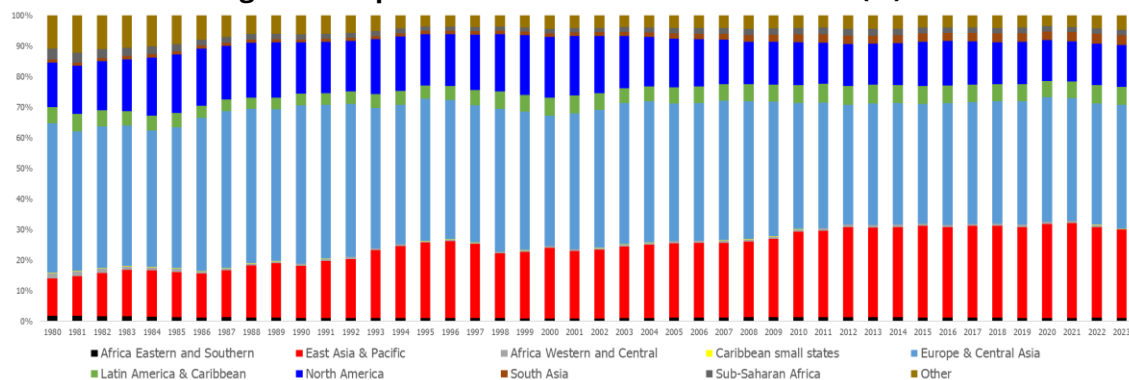
INTRODUCTION

International trade plays an important role in increasing a country's GDP per capita through improvements in production efficiency and access to global markets. The Heckscher-Ohlin theory explains that a country will export goods that utilize abundant production factors and import goods that require scarce production factors. This approach allows countries to maximize their comparative advantage, which in turn has a positive impact on economic efficiency and increases national output.

Similarly, Krugman and Obstfeld (2003) state that international trade enables countries to allocate resources more efficiently through specialization in sectors that possess productivity advantages. The end result is an increase in output and public welfare through a surge in GDP per capita. This context provides a strong theoretical foundation that economic openness and export strategies are closely related to economic development.

World Bank data from 2022 recorded that total global trade reached USD 32.3 trillion, with a large contribution from high-income countries. Countries such as Germany, China, Canada, and Norway show that high trade openness often aligns with high levels of GDP per capita. The ratio of international trade to Canada's GDP was recorded at over 67% in 2022 and 2023, while its GDP per capita reached over USD 44 thousand. Norway recorded an even higher ratio, around 80%, with GDP per capita approaching USD 79 thousand.

Figure 1 Proportion of World Trade Destinations (%)



Source: World Bank, 2024

The relationship between trade openness and economic welfare has indeed been widely discussed. However, few studies highlight the specific role of export destinations. Most research tends to focus more on the volume or aggregate value of exports, or on product sector diversification. In fact, the direction of export destinations can influence value added, competitiveness, and the structure of domestic industries differently.

The World Bank report in October 2023 highlighted that many developing countries have not yet utilized their growth potential due to a lack of mature strategies in determining export destination markets. These countries tend to rely on traditional or high-barrier markets without considering the demand structure or purchasing power of the target countries. This gap signifies the importance of further studies on the impact of export destination choices on GDP per capita.

This study specifically examines the impact of exports to the East Asia and Pacific region on the per capita income of countries categorized as upper middle income (UMI) and lower middle income (LMI). The East Asia and Pacific region is chosen because of its highly active trade dynamics, being the second-largest trade bloc after Europe over the last 40 years, and showing a relatively stable growth trend.

On the other hand, Europe, as the largest trading region, has shown signs of stagnation or even a slight decline in international trade. Meanwhile, the Asia-Pacific region has recorded rapid economic growth, with an average of 4% per year (IMF, 2023), driven by countries such as China,

India, and ASEAN members. This economic strength makes the region a very promising export destination for developing countries.

In addition to its large market potential, the region has high purchasing power, a modern economic structure, and relatively well-maintained political stability. This distinguishes East Asia and the Pacific from other regions such as Africa, Latin America, and the Middle East, which tend to face greater challenges in infrastructure, logistics, and socio-political instability.

Another important factor is the presence of various regional trade agreements in East Asia and the Pacific. For instance, CPTPP which has been in effect since December 2018 covering 11 countries, RCEP which came into effect in January 2022, as well as bilateral agreements such as IA-CEPA between Indonesia and Australia. These agreements serve to lower tariffs, open market access, and strengthen regional economic integration.

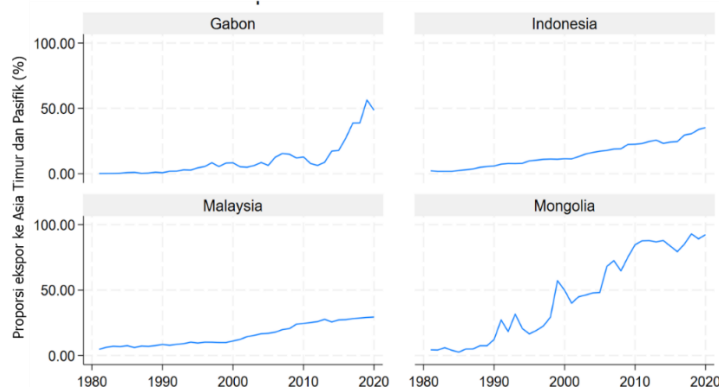
Furthermore, Japan and the European Union have also signed trade agreements that strengthen cross-regional economic relations and open greater export opportunities for developing countries. This cooperation involves the agricultural, services, investment sectors, and intellectual property rights protection. This indicates that the East Asia and Pacific region offers a highly open and competitive trade ecosystem.

In the current global geopolitical context, the high tariff policy from the United States since April 2025 has also influenced the direction of global trade. This tariff pressure has caused developing countries to adjust their export strategies to avoid over-reliance on the U.S. market. In this situation, East Asia and the Pacific become a more stable and prospective alternative.

The increase in exports to the East Asia and Pacific region is also driven by the integration of regional supply chains. Countries such as Japan, South Korea, and China have promoted the modernization of the agricultural and manufacturing sectors through technology exports, infrastructure investments, and the development of cross-country industrial zones. Exports to this region tend to generate higher economic multiplier effects.

Conversely, export destinations to other regions over the past 40 years have shown more fluctuating performance. Logistics barriers, high shipping costs, port inefficiencies, and geopolitical conflicts make regions such as the Middle East, Africa, and Latin America less profitable as long-term destination markets. Exported products to these regions also tend to have lower value added.

Figure 2 Proportion of Export Destinations to East Asia and the Pacific



In previous studies, such as those presented by Bruckner (2016) and Kengkeng (2018), it was found that exports to countries in South Asia, the Middle East, and Africa have not shown a significant contribution to GDP growth. This serves as empirical evidence that the selection of export destinations must consider the quality of the market, not just the quantity of trade.

