Does Anti-Money Laundering and Countering the Financing of Terrorism Drive the Economic Growth of Emerging Economies?

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Abstract

This paper examines the impact of the Anti-Money Laundering and Countering the Financing of Terrorism (AML/CFT) regime on the economic performance of emerging economies. This study uses a panel dataset of 44 emerging economies and constitutes of four economic variables, namely, the GDP growth rate, Basel AML Index, annual growth rate of exports of goods and services, and annual growth rate of gross capital formation, for the 10-year period from 2012 to 2021. The Panel Dynamic Ordinary Least Squares technique is used to estimate the impact of selected economic variables on the economic performance of emerging economies. The findings reveal that the Basel AML Index has a negative yet insignificant relationship with the GDP growth, whereas the annual growth rates of exports of goods and services and gross capital formation have a positive and significant association with the GDP growth rate of emerging economies. The lack of indicators to measure and reflect the status of AML/CFT regimes of countries, and the limited sample, as the BASEL AML Index being relatively new, are the major limitations faced during the study. In the meantime, money laundering and terrorist financing may take a relatively long time to create real repercussions in the economy. Therefore, a sample with a longer timeframe, and additional variables can be considered in future studies about this area.

Key Words*: Money laundering, terrorist financing, panel data, economic performance, emerging economies*

JEL Classification: *C2, C10, C43, C81, C82, C83, D12, E31, R21, R30, R31*

[1] The views presented in this paper are those of the author and do not necessarily indicate the views of the Central Bank of Sri Lanka

1. Introduction

Drivers of growth have attracted much research interest but with less attention to money laundering and terrorist financing, which is widely regarded as a stumbling block to growth prospects. While economies have been striving to upgrade to robust financial systems, money laundering and terrorist financing have increasingly become a significant risk due to greater economic openness to international capital markets and resultant loss of integrity and soundness of these financial systems. Evidence suggests that money laundering and terrorist financing give rise to severe consequences to countries both in the short run and long run by way of a tarnished reputation, increased corruption, deteriorated economic performance, loss of government revenue, undermined legitimate economic activities, depleted integrity of financial markets, unbearable income inequality, and economic instability (McDowell & Novis, 2001).

Several global institutions have attempted to quantify the amount of money laundered in the world economy to assess its gravity and the extent of its negativity on the performance of economies. The United Nations Office on Drugs and Crime (2011) estimates the amount of money laundered globally in a year to be circa 2 per cent to 5 per cent of global GDP which is equivalent to around US dollars 800 billion to US dollars 2 trillion. The Committee of Experts on the Evaluation of Anti-Money Laundering Measures and the Financing of Terrorism (2020) also estimates that the money laundered worldwide annually ranges between US dollars 500 billion to US dollars one trillion, on average. Further, statistics of the amount of money laundered globally varies among different sources as well (Raol, 2022). An overview of the global context shows surprising statistics, such as around 90 per cent of the money laundering activities are undetected per year, 48 per cent of banks use outdated technology that prevent meeting of AML/CFT compliance, fiat currency instead of cryptocurrencies are used 400 times more in money laundering and only 0.1 per cent of the total laundered money is recovered by AML investigations (Marley, 2023). The year 2019 marked several milestones in AML/CFT areas where around 60.5 percent of fines imposed on banks, which amounted to around US dollars 10 billion, were due to non-compliance with anti-money laundering laws. Conviction statistics showed that 91.1 percent of those accused of money laundering were subject to imprisonment. Further, evidence for 2021 indicates that the number of institutions fined has increased while the fined amounts have relatively reduced when compared to 2020 (AML Fines 2021).

Adaptation of the latest technology and streamlined knowledge about AML/CFT laws have been identified as vital for banks to mitigate the exposure to risks of money laundering and terrorist financing schemes and to avoid the resulting penalties and fines (AML Fines 2021). Scrutiny of statistics and extensive studies about money laundering and terrorist financing have revealed several trends where the use of cryptocurrencies such as bitcoins and the application of identity theft in these schemes are presently on the rise (Cipher Trace , 2018).

