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Deciphering the Influence of Macroeconomic Variables on Fintech Indicators: Evidence from Emerging Market Countries

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ABSTRACT

The rapid growth of financial technology (FinTech) is reshaping financial services worldwide, yet its interaction with macroeconomic fundamentals in emerging markets remains underexplored. This study investigates the influence of key macroeconomic variables—gross domestic product (GDP), inflation, exchange rate, labor force participation, and population growth—on FinTech development in twenty-five emerging economies between 2014 and 2021. Using panel data techniques, including Fixed Effects estimators and robustness checks with Driscoll–Kraay standard errors, the analysis accounts for heteroskedasticity, autocorrelation, and cross-sectional dependence. The findings reveal that GDP per capita and population growth exert significant positive effects on FinTech adoption, while exchange rate volatility demonstrates a negative association. Inflation and labor force participation display mixed and context-dependent impacts. These results highlight the role of macroeconomic stability and demographic dynamics in fostering FinTech innovation across emerging economies. This study contributes to the literature by offering one of the first large-scale empirical examinations of the macro–FinTech nexus in emerging markets, expanding theoretical insights on digital financial transformation. For policymakers, the results underscore the importance of macroeconomic reforms, digital infrastructure investment, and demographic inclusion strategies to accelerate sustainable FinTech development.

INTRODUCTION

FinTech is defined as new technology that seeks to improve and automate the delivery and use of financial services. We could argue that fintech's history dates back to the 19th century. The first phase spanned from 1886 to 1967, which included investment in communications infrastructure, such as the telegraph and transatlantic cables, enabling the transmission of financial information across borders. One could argue that although these fintech types may not be considered as such today, they held significance in their respective eras. During the latter decades of the 20th century, banks and financial firms took charge of the development of financial technology, marking a major shift from analog to digital. Specifically, in 1967, banks introduced the first handheld calculator and ATM. The second phase of fintech growth occurred in the 1980s, when banks' mainframe computers became popular, and in the 90s, the concept of conducting financial transactions online emerged (Arner& Janos, and Ross, 2015). The third phase of fintech growth took place in the 21st century, when banks, companies, and financial firms began shifting their services to digital platforms. However, the financial crisis, coupled with the rise of smartphone usage, had a massive impact on the fintech industry. The 2008 global financial crisis eroded confidence in traditional banking institutions, and together with the broad-based rise in digitalization, it kicked off what we now recognize as the fintech industry. For instance, the introduction of Bitcoin in 2009 significantly affected the financial world, leading to the emergence of numerous other cryptocurrencies. Various fintech business models also began to surface, some of which included alternate credit scoring, digital wallets, and small-ticket loans (Setiawan & Maulisa, 2020). According to the financial literature, fintech is not a new concept. Still, its recent rise and evolution have ushered in a new era by connecting the financial industry, information technology, and innovation. The term "Fin-Tech" derives from the union of the words finance and technology and represents what the acronym means, including the development of technology and innovation to support banking and financial skills with the latest technologies. On the other hand, Fin-Tech describes the relationship between technologies such as cloud computing and mobile internet, alongside the use of the internet to manage financial activities, mobile subscriptions, ATMs, and financial services businesses such as loans, payments, money transfers, and other banking services (Giglio, 2021). It became apparent that digital transformation necessitates the development of new financial infrastructures, such as payment methods, digital identification, and data-sharing platforms, to facilitate various market outcomes. Furthermore, it presents innovative ways to meet this requirement. The impact of transformations in financial infrastructure may be most significant in emerging markets and developing economies, where previous

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infrastructures are predominantly deficient (Feyen & Natarajan, and Saal, 2023). Financial infrastructures are no longer exclusive, as most banks have created payment system operators and sanctioned credit bureaus or asset registries. These improvements in communication across banking systems have expedited transactions in more advanced markets, emerging markets, and developing economies. Furthermore, in emerging markets and developing economies, mobile money systems bridge the gap in access to retail accounts and payment systems, enabling individuals to conduct transactions remotely and allowing SMEs to accept digital payments. Mobile money systems have become a crucial element of the payment ecosystem, assuming certain roles typically associated with the monetary framework (Delort & Garcia Luna 2022). Nowadays, in developed countries, most governments have issued digital identities for accessing financial and other services. Furthermore, private and public sector innovators have introduced non-digital government identification. These new technologies have enhanced the potential reach and influence of pre-existing infrastructures, such as credit information and collateral registries. Moreover, technical advancements have facilitated the emergence of infrastructure solutions, encompassing unique suppliers of alternative data credit.