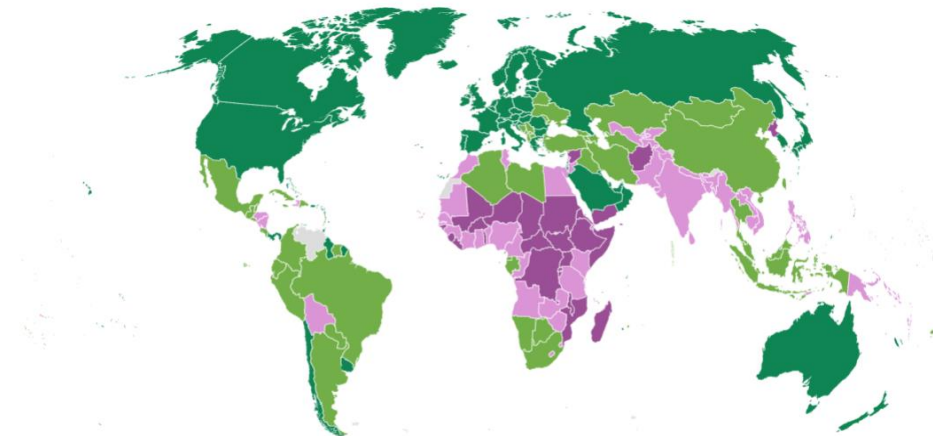
The sample in this study includes countries from the UMI and LMI groups according to the 2024 World Bank classification. UMI countries are those with GDP per capita between USD 4,516 and USD 14,005 and are usually undergoing structural transformation from the agricultural

sector to industry and services. These countries have great potential but also face challenges in achieving equitable welfare distribution.

Conversely, LMI countries have GDP per capita between USD 1,146 and USD 4,515, with high dependence on primary commodity exports and foreign direct investment (FDI) as drivers of economic development. These countries tend to have limitations in infrastructure and human resource capacity, yet are active in international trade to boost their economic growth.

Figure 3 Distribution of UMI and LMI Countries According to the World Bank

■ High Income ■ Upper-middle Income ■ Lower-middle Income ■ Low Income ■ Not Classified



Indonesia is one of the dynamic examples within this category. After being elevated to UMI status in 2019, Indonesia temporarily dropped back to LMI in 2020 due to the impact of the COVID-19 pandemic. However, in 2023, Indonesia re-entered the UMI category with a GDP per capita reaching USD 4,580, indicating that trade direction and strategy play an important role in national recovery and the improvement of overall welfare.

LITERATURE REVIEW

International Trade Theory

One of the most influential classical theories of international trade is Adam Smith's Theory of Absolute Advantage from the 18th century. Adam Smith argued that each country should specialize in producing goods that can be produced at the lowest cost. In this way, trade would benefit all involved parties, as each country could access goods at more efficient prices. This approach promotes specialization and production efficiency while emphasizing the importance of resources and technology.

In contrast to Adam Smith, David Ricardo developed the concept of Comparative Advantage, which serves as the foundation for many modern trade policies. Ricardo stated that even if one country is more efficient in producing all goods than another, trade would still be beneficial if the country specializes in goods it can produce at a relatively lower cost. By doing so, both countries would gain from trade, enhancing welfare and expanding markets. This theory remains relevant today, as countries increasingly rely on each other in international trade.

Paul Krugman (1990), as cited by Ma et al. (2019), through the Hexagon Theory, explored the role of economies of scale and location in determining trade patterns. According to Krugman, companies can reduce production costs through mass production, thereby affecting global product distribution. In this theory, Krugman combines the concepts of economies of scale, transportation costs, and industrial location interactions to explain how production and trade concentration occur in space. The hexagonal model illustrates how industries can become localized in specific areas, creating complex trade patterns based on the interaction between

supply and demand. Krugman argued that factors such as the tendency to produce in large quantities and the benefits of specialization lead to industrial agglomeration in certain locations, resulting in differences in trade patterns between countries.

In line with this, the Heckscher-Ohlin Theory (1919); Heckscher Eli (1991); Singh (2019), emphasizes the relationship between natural resources and comparative advantage in trade. According to Heckscher-Ohlin, a country will export goods that utilize abundant and relatively cheap production factors, while importing goods that require scarce and expensive production factors. Countries rich in labor tend to export labor-intensive goods, whereas countries rich in capital tend to export goods that require high capital investment. The Heckscher-Ohlin theory provides a framework for understanding how factors such as labor, capital, and natural resources influence international trade and contribute to specialization and economic growth.

The Relationship between GDP per Capita and Exports

The relationship between export destinations and GDP per capita in this study is built upon the framework of the Learning-by-Exporting Theory introduced by James Tybout (1998). This theory posits that export activity functions not only as a channel for trade but also as a mechanism for productivity learning. When companies or countries begin exporting to international markets with higher standards, they are encouraged to improve product quality, production process efficiency, and logistical standards.

This process drives learning-by-doing, the adoption of technology, and improvements in technical knowledge, which collectively contribute to increased national output. Thus, exports serve as a catalyst for the enhancement of total factor productivity (TFP), which in turn contributes to GDP growth.

Tybout formulates this dynamic with the following production function:

$$Y_{i,t} = A_{i,t} \cdot F(K_{i,t}, L_{i,t})$$

$A_{i,t}$ is total factor productivity, as a function of previous export experience:

$$A_{i,t} = A_{i(t-1)} + \lambda \cdot \text{Export}_{i(t-1)} + \varepsilon_{i,t}$$

λ represents the positive effect of export activities on productivity, which impacts the output $Y_{i,t}$.

This model assumes that the higher the export involvement—especially to markets with higher technical standards—the greater the long-term productivity gains will be. This strengthens the causal relationship between exports and economic growth.

In line with this, the studies by Petrović (2011), Cebula (2010), and Blancas et al. (2024) show that trade has a significantly positive effect on GDP per capita. Using cross-country data and instrumental variable approaches, they found that increased trade openness is associated with long-term economic growth. Countries that are more open to trade tend to have higher levels of productivity and per capita income. Furthermore, trade liberalization has a positive effect on GDP per capita growth in developing countries, as it opens access to markets that lead to increased efficiency and economic growth.

The Role of Government in Selecting Export Destinations

The selection of export destination countries is not entirely determined by market mechanisms such as price fluctuations, international demand, or natural comparative advantages. Several studies have shown that governments play a strategic role in directing export flows to specific countries through promotional policies, trade diplomacy, and the formation of free trade agreements (FTAs). Studies by Belloc (2011), Carballo (2008), and Görg et al. (2008) found that nearly all developing countries have export promotion agencies that actively identify priority markets and organize trade missions, international exhibitions, and technical

training designed to open targeted market access. This indicates that market expansion is not merely a response to external conditions but a result of institutional government planning.

The above studies show that export promotion programs not only increase total export volume but also specifically expand the extensive margin in terms of the number of products and destination countries. Government interventions enable firms to enter new markets that were previously unreachable through incentive strategies and administrative facilitation.