There is no consensus on a positive or negative association between money laundering, terrorist financing, and economic growth. The adverse effects of money laundering and terrorist financing as a global risk seem to be higher in emerging economies over developed economies due to the fragility of financial systems, bureaucracy, relatively low resilience, and vulnerabilities towards market shocks (Effects of Money Laundering on Development, 2022). The absence of proper AML/CFT regimes will force emerging economies to sacrifice rapid economic growth trajectories and licit investment opportunities. Yet, money laundering and terrorist financing induce people towards easy money-making and lucrative profits (Lilley, 2000). Surprisingly, money laundering may yield favourable results in economic activities especially in the short run (Stancu and Rece, 2009),

in the event the laundered money is invested in consumption and investment of countries. Nevertheless, the repercussions at each stage of money laundering and terrorist financing may lead to economic and social setbacks demanding a dire need for strict AML/CFT rules and regulations in place.

Against this backdrop, this research observes how AML/CFT regimes have contributed to the growth trajectories of emerging economies using a panel data analysis. This research appears to be the first attempt to study the impact of strengthening the AML/CFT regime on economic performance of emerging economies[2]. The structure of the paper consists of five sections, including Section 1, the introduction. Section 2 reviews the literature on money laundering, terrorist financing, and its impact on economies. Section 3 outlines the theoretical framework for conducting the research, and Section 4 presents the empirical findings. Finally, Section 5 concludes the study with a policy decision, a few limitations, and suggestions for further research.

2. Literature Review

2.1 Money laundering and terrorist financing in the modern world

Numerous global institutions interpret money laundering and terrorist financing in diverse ways. The Financial Action Task Force (2022) defines money laundering as the conversion of criminal proceeds to conceal the illegal origin which could occur in any part of the world, mainly in countries with weak AML regimes. The European Commission (2022) identifies money laundering as a complex process designed to cleanse unlawful activities undertaken to generate funds from illegal sources. At the same time, Interpol (2022) defines money laundering as disguising the origins of illegally earned proceeds to make them appear to have originated from legitimate sources. Regarding terrorist financing, the United Nations Office on Drugs and Crime (2022) identifies terrorist financing as any act encompassing various ways and means of securing funds for terrorist activities. Simultaneously, the glossary given by the Financial Action Task Force (2022) explains terrorist financing as the funding of terrorists, their acts, and organisations. Additionally, the International Monetary Fund (2000) identifies terrorist financing as requesting, assembling, or supplying funds to assist terrorist acts or entities.

Money laundering is a process with three stages, namely, placement, layering, and integration. During placement, funds that are generated by exploiting illegal means, such as drug trafficking, arms trafficking, human smuggling, corruption, and bribery, are placed in the financial system. Throughout the placement stage, money launderers deceive authorities to bypass the controls placed in the financial system in different ways such as depositing numerous small value deposits and funds below the mandatory reporting thresholds to inject illicit funds into the financial system. Such deceptions could result in manipulations of formal banking channels and pave the way for other illegal activities (King, 2018). During the layering stage, money launderers reroute the illegally generated funds injected into the financial system at the placement stage by adding multiple layers between the source of funds and the funds themselves placed in the financial system by moving it among numerous companies, countries, banks, and bank accounts employing a complex series of transactions. Manipulating the banking sector to divert funds and conceal their illegal origin implies that the country's financial system is weak and easily facilitates money laundering, which will lead to impeding investor confidence and

[2] To the best of the author's knowledge

deteriorating economic performance (Dow Jones, 2022). Finally, during the integration stage, the illicit funds injected (placement) and moved around (layering) are absorbed into the financial system. Absorption of funds happens through investment (purchase of assets such as real estate, securities, jewellery, gem, automobiles, and incorporating ventures), savings (opening fixed deposits, bills, and bonds), and expenditure (purchase of consumables, travels, and tours). This is the stage where illicit funds blend with the legal tender which makes it onerous to distinguish between the legal or illegal status of the sources of funds (St Paul's Chambers, 2021).