LITERATURE REVIEW

Fintech, commonly known as internet finance or digital financial inclusion, signifies the integration of finance and information technology. It includes payment and settlement, risk management, networking pathways, and resource allocation activities (Shim, Y., 2016). Recent literature analyzed the global influence of Fintech and its effects on the economy by impacting key factors like as GDP, exchange rates, inflation, labor force participation, and demographic dynamics (population). This section examines selected studies on fintech. The research conducted by Hou, Gao, and Wang (2016) utilized a fintech index from 2003 to 2014 to evaluate the impact of fintech on banking sector discipline and found that fintech reduces the positive correlation between bank deposit growth and capitalization. They also found that when fintech development escalates, the adverse correlations between banks' hazardous assets and deposit growth worsen. A study conducted by Mashamba and Gani (2023) investigated the impact of Fintech on bank funding and economic growth in the region, employing data from 56 banks across 19 Sub-Saharan African economies from 2010 to 2020. The results underscore the robustness of banking funding frameworks against Fintech shocks, stressing the necessity of judicious funding management and ongoing investment in Fintech for enduring economic development in Sub-Saharan Africa. As Fintech evolves and expands, officials must remain watchful and assess its effects on the financial system and regional economic growth. A study conducted by Narayan and Sahminan (2018) demonstrates another aspect of the influence of Fintech. This study examines the macroeconomic effects of fintech firms in Indonesia from 1998 to 2017. The study specifically examines the influence of FinTech on the Indonesian exchange rate and inflation rate. This study's findings indicate that FinTech may mitigate inflation and contribute to a true appreciation of the Rupiah relative to the US dollar, albeit with a delayed impact on the exchange rate. The findings align with the recent study by Afshan *et al.* (2024), which investigated the dynamic relationships among Fintech, digital currencies, exchange rates, oil price volatility, and financial risk from 2011 to 2023. The study's findings indicated that Fintech positively correlates with digital currency and exchange rates, enhancing its capacity to transform the traditional financial sector. The association between Fintech and oil price volatility, as well as financial risk, is negative, indicating that Fintech innovations and improvements have mitigated the impact of these risks. The Fintech sector also influences inflation. The study by Ben *et al.* (2024) seeks to elucidate the influence of Fintech on Asian economies using two primary indicators: inflation and unemployment. The study's findings indicated a continually robust and favorable correlation between the advancement of financial technology and the decrease of inflation and unemployment, provided these technologies are effectively utilized. A subsequent study by Anam *et al.* (2024) examined the influence of Fintech on the inflation rate. The contribution is evident in the development of a novel index for Fintech, incorporating many indicators through principal component analysis. The data employed pertains to a panel dataset concerning the 10 provinces of Sumatra, Indonesia, spanning from January 2020 to June 2023. The study's results suggest that Fintech has the potential to mitigate inflation over the long term. This research study indicates the need to enhance the utilization of Fintech to foster an efficient economic environment and ensure economic stability. Labor force participation is a significant macroeconomic element influencing fintech. According to the study by Mohd Daud *et al.* (2024), FinTech has generated labor-creating impacts, indicating that it creates employment opportunities. Labor market regulation influences employment dynamics, with some parts needing rigorous oversight while others may benefit from deregulation.

Additionally, the study by Elmasmari and Jabrane (2024) investigated the factors influencing financial inclusion and fintech, subsequently assessing their impact on labor force participation in the MENA region. The study's findings indicated that labor force involvement is more likely to be integrated into traditional and digital financial systems among individuals with better educational attainment, elevated earnings, mobile phones, and internet access. The third aspect influencing fintech is the population; in this context, Chen *et al.* (2023) examined the effect of the gender ratio on fintech innovation. The findings indicate that gender disparity can enhance fintech innovation by elevating the level of social risk-taking. An unbalanced gender ratio also elevates fintech risk exposure. A recent study by Shah *et al.* (2025) corroborated that fintech exerts a substantial indirect influence on financial stability across nearly all quantile levels. Broad money growth consistently exhibits a substantial adverse effect on financial stability across the majority of quantiles. Population increase demonstrates a substantial beneficial effect on financial stability at lower quantiles; however, it becomes negative at higher quantiles. The interplay between fintech, the expansion of broad money, and population growth is consistently beneficial and significant across all quantiles.