For a number of countries in the UMI region with strong institutions, exports to East Asia and the Pacific can be seen as part of a long-term strategy directed by the government. Through the establishment of regional FTAs, the deployment of economic diplomats in target countries, as well as export incentives and protection for strategic sectors, governments can systematically position national exporters within regional value chains. This is also in line with Strategic Trade Theory (Spencer and Brander, 1983), which emphasizes that trade policies can be utilized to create industrial advantage, rather than merely responding to market signals.

METHODS

Data

This study uses secondary data collected from various official sources, including the World Bank, IMF, and OECD, covering the observation period from 1981 to 2020. The type of data used is panel data, with the unit of analysis consisting of 39 upper middle-income (UMI) countries and 39 lower middle-income (LMI) countries according to the World Bank classification.

The 39 UMI countries in the sample are: Albania, Algeria, Argentina, Armenia, Azerbaijan, Belarus, Belize, Bosnia and Herzegovina, Brazil, China, Colombia, Costa Rica, Ukraine, Turkmenistan, Dominican Republic, Ecuador, El Salvador, Equatorial Guinea, Fiji, Gabon, Georgia, Guatemala, Indonesia, Iran, Iraq, Jamaica, Kazakhstan, Libya, Malaysia, Mauritius, Mexico, Moldova, Mongolia, North Macedonia, Paraguay, Peru, South Africa, Thailand, and Turkey.

Meanwhile, the 39 LMI countries include: Angola, Bangladesh, Benin, Bolivia, Cabo Verde, Cameroon, Comoros, Congo Rep., Côte d'Ivoire, Egypt, Arab Rep., Ghana, Haiti, Honduras, India, Jordan, Kenya, Lao PDR, Lebanon, Mauritania, Morocco, Guinea, Nepal, Nicaragua, Cambodia, Pakistan, Zimbabwe, Philippines, Samoa, Vietnam, Senegal, Solomon Islands, Sri Lanka, Tanzania, Tunisia, Vanuatu, Bhutan, Djibouti, Nigeria, and Papua New Guinea.

Data on GDP per capita, export destinations to East Asia and the Pacific, destinations to other regions, inflation, investment, real effective exchange rate, real interest rate, crises, and trade were obtained from the World Development Indicators, cross-verified with data from ILO Data Explorer and UNCTAD Investment Map. Data on cooperation were obtained from UNCTAD Investment Policy Hub.

The dependent variable or Y in this study is GDP per capita, which is the gross domestic product divided by the average population per year. The key independent variable of interest is the proportion of export value to East Asia and the Pacific relative to GDP in each sample country. The full set of variables used is detailed in the following table.

Tabel 1 Variabel Description

Symbol	Variables	Operational Definition	Unit
Variabel Dependen			
InGDPpK	InGDP kapita	per Average income per person during a certain period in a country	Log
Variabel Independen			
L.GDPpK	GDP per kapita t-1	GDP per capita in the previous year	Log
ATAP	Exports to East	Percentage of exports destined for East	% of total

Symbol	Variables	Operational Definition	Unit
	Asia and Pacific	Asia and the Pacific region from total national exports	exports
EAT	Exports to Europe and Central Asia	Percentage of exports destined for Europe and Central Asia from total national exports	
AsiaSel	Exports to South Asia	Percentage of exports destined for the South Asia region	% of total exports
ALC	Exports to Latin America	Percentage of exports destined for the Latin America and Caribbean region	
Arab	Ekspor to Arab	Percentage of exports destined for Arab countries	
SSA	Ekspor to Sub Sahara Afrika	Percentage of exports destined for the Sub-Saharan Africa region	
Ekspor_Lain	HighEAT, AsiaSel, ALC, Arab, SSA	Combined percentage of exports to Europe and Central Asia, South Asia, Latin America and Caribbean, Arab, Sub-Saharan Africa	
Variabel Kontrol			
Investasi	Investment	Foreign direct investment (FDI) and domestic investment	%
Trade	Trade	Level of economic openness (ratio of international trade to GDP)	%
RIR	Real interest rate	Effective interest rate (adjusted for inflation)	%
REER	Real effective exchange rate	Exchange rate compared to trade partner currencies, adjusted for inflation differences between countries	USD
Inflasi	Inflation	The process of increasing the general and continuous prices of goods and services in an economy over time	%
D_Krisis	Dummy Crisis	1 if in crisis condition, 0 if not	Category (0/1)
D_Multi	Multilateral cooperation	Multilateral cooperation involving the sample country	Category (0/1)
D_ATAP	Bilateral cooperation in the ATAP region	Bilateral cooperation in the East Asia and Pacific region	Category (0/1)
D_Asia	Country from the Asian continent	1 if the exporting country is in Asia, 0 if not	Category (0/1)

Economic Model

This study examines the relationship between export destinations to East Asia and the Pacific and GDP per capita. The relationship between exports and other independent variables with GDP per capita is believed to be dynamic, in which the output of GDP per capita in year t is influenced by year $t-1$ or $t-2$. Endogeneity arises when independent variables are correlated with the error term or when there is reverse causality. If the data analysis uses standard OLS or Fixed Effects models, the coefficient estimates are likely to be biased and inconsistent.

To address this, the study employs a dynamic panel GMM System Arellano-Bond 2-step model, which combines level and first-difference equations for greater efficiency by using instrumental variables that can capture endogeneity, overcome heteroskedasticity, and correct serial correlation in the model.

The 2-step Arellano-Bond System GMM panel is used to address potential endogeneity among the independent variables, dependent variable, and the error term. The GMM System (2-step) is also more effective at addressing heteroskedasticity and autocorrelation, as well as controlling for the effects caused by variable lags, consistent with the findings of Arellano and Bond (1991), Blundell (1998), and Wafa (2021).

The specification of the chosen economic model is as follows:

$$\begin{aligned} \ln GDP_{it} = & \beta_0 + \beta_1 GDP_{i,t-1} + \beta_2 ATAP_{i,t-1} + \beta_3 Inflation_{i,t-1} + \beta_4 RIR_{i,t-1} \\ & + \beta_5 Ekspor_Lain_{i,t} + \beta_6 Investasi_{i,t} + \beta_7 Trade_{i,t} + \beta_8 REER_{i,t} \\ & + \beta_9 D_Krisis_{i,t} + \beta_{10} D_Benua_{i,t} + \beta_{11} D_Multi_{i,t} + \beta_{12} D_ATAP_{i,t} \\ & + \mu_i + \lambda_t + \varepsilon_{it} \end{aligned}$$

This study tests the following hypotheses by analyzing export destination data to East Asia and the Pacific and GDP per capita from several UMI and LMI countries, while also considering relevant control variables to gain a comprehensive understanding of the relationship between the selection of export destinations to East Asia and the Pacific and GDP per capita.

a. Null Hypothesis (H_0):

The selection of export destinations to East Asia and the Pacific has no significant impact on GDP per capita in UMI and LMI countries.

b. Main Hypothesis (H_1):

The selection of export destinations to East Asia and the Pacific has a significant positive impact on GDP per capita in UMI and LMI countries.