In the same vein, the process of terrorist financing has three steps, namely collection, transfer, and utilisation of funds. At the *collection* stage, where terrorist financiers gather funds from both legal and illegal sources to finance terrorism, adverse effects are created on the economy in two main ways. On one hand, the exploitation of legal sources of funds, such as profits from businesses and charitable organisations and personal donations, will diminish the faith of people in licit economic activities; on the other hand, funds collected through illegal sources will encourage many illicit acts, money laundering, and informal money/value transfer systems, such as Hawala/Undiyal (Bailiwick of Guernsey, 2022). The *transfer* stage of terrorist financing is about ensuring the undetected allocation of the funds gathered at the collection stage. Freeman and Ruehsen (2013) identify different techniques such as informal money/value transfer systems, banking channels, value cards, false trade invoicing, and cash couriers to transfer funds to terrorism. Finally, at the u*tilisation* stage, the funds collected (collection) and transferred (transfer) will be used in planning terrorist activities, procuring raw materials and expertise, producing weapons and equipment, training people into terrorists, and sustaining all activities that support terrorism (King, 2018).

2.2 Contemporary studies on whether money laundering and terrorist financing drive the growth of economies

A growing body of literature emerges with mixed evidence to exhibit the nexus of money laundering/ terrorist financing and economic performance. Several research studies support the norm that there is a negative relationship between money laundering and economic growth. Sota and Kolaneci (2013) posit that a negative correlation exists between the growth rate and money laundering in Albania based on a study covering five years, from 2007 to 2011. Apart from the growth rate, this study focuses on other economic variables, such as government expenditure, imports, exports, net exports, and foreign direct investments. The negative correlation is explained by the fact that anti-money laundering policies discourage criminal activities. The findings of this study are in line with the inverse relationship between money laundering and economic growth accepted worldwide. However, this study uses the number of cases of money laundering instead of monetary values due to the absence of the exact amount of money laundering in the public domain moderating the money laundering variable. Ndubuisi et al. (2016) observe that the impact of money laundering on the economy of Nigeria is negative. In the aforementioned study, the money laundering proxy is fraud, and its impact on three economic variables of the Nigerian economy is investigated. The money laundering variable is constrained in this study since only fraud is used as the proxy of money laundering, whereas several predicate offences lead to money laundering. A negative and significant correlation exists between fraud and the three economic variables, gross domestic product, federal government revenue, and gross fixed capital formation. The study highlights that the review of anti-money laundering laws, reassessment of statutory functions of institutions overseeing economic crimes, and collaboration with foreign nations to build up the country's international reserves would pave the way for further improvement in the AML/CFT regime of the country.

Nevertheless, a few research studies show results that contrast with the norm. Instead, they depict a positive relationship between money laundering and economic growth. Stancu and Rece (2009) observe a positive correlation between growth and money laundering in the USA, Russia, Romania, and eleven other European countries. The study applies a linear regression model and ascertains that increased volumes of laundered money lend funds for investment and consumption, boosting economic growth in the short run. In this exercise, the laundered money, one of the key explanatory variables, has been estimated by considering eleven most profitable money laundering predicate offences and multiplying the average profit of each offence with the number of crimes recorded for each country and subsequently adjusted based on GDP per capita. However, the quality of the study can be extended by incorporating more predicate offences to derive the laundered money. The estimated outcome of the significant positive correlation in the study is deemed surprising given many other well-known factors influencing economic growth. Researchers state that money laundering indirectly benefits the economy in the short run if the launderers invest the laundered funds in productive activities that could lead to betterment of the country.

Jayasekara (2020) studies the impact of global AML/CFT standards on combating money laundering/ terrorist financing by developing an AML/CFT Effectiveness Index. Jayasekara (2020) observes that both the presence and execution of a sound AML/CFT regime are essential to combating money laundering/ terrorist financing. The AML/CFT Effectiveness Index is limited to few proxies such as corruption, bribes, and crimes where more money laundering predicate offences can be accommodated for comprehensive results. Issah et al. (2022) conducted a panel study across 51 African countries from 2012 to 2019 to assess the impact of anti-money laundering regulations on the banking sector stability in Africa. This study uses the z-score, a measure of the solvency risk of banks, which compares capitalisation and returns with risk from the volatility of returns, as the banking sector stability proxy. The Basel AML index has been used as the anti-money laundering regulations proxy. At a 5 per cent significance level, anti-money laundering regulations show the existence of a significant positive relationship with banking sector stability irrespective of the degree of effectiveness of anti-money laundering regulations. The results of this study illustrate the importance of maintaining a fair degree of anti-money laundering regulations for a stable banking sector. The study could be further expanded to assess the relationship between AML/CFT and the economic sector.