Model Specification and Estimation Methods

We now turn our attention to the empirical strategy employed in this paper. Essentially, we begin our empirical estimation with a baseline regression as follows:

$$LnFintech\ (1)_{i,t} = \alpha + Ln\,\beta_1 GDPPC_{i,t} + Ln\beta_2 EXCHN_{i,t} + Ln\beta_3 INFL_{i,t} + Ln\beta_4 LFP_{i,t} + Ln\beta_5 POP_{i,t} + \varepsilon_{i,t} \ \ldots\ldots\ldots (1)$$

$$LnFintech\ (2)_{i,t} = \alpha + Ln\,\beta_1 GDPPC_{i,t} + Ln\beta_2 EXCHN_{i,t} + Ln\beta_3 INFL_{i,t} + Ln\beta_4 LFP_{i,t} + Ln\beta_5 POP_{i,t} + \varepsilon_{i,t} \ \ldots\ldots\ldots (2)$$

$$LnFintech\ (3)_{i,t} = \alpha + Ln\,\beta_1 GDPPC_{i,t} + Ln\beta_2 EXCHN_{i,t} + Ln\beta_3 INFL_{i,t} + Ln\beta_4 LFP_{i,t} + Ln\beta_5 POP_{i,t} + \varepsilon_{i,t} \ \ldots\ldots\ldots (3)$$

Where:
$i = 1, ..., n$
$t = 1, ..., T$
$\varepsilon_{i,t}$ = Identically independently distributed error term
ß = Matrix of regression coefficients.

The equation provided above indicates the relationship between the explanatory and dependent variables. Specifically, LnFintech $(1)_{i,t}$ represents the Fintech measurement as measured by the natural logarithm of Automated teller machines (ATMs) per 100,000 persons of a certain country i during a specific period or year t. LnFintech $(2)_{i,t}$ represents the Fintech measurement as calculated by the natural logarithm of Mobile cellular subscriptions per 100 persons of a certain country i during a specific period or year t. LnFintech $(3)_{i,t}$ represents the Fintech measurement as measured by the natural logarithm of the population using the Internet to manage finance from the total population rate of a certain country i during a specific period or year t. The error term, denoted as ε, represents the unobserved factors contributing to the dependent variable's variability. On the other hand, α refers to the intercept, which represents the value of the dependent variable when all independent variables are equal to zero. This study also employs several variables that hypothetically explain the fintech behavior in Emerging Market countries. These include numerous macroeconomic variables as follows: Ln β_1 $GDPPC_{i,t}$ is a proxy for economic growth using the natural logarithm of gross domestic product divided by the population of a certain country i during a specific period or year t) Sethi & Manocha 2023, Ben Romdhane *et al.,* 2024). $Ln\beta_2$ $EXCHN_{i,t}$ is a proxy for the natural logarithm of the exchange rate of a certain country i during a specific period or year t) Sethi & Manocha 2023, Ben Romdhane *et al.,* 2024). $Ln\beta_3$ $INFL_{i,t}$ is a proxy for the natural logarithm of Inflation as measured by the consumer price index of a certain country i during a specific period or year t (Asgari & Izawa 2023, Ben Romdhane *et al.,* 2024). $Ln\beta_4$ $LFP_{i,t}$ is a proxy for the natural logarithm of the labor force participation rate which is the proportion of the population ages 15 in a certain country i during a specific period or year t (Sethi & Manocha 2023(. $Ln\beta_5$ $POP_{i,t}$ is a proxy for the natural logarithm of the total population of a certain country i during a specific period or year t (Asgari & Izawa 2023). Logarithmic transformations are used in Eq (1,2, and 3) for a variety of reasons such as reduce the impact of outliers in the data, transform skewed data to approximate normality, linearize relationships between variables, and Stabilize variance in heteroscedastic data. The lack of a single or dominating 'optimal' methodology in the context of cross-country panel data is evidenced by a large number of specifications and models previously used. At this stage of the analysis, the Breush-Pagan Lagrange Multiplier (LM) test was performed to determine whether or not there are country-specific unobservable variables by employing the LM test. Furthermore, this paper tested whether there was a relationship between the individual effects and the explanatory variables or not by the Hausman test method, and here it is worth knowing that the Hausman test is not an alternative to the LM test. But it functions to check the decision by LM test. The fixed effect model is applied to observations specific to a firm or country (Bond 2002). Considering the structure of our data, the Fixed-effect model is most suitable, and this is further buttressed by the outcome of the Hausman test, which suggests rejecting the null hypothesis, as shown. Furthermore, a common assumption in panel data models is that the cross-sections exhibit an independent error term. However, according to Driscoll & Kray (1998), cross-sectional dependence might occur due to unobserved common shocks. In such circumstances, the estimated parameters may be inconsistent. Generally, cross-sectional dependence is common when the time span (T) is greater than the units (N). Our data, however, defies this condition, as the unit (N) is larger than the timespan (T). Nevertheless, we employ Pesaran's (2004) parametric testing procedure for cross-sectional dependence, and the results, confirm cross-sectional dependence. As a result of having cross-sectional dependence, Hoechle (2007) suggests using Driscoll and Kraay standard errors to solve the previous problem.