RESULTS

Identification of Endogenous and Exogenous Variables

To identify exogenous and endogenous variables, this study uses the Hansen Test and the Durbin-Wu-Hausman (DWH) Test, as recommended by Greene (2012). The testing steps are as follows: first, a relevance test is conducted to determine the correlation of the variable with its lags at $t-1$, $t-2$, $t-3$ as instruments. For example, to test whether the Investment variable is endogenous or exogenous, the regression is performed as follows: *reg Investment L.Investment L2.Investment L3.Investment* If the p-value is significant, the lag instruments are considered relevant due to a strong correlation.

Next, the Sargan and Basman tests are performed using the following command: *ivregress 2sls lnGDPpK (Investment = L.Investment L2.Investment L3.Investment) lnATAP Ekspor_Lain RIR Inflation D_Krisis REER Trade ATAP_Continent D_Multi D_ATAP*. If the Sargan/Hansen and Basman test p-values are > 0.05 , the instrument is exogenous; otherwise, it is not.

Based on the results of the Hansen and DWH tests, the variables identified as endogenous are GDPpK, Inflation, RIR, and ATAP. The variables identified as exogenous are Other Region Exports, Investment, REER, Trade, ATAP_Continent, D_ATAP, D_Multi, and D_Krisis.

Thus, the variables GDPpK, Inflation, RIR, and ATAP are influenced by other variables in the model and are believed to be correlated with the error term; therefore, they need to be instrumented using their lags. Meanwhile, the variables Exports to other regions, Investment, REER, Trade, ATAP_Continent, D_ATAP, D_Multi, and D_Krisis are believed not to be influenced by the error term and do not cause endogeneity in the model, so they can be included in the main regression or used as exogenous instruments.

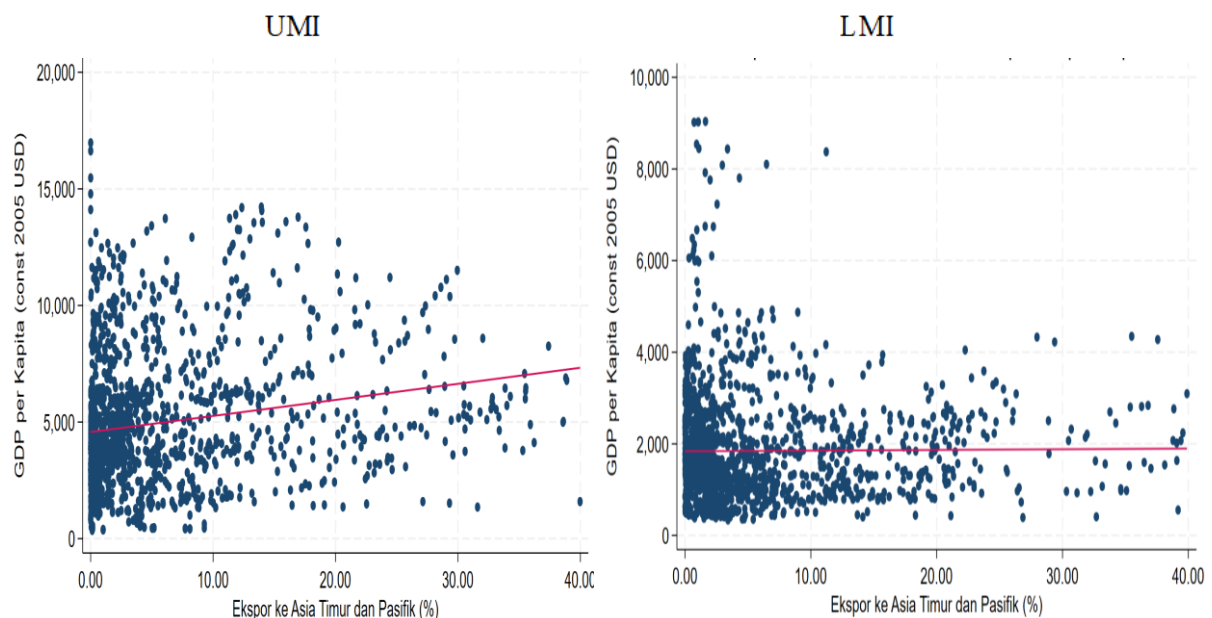
The Relationship Between GDP per Capita and ATAP

The graph below shows the relationship between the percentage of exports to East Asia and the Pacific and GDP per capita in the UMI and LMI groups.

From the pattern of the scatter plot, it appears that the relationship between exports to East Asia and the Pacific and GDP per capita is more visible in the UMI group compared to the LMI group, although the correlation is relatively weak.

The trendline in the UMI group shows a positive relationship, meaning that the greater the proportion of exports to East Asia and the Pacific, the higher the GDP per capita. Meanwhile, in the LMI group, the trendline tends to flatten, indicating that an increase in exports to this region does not produce a significant impact on economic growth in countries within this group.

Figure 4 Scatter Plot of GDP per Capita and Export Destinations to East Asia and the Pacific (1981–2020)



LMI countries tend to have a higher dependency on specific commodities. Therefore, when demand in East Asia and the Pacific declines or global price fluctuations occur, the impact on GDP per capita in LMI countries is more significant. This is reflected in the data distribution in the LMI scatter plot, where the points are more densely concentrated at the lower end with a more even spread. In contrast, the UMI group shows a tendency to increase along with higher export shares.

The limited diversification of exports and low added value of exported products are the main obstacles for LMI countries to gain maximum benefits from trade with this region.

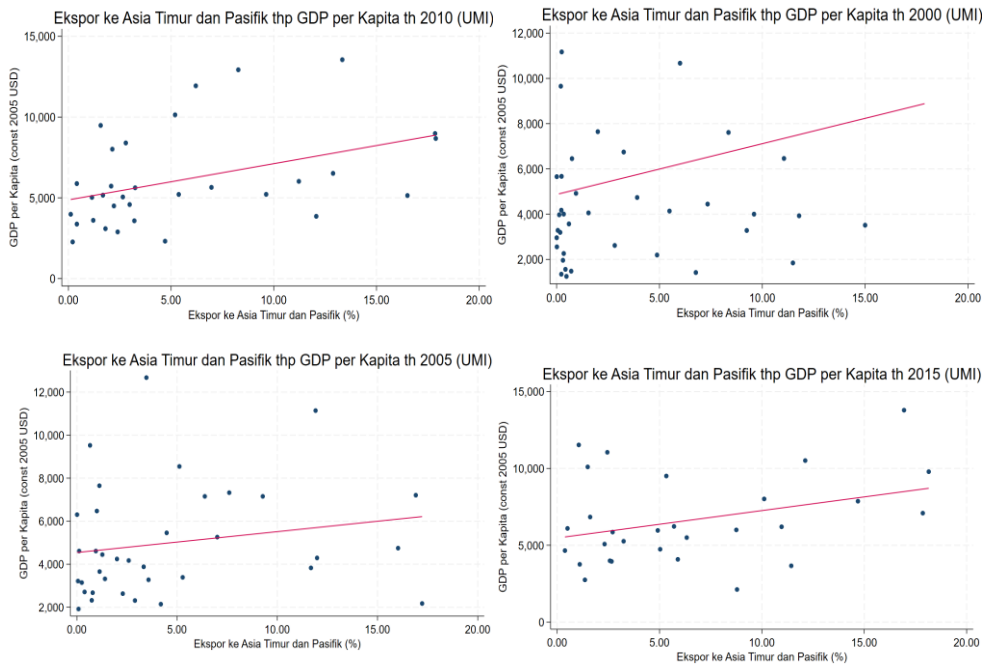
In line with the average trend during the observation period, when examining the scatter plots for four different time points (2000, 2005, 2010, and 2015), it is evident that the relationship between the percentage of exports to East Asia and the Pacific and GDP per capita is clearer in the UMI group than in the LMI group.