At the same time, there are research studies with mixed relationships depending on time frames and variables used. Saddiq and Abu Bakar (2019) investigate the impact of economic and financial crimes on the economies of emerging and developing countries by following a combination of systematic review and meta-analysis. This study uses three eligibility criteria based on the focus of the research in selecting studies, namely, the impact of economic and financial crimes in emerging and developing countries, non-violent economic and financial crimes such as corruption and money laundering, and policy measures that should be put in place in developing and emerging countries aimed at tackling such issues. The population of this study comprises 103 studies across the years 2007 to 2017 and after filtering it pursuant to the predetermined eligibility criteria, six studies were selected as the final input of the analysis. All six studies show that economic and financial crimes impose negative effects on emerging and developing economies. But the results of the meta-analysis of the sample depict a moderately positive impact of economic and financial crimes in emerging and developing economies. This could be due to the sudden boost such crimes could bring into the economy in terms of short-

term investments, surges in consumption, and peaks in savings. However, the researchers emphasise the need to cooperate with all stakeholders to minimise economic and financial crimes and conduct more studies to assess the negative impact between economic and financial crimes and the economies of emerging and developing countries.

Moses and Henry (2020) assess the short run and long run relationship between money laundering and economic growth in Trinidad and Tobago for the period from 1990 to 2017. This study uses fraud and narcotics offences as money laundering proxies and a cointegration analysis and error correction model as the research methodology. The estimations yield contrasting results among the money laundering proxies and the time frames. In the short run, at a 5 per cent significance level, fraud offences show a significant, negative relationship with economic growth, whereas narcotics offences do not depict any relationship. The resulting inverse association between the money laundering proxy and economic growth stems from the nurturing of crime and corruption in economies leading to inefficiencies and hindered growth. In the long run, fraud offences show a significant, positive relationship with economic growth, and narcotics offences show a significant, negative relationship with economic growth. The study highlights that irrespective of these findings, it is crucial to take necessary steps to minimise the repercussions of money laundering.

Although the literature on money laundering and economic growth provides ambiguous results, these findings appear to be country specific or methodology specific.

2.3 Basel AML Index

The key variable used in this study is the Basel AML Index to reflect the level of AML/CFT efforts of economies. It is a global index issued by the Basel Institute on Governance in Switzerland since 2012 ranking money laundering and terrorist financing risks of countries. It is not a quantitative measure of the level of money laundering and terrorist financing. Instead, it ranks countries based on their vulnerability and ability to combat such risks. The Basel AML Index is based on five aspects of countries, namely, the quality of the AML/CFT framework, bribery and corruption, financial transparency and standards, public transparency and accountability, and legal and political risk. The Basel AML Index value ranges from 0 to 10, where 0 indicates the lowest risk level, and 10 indicates the highest risk level

3. Theoretical framework and data

Theories suggest money laundering and terrorist financing broadly affect both economic and financial aspects of a country. AML/CFT and macroeconomic policy objectives go hand in hand without conflicts, and when combined, lead to favourable effects on the economy (Quirk, 1996). Research studies use the Basel AML Index as an autonomous measure of the AML/CFT regime of a country. Accordingly, Islam et al. (2017) uses the Basel AML Index to measure the anti-money laundering practices among South-Asian countries, Naheem (2020) uses the Basel AML Index as an independent indicator of a country's AML/CFT infrastructure, and Issah et al. (2022) uses the Basel AML index as the anti-money laundering regulations proxy.