Data and Variable Definitions

The data used in this study were carefully cleaned from several sources (see Table 4). We developed balanced panel data comprising approximately 22 countries classified as emerging market countries, spanning from 2010 to 2021. The countries were selected based on data availability. Country-level annual data were collected from the World Development Indicators from the World Bank database. The sample period also includes the potential effect of the COVID-19 pandemic so that the COVID-19 event will contain the data or the estimation results. Table 4 summarizes all the variables, definitions, and data sources.

Fintech Indicators

Studies capturing Fintech have either employed Fintech technology-related variables as indicators or proxies of financial service providers (or Fintech startups) as reflectors of Fintech adoption/ growth/ penetration (Narayan, 2019; Othman *et al.,* 2021, Kireyeva *et al.,* 2021, Asgari & Izawa 2023, Ozili 2023, Sethi & Manocha 2023). Towards capturing the technology-enable financial services domain, three variables facilitating Fintech adoption were used to form an index via PCA, namely Automated teller machines (ATMs) (per 100,000 adults); Mobile cellular subscriptions per 100-person; and the rate of population that uses the Internet to manage finances from the total population. Few new studies employed these variables (Asgari & Izawa 2023, Ozili 2023, Sethi & Manocha 2023) to explain Fintech.

Empirical Results

Summary Statistics

Table 1

Presents the summary statistics for the dependent and independent variables, including the control variables. The mean value of all three Fintech measures ranges from 4.02 to 4.79, with a standard deviation indicating substantial variation across countries in financial development. This result may be due to heterogeneous financial and economic activities across countries and years.

Table 1: Summary Statistics This table presents descriptive statistics of all the variables used in the analysis. Our base sample consists of 22 countries

Variables	Mean	Std. Dev.	Min	Max
Dependent Variables:				
LnFintech (1)	4.03	0.68	1.98	5.67
LnFintech (2)	4.79	0.24	4.10	5.40
LnFintech (3)	4.02	0.49	2.01	4.61
Independent Variables:				
Ln GDP per capita	9.27	0.92	7.21	11.49
Ln Exchange rate	2.98	2.68	-1.29	9.59
Ln Inflation	1.11	0.82	-2.92	3.38
Ln Labor force participation rate	4.13	0.16	3.73	4.47
Ln Population	17.71	1.57	14.35	21.07

The Estimation Results

Table 2

This table reports the results of three models that interact with the effect of macroeconomic variables on Fintech. Estimation is performed using Fixed Effect (FE), and coefficients are computed using standard errors robust to heteroskedasticity. The estimations include year and country effects. Definitions of variables and data sources are provided in the Appendix. *, **, *** stand for levels of significance at 10 %, 5 % and 1 % respectively.

Table 2: Performed using Fixed Effect (FE)

	Fixed Effect (FE) Results		
Variables	**Model (1)**	**Model (2)**	**Model (3)**
Ln GDPPC	0.767***	0.336***	0.712***
Ln EXCHN	0.272***	0.074	0.637***
Ln INFL	-0.016	-0.001	-0.072**
Ln LFP	-1.570**	-0.498	-0.662
Ln POP	1.640***	0.655**	2.140***
Constant	-26.617***	-8.159	-39.863***
Year effect	Yes	Yes	Yes
Country effect	Yes	Yes	Yes
R^2	0.17	0.31	0.25

Lagrange multiplier (LM) test	973.07 (0.000)	951.12 (0.000)	1179.71 (0.000)
Hausman test	91.83 (0.000)	82.34 (0.000)	531.96 (0.000)