In the UMI group, the trendline consistently shows a positive slope across all periods. Although the correlation is not particularly strong, the pattern is consistent in each year's sample, indicating that exports to East Asia and the Pacific contribute to the GDP of UMI countries.

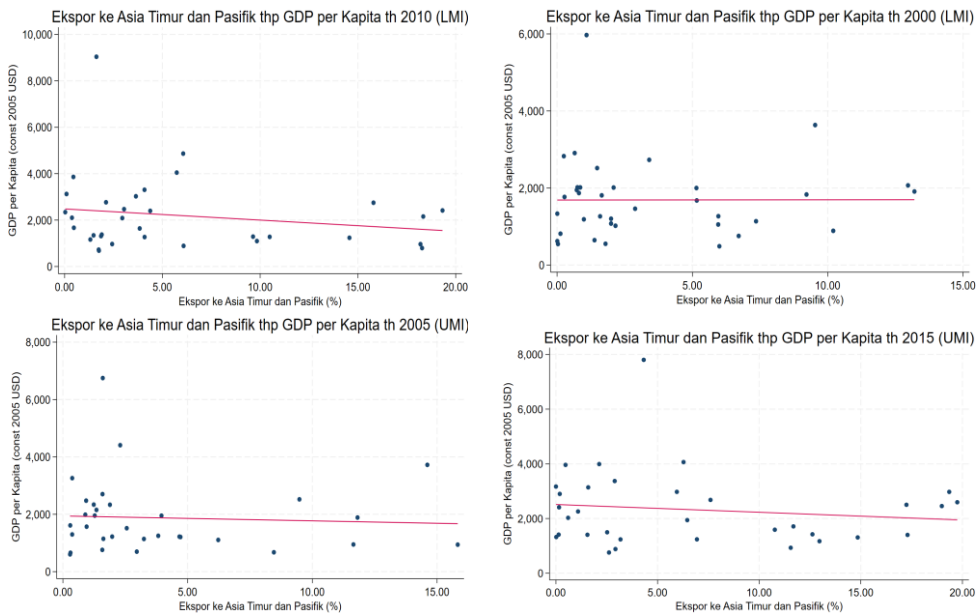
On the other hand, in the LMI group, the trendline is almost flat or even slightly negative, suggesting that an increase in exports to this region does not have a clear or meaningful relationship with GDP per capita—and may even show a slight negative correlation.

Figure 5 Scatter Plot of GDP per Capita and Export Destinations to East Asia and the Pacific (4 Sample Time Points)

UMI Group



LMI Group



From the distribution of the data points, the UMI country group shows a wider spread in GDP per capita, with several countries recording GDP per capita above USD 10,000, especially after 2010. In contrast, in the LMI group, most of the data points are concentrated below USD 4,000, with little change over the observed period. This indicates that in UMI countries, exports to East Asia and the Pacific are believed to support economic growth, whereas in LMI countries, such exports are not sufficient to significantly drive increases in GDP per capita.

Looking at the trendline slopes, the UMI group shows a strengthening relationship between exports to East Asia and the Pacific and GDP per capita after the year 2000. The trendline in 2015 is steeper than in 2000, indicating that the impact of exports on GDP per capita has become stronger over time. Conversely, in the LMI group, the trendlines remain nearly horizontal throughout the period, suggesting no meaningful relationship between the two variables in these countries. This indicates that although trade with East Asia and the Pacific has increased in some LMI countries, its effect on GDP remains limited.

Estimation Results for UMI and LMI

Table 2 presents several steps taken to arrive at the final specification used to estimate the impact of export destination choices to East Asia and the Pacific (ATAP) on GDP per capita. The estimation results were obtained using the dynamic panel GMM Arellano-Bond method for both UMI and LMI groups.

Table 2. Estimation of the Impact of ATAP on GDP per Capita - UMI Group

		Variable Dependen: lnGDPpK				
		(1)	(2)	(3)	(4)	(5)
Variable Independen						
lnATAP		0.0102** (0.006)	0.0179*** (0.0077)	0.0203*** (0.0083)	0.0157*** (0.0052)	0.0138** (0.0067)
Other export destination						
EAT		-0.0012 (0.001)	0.0014* (0.003)	-	-0.0027 (.001)	-0.0023 (.002)
Asia Sel		-0.0041 (0.002)	-0.0001 (0.003)	-	-0.0013 (.002)	-0.0045 (.001)
ALC		0.0011 (0.001)	0.0002 (0.002)	-	0.0001 (.001)	-0.0000 (.001)
Arab		-0.0014* (0.001)	0.0002 (0.004)	-	0.0005 (.002)	-0.0001 (.001)
SSA		0.0034 (0.002)	-0.0011 (0.004)	-	0.0001 (.001)	-0.0002 (.001)
Ekspor lain		-	-	0.0011 (.001)	-	-
Control Variable						
GDPpK t-1		0.8787*** (0.044)	0.9396*** (0.057)	0.9787*** (.045)	0.8884*** (0.076)	0.9449*** (.082)
Trade		0.0002 (0.001)	-	0.0001 (.001)	0.0004* (.001)	0.0006** (.001)
Investment		0.0026*** (0.001)	-	0.0014* (.001)	0.0015* (.001)	0.0015** (.001)
Inflation		-0.0002*** (0.001)	-	-0.0002*** (.001)	-0.0002** (.001)	-0.0002*** (.001)
REER		-0.0000 (0.001)	-	-0.0002* (.001)	-0.0001 (.001)	-0.0001 (.001)
RIR		-0.0003 (0.002)	-	-0.0003 (.001)	-0.0001 (.001)	0.0001 (.001)
D_Krisis		-0.0626*** (0.011)	-	-0.0552*** (.013)	-0.0451*** (.018)	-0.0782** (.030)
D_Asia		0.0032**	-	-0.0010	0.0017*	0.0022**

	(0.011)		(.001)	(.001)	(.001)
D_Multi	0.0581*	-	-0.0136	0.0046	0.0027
	(0.001)		(.028)	(.025)	(.031)
D_ATAP	0.0010	-	-0.1053	-0.0160	-0.0482
	(0.001)		(.046)	(.066)	(.029)
Instrumental variables					
Numb of Instrumen	758	19	35	38	38
Observation	1.342	1.383	1.383	1.383	1.157
Validitas test					
Multikolinearitas	1.32	1.14	1.28	1.33	1.33
Prob> z AR(1)	0.046	0.004	0.070	0.092	0.093
Prob> z AR(2)	0.674	0.303	0.420	0.407	0.349
Hansen J-test	0.471	0.254	0.613	0.210	0.767
Difference-in-Hansen tests	0.765	0.723	0.735	0.339	0.729

Parentheses indicate standard errors. Statistical significance at the 1%, 5%, and 10% levels is denoted by *, *, and , respectively.