In addition to AML/CFT, other economic variables such as exports also drive the growth of emerging economies (Pekarcikova et al., 2022) where a rise in exports stimulates an increase in aggregate economic

growth (Emery, 1967). Further, Carrington and Edwards (1979) identify capital formation as an assistant to economic development, and Solow (1962) claims that a high rate of capital formation is required if the growth of output is to accelerate. Accordingly, the following basic empirical panel growth model will be used for this study including four economic variables affecting economic growth as given in Table A1 in Appendices:

$$y_t = X_t'\beta + D_{1t}'\gamma_1 + \sum_{j=q}^{s} \Delta X_{t+j}'\delta + v_{1t}$$

where y_t is the dependent variable, X_t is a vector of stochastic regressors, D_{1t} is a vector of deterministic regressors, β, γ_1 and δ are vectors of coefficients and v_{1t} is the error term. The dependent variable of this study is the real GDP growth rate, a widely used measure of the economic performance of countries. The independent/stochastic variables of this study include the Basel AML Index, annual growth rate of exports of goods and services, and the annual growth rate of gross capital formation, as explained in Table A1 in Appendices. Apart from the Basel AML Index, all independent variables are commonly known to be direct growth drivers. The Basel AML Index, the key interest variable of this study, represents the strength of the AML/CFT regimes of emerging economies. Further, a deterministic regressor is used to identify the impact the COVID-19 pandemic exerted on the economic performance of emerging economies in 2021.

Panel Dynamic Ordinary Least Squares is used to estimate the coefficients of a cointegrating relationship, and it is considered an improved version of the Pooled Ordinary Least Squares estimation due to several reasons. The Panel Dynamic Ordinary Least Squares method allows the use of variables with different unit root properties and is ideal for small sample sizes (Mahraddika, 2020). Further, it considers any dynamic nature of the selected study by accounting for the leads and lags of the presumed relationship irrespective of the presence or absence of cointegration between the explanatory variables and the error term. The Panel Dynamic Ordinary Least Squares also involve a relatively simple computation, reduced bias, and greater precision.

As per the Fiscal Monitor (2023), emerging economies are defined as any country other than countries classified as advanced economies or low income developing countries. Emerging economies generally inherit few features of developed economies and are in the process of becoming developed. As given in Table A2 in Appendices, the 44 emerging economies in this study are derived based on the Fiscal Monitor (2023) and the availability of data on the selected drivers of economic growth in the World Bank's (WDI) database.

This panel study spans ten years from 2012 to 2021 since the key interest variable, the Basel AML Index, is available from 2012 onwards. Further, this empirical study uses the EViews software to statistically assess the relationship between the selected independent and dependent variables. Accordingly, while the null hypothesis (H_0) claims that there is no relationship between respective population parameters, the alternative hypothesis (H_1) claims that there is a relationship between respective population parameters. As such, the following hypotheses are developed to provide a clear account of the main research problem of this study:

H_0 – The AML/CFT regime has no relationship with economic growth.
H_1 – The AML/CFT regime has a relationship with economic growth.

The number of lags and leads in the Panel Dynamic Ordinary Least Square model was selected based on the Akaike Information Criteria. Given the limited time covered in the sample, only a few explanatory variables could be used in the model

4. Empirical results

4.1 Data validation

Several tests were carried out to identify the properties of the selected variables. Table A3 in Appendices includes the unit root test results on stationarity of the variables. Different tests provide ambiguous results on the stationarity property of the variables, when only individual intercept, both individual intercept and trend, and without individual intercept or trend are considered. Therefore, all variables could be either I (0) or I (1) variables. However, variables with different unit root properties can be used in the Panel Dynamic Ordinary Least Squares method (Mahraddika, 2020).

Table A4 shows the descriptive statistics of the four variables used in this study. As per the correlation matrix given in Table A6, there is no correlation coefficient exceeding 0.8 showing no signs of multicollinearity. This study uses the Kao Residual Cointegration Test to assess the long term relationship among the variables (cointegration). The null hypothesis of this test is that there is no cointegration. As per the probability values given in Table A7 in the Appendices, the null hypothesis can be rejected indicating that there is a long run association among the variables.