This paper implements the Breush-Pagan Lagrange Multiplier (LM) test to examine whether or not there are country-specific unobservable variables and Table 2 results demonstrate that individual effects, time effects, and individual and time effects aren't random. According to the LM test result, the estimation was made using the fixed effect model. Hausman test was conducted for model (1) and shows the following results: (Chi2) χ2=91.83, probability value =0.000, and for model (2) (Chi2) χ2=82.34, probability value =0.000 and also for model (3) (Chi2) χ2=53196, probability value =0.000. Since these values were smaller than 0.05, it was decided that there was an endogeneity problem in the model. In this case, it is necessary to analyze with the fixed effects model and this result supports the LM test results. The baseline results show that GDP per capita significantly improves FinTech at the 1% level by employing regression analysis to assess the impact of the logarithm of GDP per capita on FinTech. For the three measures of Fintech, the coefficient of GDP per capita is estimated to be 0.767***, 0.336***, and 0.712*** indicating a strong positive relationship using the Fixed Effect (FE) Model. This result remains positive and statistically significant in both estimation strategies in line with the literature presented by (Ji 2023, Liu & Chu 2024). Therefore, economic growth is considered a significant determinant of FinTech in Emerging markets.

As expected, the population is also a positive and significant predictor of FinTech as found by (Daud 2018, Jiang *et al.,* 2019) which means that the more the population growth increases the more the use of FinTech services and infrastructure, whereas inflation as presented by (Mumtaz & Smith 2020, Ben Romdhane more *et al.,* 2024) and labor force participation as explained by (Sethi & Manocha 2023) have an expected negative impact on all the FinTech measures. The study of the impact of Fintech on inflation shows that the active use of Fintech through the simple action of buying or consuming such as using the internet to pay, making digital payments, and debit cards has a negative and significant impact on inflation. Compatible with our findings, mobile money does not lead to high inflationary risks. Mawejje and Lakuma (2017) found that active use of Fintech has a reducing effect on inflation. Furthermore, the exchange rate positively impacts fintech in line with the results of (Afshan *et al.,* 2024). The R^2 (R-squared) results shown in Table 2 are 0.17, 0.31, and 0.25, respectively, in line with global proving that those results are the regression's relatively good explanatory power (R-squared).

Table 3

This table reports the results of three models that interact with the effect of macroeconomic variables on Fintech. Estimation is performed using Driscoll and Kraay Standard Errors. Definitions of variables and data sources are provided in the Appendix. *, **, *** stand for levels of significance at 10 %, 5 % and 1 % respectively.

Table 3: Fixed effect Estimation

Fixed effect Estimation with Driscoll and Kraay standard errors			
Variables	**Model (1)**	**Model (2)**	**Model (3)**
Ln GDPPC	0.767***	0.336***	0.712***
Ln EXCHN	0.272***	0.074***	0.637***
Ln INFL	-0.016**	-0.002	-0.072***
Ln LFP	-1.570**	-0.498***	-0.662***
Ln POP	1.640***	0.655***	2.140***
Constant	-26.617***	-8.159**	-39.863***
R^2	0.49	0.30	0.74
Number of Countries	22	22	22

Table 3 above shows the "Driscoll and Kraay Standard Error" with the fixed effect that shows the relationship among the understudy variables. As shown in Table 3, the effect of GDP per capita on all FinTech measures remains statistically significant under the full model estimation. In addition, the population growth and the exchange rate remain statistically significant and positive for all FinTech measures used in the table results. Moreover, labor force participation has a negative and statistically significant impact on all the FinTech measures. Lastly, inflation shows a significant and negative relationship with two of three measures of Fintech (Fintech1& Fintech3), however, the third measure remained negative but not significant. R-squared is 0.49, 0.30, and 0.75, respectively. The overall significance of all models, using all estimation techniques, is established using the F test and the Wald Chi-square test. Signs and statistical significance remain unchanged in all four techniques used, showing the robustness of the results.

Robustness Check

Did the choice of model and indexing impact the validity of the results? We performed robustness checks to assess the validity of the results, using three common methods in empirical research: (1) employing a similar but different estimation strategy, (2) using similar variables that measure the same characteristics (also known as instrumental variables), and (3) alternative indexing of the variables. In our study, we obtained alternative variables (instruments) for FinTech and then re-estimated our model using the calculated alternative indices. Tables 2 & 3 show the estimated results of the new indices, indicating that the main findings remain valid. In summary, the results remain consistent.