Table 3. Estimation of the Impact of ATAP on GDP per Capita – LMI Group

		Variable Dependen: lnGDPpK				
		(1)	(2)	(3)	(4)	(5)
Variable Independen						
InATAP		0.0027 (0.0014)	-0.0159 (0.0077)	-0.0294 (0.0032)	-0.0163 (0.008)	-0.0177 (0.009)
Destinasi ekspor lain						
EAT		0.0003 (0.009)	0.0014 (0.027)	-	-0.0008 (.006)	-0.0016 (.004)
Asia Sel		0.0009* (0.025)	0-0.0001 (0.038)	-	-0.0001 (.001)	-0.0000 (.001)
ALC		0.0015* (0.017)	0-0.0002 (0.071)	-	0.0019 (.001)	-0.0016 (.002)
Arab		0.0004 (0.081)	0.0002 (0.021)	-	0.0003 (.003)	0.0008 (.002)
SSA		0.0001 (0.021)	-0.0011* (0.09)	-	-0.0011* (.001)	-0.0019* (.001)
Ekspor_lain		-	-	-0.0013 (.001)	-	-
Variabel Kontrol						
GDPpK t-1		0.9284*** (0.071)	0.9396*** (0.061)	0.9179*** (.050)	0.919*** (.046)	0.956*** (.027)
Trade		-0.0006** (0.002)	-	-0.0008 (.001)	-0.0008** (.001)	-0.0009 (.001)
Investasi		0.0007** (0.001)	-	0.0024 (.001)	0.0025*** (.001)	-0.0022 (.001)
Inflasi		-0.0002* (0.004)	-	-0.0004 (.001)	-0.0003* (.001)	-0.0003 (.001)
REER		-0.0001***	-	-0.0001***	-0.0001***	-0.0001***

	(0.006)		(.001)	(.001)	(.001)
RIR	0.0002 (0.006)	-	-0.0012 (.001)	-0.0009 (.001)	0.0005 (.001)
D_Krisis	-0.0153* (0.002)	-	-0.0316* (0.017)	-0.0279* (.035)	-0.0584* (.031)
D_Asia	0.0005 (0.001)	-	0.0013 (.001)	0.0013** (.001)	-0.0035 (.002)
D_Multi	0.0310 (0.029)	-	-0.0106 (.034)	-0.0289 (.032)	0.0019 (.031)
D_ATAP	0.0096 (0.043)	-	0.0743 (.049)	0.0646*** (.026)	0.0787** (.033)

Instrumental variables

Numb of Instrumen	748	19	29	32	32
Observation	1.082	1.302	1.153	1.126	917

Validitas test

Multikolinearitas	1.36	1.14	1.19	1.32	1.33
Prob> z AR(1)	0.009	0.004	0.002	0.000	0.000
Prob> z AR(2)	0.491	0.303	0.572	0.461	0.927
Hansen J-test	0.781	0.254	0.924	0.901	0.875
Difference-in-Hansen tests	-	0.723	0.790	0.870	0.621

***Parentheses indicate standard errors. Statistical significance at the 1%, 5%, and 10% levels is denoted by ***, *, and , respectively.*

Column Descriptions

1. Arellano-Bond GMM 1-step model (GMM Difference)
2. Arellano-Bond GMM 2-step model (GMM System) without control variables
3. Arellano-Bond GMM 2-step model (GMM System) with 2 export destinations
4. Arellano-Bond GMM 2-step model (GMM System) with 6 export destinations
5. Arellano-Bond GMM 2-step model (GMM System) with 6 export destinations, excluding countries from East Asia and the Pacific

Estimation in column (1) uses the Arellano-Bond 1-step GMM Difference method. The regression results show significant differences in the impact of exports to East Asia and the Pacific (lnATAP) on GDP per capita between the UMI and LMI groups. The coefficient and statistical significance differences indicate how the economic structure of each group affects the relationship between the independent variable and the dependent variable, log GDP per capita (lnGDPpK). This is consistent with the scatter plot distributions in Charts 4.4 and 4.5.

In the UMI group, a coefficient of 0.0102 with $p < 0.05$ indicates that a 1% increase in exports to East Asia and the Pacific is associated with an average GDP per capita increase of 0.0102%. This positive and significant relationship suggests that UMI countries are able to leverage exports to this region for economic growth. Conversely, in the LMI group, the coefficient for lnATAP is 0.0027 and is not statistically significant, suggesting that exports to East Asia and the Pacific do not have a strong influence on GDP per capita in LMI countries.

Column (1) uses a GMM Difference model (1-step) with 748 instruments, which is considered inefficient and may lead to overfitting or unreliable estimates. Therefore, model (2) is developed using the Arellano-Bond GMM System (2-step). In this model, only the t-1 lag of the dependent variable is used to control for endogeneity, without including other control variables

apart from export destinations. As a result, the number of instruments is significantly reduced from 748 to 19 instruments.

Similar to Model (1), Model (2) shows a significant difference in the impact of InATAP on GDP per capita between the two groups. A coefficient of 0.0179 with $p < 0.01$ indicates that a 1% increase in exports to East Asia and the Pacific correlates with an average increase in GDP per capita of 0.0179%. Though small, this relationship is positive and highly significant, suggesting that UMI countries benefit from trade with this region. In the LMI group, the coefficient of -0.0159 is negative and not significant, indicating that increasing exports to East Asia and the Pacific does not contribute to economic growth—and may even be negatively associated.

The coefficient for GDPpK lag (t-1) in both groups is 0.9396 with $p < 0.01$, demonstrating that past GDP per capita has a strong influence on current GDP per capita. This reflects stable economic growth in both groups, where past economic progress continues to drive future growth. Economic growth in both UMI and LMI countries is not solely driven by trade but also by factors like investment, industrialization, and services.

Model (2)'s specification is still incomplete, as it lacks control variables that are directly or indirectly correlated with GDPpK. Therefore, Model (3) introduces control variables: Trade, Investment, Inflation, REER, RIR, D_Krisis, ATAP_Continent, D_Multi, and D_ATAP. Export destinations are categorized into two: East Asia and the Pacific, and Other Regions, forming a new variable "Ekspor_Lain". Model (3)'s output is consistent with Models (1) and (2), showing a significant difference in the impact of InATAP on GDP per capita between UMI and LMI.