4.2 Results of the Panel Dynamic Ordinary Least Squares Method

As per the results given in Table 1, the Basel AML Index has a negative effect on the GDP growth rate where a one-point increase in the Basel AML Index will increase the GDP growth rate by 0.4873 percentage points. However, the relationship is not significant reflecting the minor role of AML/CFT as an economic growth driver in the long run in emerging economies during the sample period. The insignificant impact of AML/CFT on economic growth could also be due to a possible non-linear relationship between the two variables or due to the short time span covered in the sample. Since the Basel AML index is only available for a ten-year period, the sample used for this study has been limited, preventing further exploration of the non-linear relationship between the Basel AML index and economic growth. A non-linear relationship is particularly possible, since the improvements in the AML/CFT regime could positively contribute to economic growth only up to a threshold level, and any further strengthening of AML/CFT efforts may not have any impact or may even have a negative effect on growth as excessive controls could be more costly, thereby repressing economic activities.

However, both annual growth rates of exports of goods and services and gross capital formation have a positive long run relationship with the GDP growth rate at a 1 per cent significance level. A percentage point increase growth in exports of goods and services and growth in gross capital formation will increase the GDP growth rate by 0.0992 and 0.1154 percentage points, respectively. These results agree with past literature where exports (Loungani et al., 2017) and capital investments (Appiah et al., 2019) act as determining factors of economic growth by favourably affecting the performance of economies.

The R-squared of the Panel Dynamic Ordinary Least Squares model stands at 91.37 per cent indicating that a significant extent of the variation in the GDP growth rate can be explained by the independent variables. Correlogram of residuals show that there is no autocorrelation up to four lags.

Table 1: Panel Dynamic Ordinary Least Squares Method

	Coefficient	Std. Error	t-Statistic	Prob.
Basel AML Index	-0.487301	0.363024	-1.342338	0.1812
Exports of goods and services	0.099220	0.022270	4.455257	0.0000***
Gross capital formation	0.115353	0.019309	5.974047	0.0000***

Note: *** represent the level of significance at 1 per cent.
Source: Author's calculations using EViews

5. Conclusion

The main purpose of this research is to assess the impact of strengthening the AML/CFT regime on the economic performance of emerging economies which appears to be the first empirical study concerning emerging economies. The Basel AML Index is used as the indicator of the risks related to money laundering and terrorism financing activities. In addition to the above, this research also focuses on the impact generated by several other economic variables, namely, the annual growth rate of exports of goods and services and annual growth rate of gross capital formation on the economic performance of emerging economies. Findings of this study show that the AML/CFT regime has insignificant impact on real GDP growth of emerging economies within the sample period, whereas export growth and gross capital formation growth have a notable positive impact on economic growth.

Indicators to measure and reflect the degree of money laundering and terrorist financing risks and the status of AML/CFT regimes of countries are scarce and the Basel AML Index is a relatively new indicator. Such scarcity of indicators is a major limitation faced in this research since the impact of strengthening the AML/CFT regime on the economic performance of emerging economies could be studied only for a ten-year period. At the same time, the limited sample hindered the use of additional explanatory variables and further analysis on non-linear relationships between AML/CFT regime and economic growth. Further, money laundering and terrorist financing are criminal processes that penetrate different layers of the society in the local as well as international contexts. The flow of funds to different parts of the world, involvement of multiple parties and transfer mechanisms, diverse investments, and penetration of different classes of society including both white collars and blue collars in money laundering and terrorist financing, may take a relatively long time to create real repercussions. These characteristics of money laundering and terrorist financing require investigations about it to dig deep to the roots (INTERPOL, 2022) and identify the predicate offence generating the proceeds, and follow the money to break networks (Basel Institute on Governance, 2022). Therefore, a longer timeframe can be considered in future studies about this area to assess whether money laundering and terrorist financing lead to a negative/positive impact on the economic performance of emerging economies with concrete evidence.