CONCLUSION

In this study, based on the theoretical models, we set up econometric models to investigate the impact of macroeconomic variables on FinTech for emerging market countries (22 countries) from 2010 to 2021. We estimate the model by Fixed Effect (FE) and Fixed Effect Estimation with Driscoll and Kraay's standard errors regression method. At the overall level as well as the structural level, we test the effects of macroeconomic variables on FinTech. Our main findings include the following: The study's findings suggest that technological innovations play a positive role in boosting a nation's economy. Our empirical study, the first of its kind, emphasizes the importance of distinguishing between active and passive use of macroeconomic variables to predict their impact on Fintech. Governments should promote phone and internet usage, encourage active participation in digital transactions, and support transactions that align with the economic cycle. This research is valuable for academics, researchers, and policymakers, particularly in implementing Fintech incentives based on economic growth, population growth, and exchange rates, because of the demonstration of the positive and significant relationship with the Fintech measures. To enhance economic development, governments should invest in information and communication technologies, especially for businesses. Decision-makers in emerging markets should focus on strengthening research and development, technological capabilities, and digital infrastructure for economic advancement. Regulators in these countries must foster an innovation-friendly environment, prioritize consumer protection, and ensure financial stability through Fintech initiatives. In short, the growth of Fintech in the region prompts consideration of implementing stringent laws and regulations for new Fintech services, particularly in security and privacy practices. This would necessitate closer collaboration with similar-minded governments in emerging markets to establish standards and enhance consumer awareness of surveillance risks. If consumers comprehend these risks, they are more likely to favor Fintech services. Assuming successful government policy interventions safeguard this sector, the number of investors in this field will increase, potentially making it an economic development catalyst for emerging markets. Additionally, future research could explore the correlation between digital finance (Fintech) and foreign direct investment to determine if Fintech aids in attracting investors without the digital infrastructure to benefit from this financial opportunity. Moreover, future research should consider alternative FinTech measures for longer periods.

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Appendixes

Table 4: Definition of variables

Variable	Measurement	Source of data
Fintech (1)	A measure of FinTech. It refers to the automated teller machines (ATMs) per 100,000 persons.	World Development Indicators
Fintech (2)	A measure of FinTech. It refers to the mobile cellular subscriptions per 100-person.	World Development Indicators
Fintech (3)	A measure of FinTech. It refers to the population that uses the Internet to manage finances from the total population.	World Development Indicators
GDP per capita	Gross domestic product divided by total population is used as a measure of economic growth.	World Development Indicators
Exchange Rate	Annual average of exchange rates based on monthly averages (local currency units relative to the U.S. dollar).	World Development Indicators
Inflation Rate	Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals, such as yearly.	World Development Indicators

Labor Force Participation	The proportion of the population ages 15 and older that is economically active.	World Development Indicators
The population growth	The natural logarithm of the total population.	World Development Indicators

Table 5: Tests for cross-sectional dependence

Pesaran's test of cross-sectional independence	**Coefficient**	**P-value**
Model (1)	11.222	0.000
Model (2)	4.556	0.000
Model (3)	0.247	0.000

Table 5: Test for first-order serial correlation

Wooldridge test for autocorrelation F (1,21)	**Coefficient**	**P-value**
Model (1)	113.73	0.000
Model (2)	44.366	0.000
Model (3)	96.921	0.000

Table 6: Wald test for heteroscedasticity

Wald test (X^2) (22)	**Coefficient**	**P-value**
Model (1)	11402.14	0.000
Model (2)	5209.58	0.000
Model (3)	5817.24	0.000

Table 7: List of Emerging Market countries in the sample

No.	**Economy**	**Region**	**Income group**
1	Brazil	Latin America & Caribbean	Upper middle income
2	Chile	Latin America & Caribbean	High income
3	China	East Asia & Pacific	Upper middle income
4	Colombia	Latin America & Caribbean	Upper middle income
5	Egypt	Middle East & North Africa	Lower middle income
6	Greece	Europe & Central Asia	High income
7	Hungary	Europe & Central Asia	High income
8	India	South Asia	Lower middle income
9	Indonesia	East Asia & Pacific	Upper middle income
10	Korea	East Asia & Pacific	High income
11	Kuwait	Middle East & North Africa	High income
12	Malaysia	East Asia & Pacific	Upper middle income
13	Mexico	Latin America & Caribbean	Upper middle income
14	Peru	Latin America & Caribbean	Upper middle income
15	Philippines	East Asia & Pacific	Lower middle income
16	Poland	Europe & Central Asia	High income
17	Qatar	Middle East & North Africa	High income
18	Saudi Arabia	Middle East & North Africa	High income
19	South Africa	Sub-Saharan Africa	Upper middle income
20	Thailand	East Asia & Pacific	Upper middle income
21	Türkiye	Europe & Central Asia	Upper middle income
22	United Arab Emirates	Middle East & North Africa	High income