In the UMI group, a coefficient of 0.0179 with a standard error of 0.0077, significant at $p < 0.01$, suggests that a 1% increase in exports to East Asia and the Pacific raises GDP per capita by 0.0179%. The high statistical significance reflects a strong and stable relationship, confirming that UMI countries effectively leverage exports to boost economic growth. In the LMI group, a coefficient of -0.0159 with the same standard error is not significant, indicating that exports to this region do not significantly contribute to GDP growth. The negative sign suggests a potentially adverse effect, although the relationship is not statistically meaningful.

As in previous models, the GDPpK t-1 variable remains highly significant (0.9396, $p < 0.01$) in both groups, highlighting strong dependency on past economic performance. This implies that without structural changes, LMI countries are unlikely to experience rapid growth.

Model (4) extends Model (3) by splitting export destinations into six regional categories to examine differential impacts on GDP per capita. As in previous models, the impact of exports to East Asia and the Pacific differs significantly between UMI and LMI. In UMI countries, the coefficient is 0.0157 with a standard error of 0.0052, significant at $p < 0.01$, showing that a 1% increase in exports corresponds to an average 0.0157% rise in GDP per capita. The smaller standard error compared to prior models suggests greater precision and reinforces the conclusion that UMI countries benefit from exports to this region.

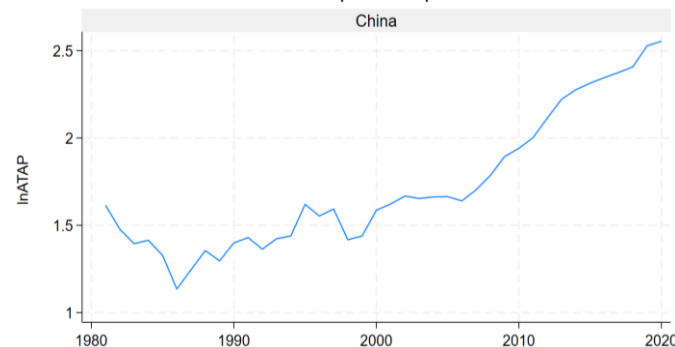
In the LMI group, the coefficient is -0.0163 with a standard error of 0.008, which is not significant. This suggests that exports to East Asia and the Pacific do not provide a strong enough boost to GDP growth in LMI countries. The negative sign indicates a possible unfavorable effect, although the statistical evidence is insufficient. The higher standard error also indicates that the export impact is more volatile and harder to predict in these countries.

The lagged GDP per capita variable (GDPpK t-1) shows a coefficient of 0.8884 in UMI ($p < 0.01$) and 0.9199 in LMI ($p < 0.01$), reaffirming that LMI growth remains heavily reliant on past economic conditions—even more so than UMI. The slightly lower coefficient in Model (4) compared to Model (2) suggests that while additional factors are now considered, LMI growth remains structurally rigid compared to UMI. This also indicates that GDP per capita in both groups is increasingly influenced by factors like trade, investment, and interest rates—even though historical conditions still play a dominant role.

Model (5) uses the same specification as Model (4), but excludes sample countries located in East Asia and the Pacific. This involves removing 6 UMI countries (China, Fiji, Indonesia,

Malaysia, Mongolia, Thailand) and 8 LMI countries (Lao PDR, Cambodia, Philippines, Samoa, Vietnam, Papua New Guinea, Solomon Islands, and Vanuatu). This exclusion helps test the stability of the lnATAP coefficient and assess potential estimation bias, given that these countries belong to the same destination region under study.

Figure 6



If the sample of countries located in the East Asia and Pacific region is excluded from the model, the coefficient of the lnATAP variable remains largely unchanged, becoming 0.0138—still significant and stable. Countries in the East Asia and Pacific region with volatile growth in export proportions were excluded from the sample, which reduced the standard error, thereby increasing the significance level of several control variables.

The structural relationship between exports to East Asia and Pacific (ATAP) and GDP per capita does not rely exclusively on countries within the ATAP region but also represents a structural pattern found in many other Upper Middle-Income (UMI) countries.

The decrease in standard deviation and mean indicates that the growth of export proportion to their own region is quite volatile, yet not extreme enough to reverse the direction or strength of the estimation. With these considerations, Model (4) and (5) are deemed the best specifications for comparing destinations to other regions, as they use fewer instruments and have smaller standard errors, making the model more efficient and reliable.

In Model (4), export destinations to regions such as Europe and Central Asia, South Asia, Latin America and the Caribbean, Arab countries—whether for UMI or Lower Middle-Income (LMI) groups—are all statistically insignificant.

This aligns with the visualization seen in Graph 4.7, where the trend in export destination proportions to these regions appears less linear in comparison to the GDP per capita trends in both country groups.

Exports to Sub-Saharan Africa are significantly negative for the LMI group, and insignificant for the UMI group, indicating that export destinations to this region offer low added value and are less beneficial for LMIs. These findings are consistent with the regional trade pattern in East Asia and the Pacific, which is highly integrated both logistically and through supply chain structures. Several UMI countries play important roles in regional production networks, meaning their exports are not simply final product transactions but part of joint production systems.

In contrast, LMI countries tend to export raw commodities to the same markets without participating in the production chain flow, resulting in exports to the same destinations contributing differently to GDP per capita.

This finding also aligns with studies by Mingming (2018) and Baidoo (2022), which show that to boost economic growth, ASEAN countries benefit the most when they export to regions like Japan, Korea, and China. Exports to the rest of the world do not produce a significant positive impact on economic growth.

Other variables with significant relationships to GDP per capita in UMI countries include trade, inflation, investment, crisis, and regional interaction. Inflation, real interest rates, and

crises have negative correlations with GDP per capita, while trade, investment, and regional interaction have positive correlations. In LMI countries, other variables significantly related to GDP per capita include trade, investment, real effective exchange rate, inflation, crisis, regional interaction, and bilateral cooperation.

Variables with a positive correlation with GDP per capita are investment, regional interaction, and bilateral cooperation, while trade, inflation, exchange rate, and crises are negatively correlated with GDP per capita.

Multicollinearity tests for both UMI and LMI groups show values far below 10, indicating no strong multicollinearity among variables. The AR(2) test shows a p-value above 0.05, so there is no strong serial correlation. The Hansen test confirms that all instruments, both endogenous and exogenous, are relevant and valid.

DISCUSSION

Relationship between Export Destination to East Asia and Pacific and GDP per Capita

The relationship between exports to East Asia and Pacific and GDP per capita is positively significant in the UMI group and negatively insignificant in the LMI group. This is reflected in the exchange rate variable, which is insignificant in UMI but negatively significant in LMI. With the same export proportion and currency depreciation in both groups, the impact differs: it reduces GDP per capita in LMI but does not reduce GDP per capita in UMI.