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Appendices

Table A1: Function variables

No.	Variable	Description	Source
1	GDP growth rate	Annual percentage growth rate of GDP at market prices based on constant local currency	WDI (World Bank)
2	Basel AML Index	An independent annual ranking that assesses the risk of money laundering /terrorist financing risk around the world	Basel AML Index published by the Basel Institute on Governance
3	Exports of goods and services	Annual percentage growth rate of exports of goods and services	WDI (World Bank)
4	Gross capital formation	Annual percentage growth rate of gross capital formation	

Table A2: List of emerging economies

No.	Country	No.	Country
1	Albania	23	Kazakhstan
2	Algeria	24	Lebanon
3	Angola	25	Malaysia
4	Armenia	26	Mauritius
5	Bolivia	27	Mexico
6	Bosnia and Herzegovina	28	Mongolia
7	Botswana	29	Montenegro
8	Brazil	30	Morocco
9	Bulgaria	31	Pakistan
10	Chile	32	Paraguay
11	Colombia	33	Peru
12	Costa Rica	34	Philippines
13	Dominican Republic	35	Poland
14	Ecuador	36	Romania
15	Egypt	37	Russia
16	El Salvador	38	Saudi Arabia
17	Georgia	39	Serbia
18	Guatemala	40	South Africa
19	Hungary	41	Sri Lanka
20	India	42	Tunisia
21	Indonesia	43	Ukraine
22	Jamaica	44	Vietnam

Source: Fiscal Monitor

Table A3: Unit root test results

Variables at level	Levin, Lin & Chu t			Im. Pesaran And Shin-W-stat		ADF – Fisher Chi-square			PP – Fisher Chi-square		
	Individual intercept	Individual intercept and trend	None	Individual intercept	Individual intercept and trend	Individual intercept	Individual intercept and trend	None	Individual intercept	Individual intercept and trend	None
GDP growth rate	0.3738	0.5344	0.0000***	0.4487	0.7861	0.3944	0.6816	0.0000***	0.0000***	0.0000***	0.0000***
Basel AML Index	0.0143	0.0000***	0.0002***	0.5078	0.5881	0.1439	0.4505	0.5558	0.0006***	0.0068	0.0534
Exports of goods and services	0.3793	0.5007	0.0000***	0.0613	0.5920	0.0602	0.4133	0.0000***	0.0000***	0.0000***	0.0000***
Gross capital formation	0.0000***	0.0000***	0.0000***	0.0000***	0.0481	0.0000***	0.0003***	0.0000***	0.0000***	0.0000***	0.0000***

Note: ***, **, and * represent the level of significance of 1%, 5%, and 10% respectively. Null hypothesis is that the panel data set contains unit roots (non-stationary).
Source: Author's calculations using EViews

Table A4: Descriptive statistics

	GDP growth rate	Basel AML Index	Exports of goods and services	Gross capital formation
Mean	2.568055	5.564003	3.045249	2.477297
Median	3.202125	5.540000	3.387565	2.905988
Maximum	19.04728	8.600000	86.04330	81.30731
Minimum	-21.39990	3.120000	-53.74363	-56.08066
Std. Dev.	4.329713	0.906460	12.05113	12.94399
Skewness	-1.168915	0.092665	1.001440	0.559703
Kurtosis	6.913187	2.658934	14.86138	10.68978
Jarque-Bera	380.9388	2.762340	2652.902	1107.073
Probability	0.000000	0.251284	0.000000	0.000000
Sum	1129.944	2448.161	1339.910	1090.011
Sum Sq. Dev.	8229.676	360.7132	63755.89	73553.13
Observations	440	440	440	440

Source: Author's calculations using EViews

Table A6: Correlation

	GDP growth rate	Basel AML Index	Exports of goods and services	Gross capital formation
GDP growth rate	1			
Basel AML Index	0.092384	1		
Exports of goods and services	0.607096	-0.008036	1	
Gross capital formation	0.517220	0.018406	0.223336	1

Source: Author's calculations using EViews

Table A7: Panel Cointegration Model
Kao Residual Cointegration Test

	t-Statistic	Prob.
ADF	-2.623672	0.0043***

Note: *** represents the level of significance of 1%
Source: Author's calculations using EViews