This is also supported by Saha (2022) and Ebrahimi (2016), who argue that lower-income countries rich in natural resources and reliant on the primary sector tend to be more vulnerable to conflict, corruption, and poor institutional quality. Thus, the same export proportion with advanced countries results in different impacts on GDP.

These findings are consistent with the Asian Economic Integration Report 2024, which states that regional production networks and economic integration in East Asia have approached EU levels. East Asia's regional trade pattern is highly integrated, both logistically and in supply chain structure.

According to the UNCTAD World Investment Report (2023), several UMI countries (China: manufacturing; Malaysia: semiconductors; Philippines: electronic components) hold key positions in the regional production network, so their exports are part of joint production systems rather than mere final product transactions. On the other hand, most LMI countries primarily export raw commodities to the same markets without participating in the production chain flow.

For example, in 2023:

1. Angola exported crude oil (82.76% of total exports),
2. Bangladesh exported textiles (77%),
3. Papua New Guinea exported natural gas (45%).

These differences in roles within the production chain mean that exports to the same destination yield different contributions to GDP per capita. This is also consistent with the Asian Noodle Bowl Theory (Verico, 2017), which suggests that countries capable of understanding and strategically navigating the complexity of East Asia can gain structural advantages through preferential tariffs, accumulation of rules of origin, and entry into stronger regional production networks.

Relationship Between International Cooperation and GDP per Capita

In both UMI and LMI country groups, the impact of multilateral cooperation on GDP per capita is not significant. This aligns with the Theory of Fragmentation (Klingebiel, 2013) and the Theory of Complexity and Transaction Costs in Multilateralism (Drezner, 2000), which argue that multilateral cooperation is often fragmented and inefficient due to conflicting interests among participating countries.

The more countries involved in a multilateral agreement, the higher the coordination and transaction costs. Geographical proximity to East Asia and the Pacific is believed to contribute positively to GDP per capita growth by lowering export costs in both country groups. Bilateral cooperation in the Asia Pacific region is positively correlated with GDP per capita in the LMI group (significant at 1%) and not significant in the UMI group.

This aligns with the Endogenous Growth Theory (Romer, 1986) and Comparative Advantage Theory (David Ricardo, 1817), where low-income countries entering bilateral cooperation with more developed nations gain greater market access, boosting exports—particularly in the primary and light manufacturing sectors—contributing positively to GDP per capita.

According to these theories, countries with weaker economies gain higher marginal benefits from trade agreements because of a low export baseline. In contrast, high-income countries experience diminishing returns, so additional benefits from cooperation do not significantly increase GDP.

Relationship Between Crisis, Inflation, Trade, Exchange Rate, Investment, and Lagged GDP with GDP per Capita

Crises are negatively correlated with GDP per capita in both groups, as the largest GDP contributor in both is household consumption.

1. Thus, crises and/or inflation reduce purchasing power and consumption, affecting GDP.
2. Trade is significantly correlated in both groups, but positively in UMI and negatively in LMI.
3. This reflects the trade balance trend in LMI countries, which is mostly in deficit, while in UMI it is mostly surplus.

If LMI countries do not aim for a positive trade balance by optimizing exports, trade will further reduce GDP. The exchange rate is negatively significant in LMI and not significant in UMI. Trade deficits occurring nearly every year from 1981 to 2023 indicate LMI countries' dependence on imports, making them more vulnerable to exchange rate fluctuations.

Investment in both groups has a positive and significant correlation, though the coefficient is slightly higher in LMI. This aligns with the investment trend in LMI countries being more linear with GDP per capita trends over the past 40 years than in UMI countries. This supports the Diminishing Returns Theory (Solow Growth Model, 1956) that lower-income countries tend to experience higher investment returns than higher-income ones. GDP per capita growth in LMI countries heavily depends on past economic conditions, making it difficult for them to achieve rapid growth without significant structural changes.

CONCLUSION

Based on the research findings, the selection of export destinations to East Asia and the Pacific in Upper Middle-Income (UMI) countries can contribute to an increase in GDP per capita by an average of 0.016% for every 1% increase in the proportion of exports to the region, *ceteris paribus*. If countries within the East Asia and Pacific region are excluded from the model, the coefficient of the $\ln ATAP$ variable remains largely unchanged at 0.014, and it remains significant and stable. The consistency of the structural relationship between exports to ATAP and GDP per capita does not rely exclusively on ATAP countries themselves but also represents a structural pattern present in many other UMI countries.

The decrease in standard deviation and mean indicates that the growth of export proportions to their own region is quite volatile but not extreme enough to reverse the direction or strength of the estimation. Export destinations to East Asia and the Pacific in Lower Middle-Income (LMI) countries are not significant to GDP per capita.

Export destinations to Europe and Central Asia, South Asia, Latin America, Arab countries, and Sub-Saharan Africa do not correlate significantly with GDP per capita in either the UMI or

LMI groups. The selection of export destination countries is not entirely determined by market mechanisms such as price fluctuations, international demand, or natural comparative advantage. Governments play a strategic role in directing export flows to specific countries through promotion policies, trade diplomacy, or the establishment of free trade agreements (FTAs). Government intervention allows firms to enter previously inaccessible markets through incentives and administrative facilitation strategies. According to this study's results, countries become economically stronger when they succeed in targeting the East Asia and Pacific markets—especially when their exports become part of regional production networks.

The real effective exchange rate (REER) variable has a significantly negative effect on GDP per capita in LMI countries, but is not significant in UMI countries. This indicates that LMI countries are more vulnerable to exchange rate fluctuations because they import more consumer goods and raw materials than UMI countries. Investment has a positive and significant impact in both groups, with the coefficient slightly higher in LMI than UMI.

This suggests that economic growth in LMI countries relies more heavily on capital accumulation than on exports. However, barriers to foreign investment and inefficiencies in capital remain major challenges. The model shows that each additional unit of investment in LMI has a greater effect on economic growth compared to UMI, but due to lower overall investment levels in LMI, the aggregate impact remains smaller than in UMI countries. The trade variable (total trade as a percentage of GDP) has a significantly positive effect on GDP per capita in UMI countries, but a significantly negative effect in LMI countries.

This indicates that international trade is more beneficial for UMI countries with higher competitiveness, while for LMI countries, reliance on trade can become a risk if imports dominate over high-value-added exports. Bilateral cooperation in the LMI group is positively correlated with GDP per capita but is not significant in the UMI group. In line with the Endogenous Growth Theory (Romer, 1986) and Comparative Advantage Theory (David Ricardo, 1817), low-income countries that establish bilateral cooperation with more advanced countries gain greater market access, especially for primary and simple manufacturing products.

The coefficient of lagged GDP per capita (GDPpK t-1) is 0.8884 in UMI and 0.9199 in LMI, both significant at $p < 0.01$, indicating that economic growth in both groups is highly dependent on previous year's economic conditions. However, the influence of past GDP per capita is stronger in LMI than in UMI, reflecting a stronger "path dependency"—meaning LMI countries find it harder to achieve rapid structural transformation without significant economic reform.

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