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Sukuk Market Development and Macro-Economic Factors: Empirical Evidence from Pakistan

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Abstract:

This study is an attempt to find out the association between macro-economic variable and Sukuk market development in Pakistan. Macro-economic variables are considered as the mainstay for the development of Sukuk markets. Therefore, the scope of this study is to find out the association between macro-economic variable viz. gross domestic product, inflation, exchange rate, trade openness and Sukuk market development in Pakistan. This research work is carried out by employing, explanatory research design and utilizing the secondary data to assess the relationship between Sukuk market development and macro-economic variables in Pakistan. Consequently, VECM technique was used to assess this relationship for the period of 15 years from 2008-2022. The findings of this study demonstrated that only two variables i.e. GDP and exchange rate have shown significant relationship with Sukuk market development in the short-run. However, in the long-run all variables i.e. GDP, exchange rate and trade openness, except inflation have shown significant relationship with Sukuk market development in Pakistan. The results of this work may instigate the policy makers to step-up with such innovative strategies, which can provide conducive growth for macro-economic variables, and, consequently, lead to flourish the development of Sukuk market in the country.

Keywords: Pakistan, GDP**,** VECM, Sukuk market, trade, exchange rate, macro-economic variables

INTRODUCTION

Sukuk is often referred as Islamic bonds, are financial instruments used in Islamic finance that comply with the principles of Islamic law. Unlike with conventional bonds, which involve interest payments, Sukuk are structured to be in compliance with Islamic principles that forbid interest payments (riba). Therefore, in a Sukuk issuance, an entity (issuer) sells certificates to investors, representing proportionate ownership in an underlying tangible asset or project. Accordingly, Investors who purchases Sukuk certificates are entitled to receive a share of the returns generated by the underlining asset or the project.

Thus, Sukuk are normally defined as certificates of ownership (or shares) of a business, real asset or service that confines to Islamic commercial law and are a convenient sharia-compliant way for

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generating liquidity for entities, project financing and government funding needs. They are highly suited for and widely used by governments to generate local and international funding under a sharia-compliant mechanism while avoiding interest. However, are redeemable at maturity and can be traded in the secondary market in the case of tradable Sukuk (Ariyana, et al. 2020).

It is apparent that there is a scarcity of literature associated with the Sukuk markets at country levels, but, in particular, there is also paucity with regard to Pakistani Sukuk market. Likewise, other Asian countries, Pakistan heavily rely on the banking industry for their corporate and sovereign financial needs, due to their unavailability or embryonic nature of Sukuk market (Aman et al. 2021).

Usually, banks provide short term financing facilities for long term investment needs of a corporate sector. This maturity mismatch leads to a state of default and unavailability of more credit for existing debt services as well as further investments. As a result, the currency depreciate which ultimately aggravates the debt burden on corporate as well as banking sectors (Bhattacharyay, 2013).

Therefore, this trend of dependence on commercial banks by the Asian countries continues, which makes them more vulnerable toward financial crisis. Furthermore, this instability of the banking industry negatively affects investment activities and ultimately shrinks the aggregate demand (Ali & Cantner, 2020). Similarly, Pakistan is among the nations whose dependence on debt has surged in recent times, which has compelled the government to procure debt from various countries and IMF (Bhowmick & Ghosh, 2023). Hence, this kind of dependence highlights the importance for the development of a large-scale and diversified Sukuk market in the country. Basically, the expansion of capital market will provide alternate funding opportunities, with a wider investor base to make the country less dependent on the banking system. Consequently, this augmentation of Capital market will provide long term financing opportunities with the facility of both local and foreign currency, to avoid the issues of maturity mismatches (Eichengreen & Luengnaruemitchai, 2004).

Therefore, keeping in view the importance of capital market development to fulfill the long term financing needs of both government and corporate sectors. The relevant literature reveals that Sukuk market occupies a fundamental fragment of capital market. It was primarily, legitimized in 1980s by the Council of the Islamic Fiqh Academy of the Organization of Islamic Conference in its fourth session held in Jeddah, Kingdom of Saudi Arabia, from 6–11 February 1988[3] and the first ever issue was launched in 1990.[4] Despite, this inception and legitimation of Sukuk market in late twentieth century, government of Pakistan entered the global Sukuk market in 2005 with the issuance of $600 million Sukuk, while the domestic Sukuk programme was launched in 2008. According to the State Bank of Pakistan data, till June 2022, the government has successfully issued Ijarah Sukuk amounting to Rs3.25tr in the domestic market.

After almost three years, the Sukuk program was vigorously resurrected by the Ministry of Finance in 2020. As a result, the government issued Ijarah Sukuk worth more than Rs2.315 trillion (about

[3] Resolutions and Recommendations of the Council of the Islamic Fiqh Academy 1985–2000, Resolution No. 30 (5/4), p. 61.

[4] International Islamic Financial Market Report on Sukuk.

$13 billion) in the domestic market between April 2020 and June 2022. In addition to lowering the government's borrowing costs relative to traditional instruments, these issuances also assisted in the development of Sharia-compliant government channels in the domestic Islamic capital market.

With the issue of a $1 billion Pakistan International Sukuk in January 2022, the government of Pakistan once more entered the global market with the aim of obtaining dollar funding from global sources. With this offering, Pakistan has now issued $4.6 billion in Sukuk globally. Additionally, this demonstrates the ability of Sukuk to raise money to satisfy the sovereign financial requirements in accordance with Shariah. Sukuk has numerous advantages for both investors and issuers. They offer a practical means of obtaining substantial funding, producing much-needed liquidity for organizations—particularly governments—that possess substantial amounts of illiquid assets. Another advantage is that they are Sharia-compliant, which attracts Sharia-compliant institutions and attracts investors with Islamic investment preferences because riba (interest) avoidance is frequently a top priority for many investors in Pakistan.

The domestic Sukuk market has a very promising future. In the medium term, the government hopes to raise the market share of Sukuk currently at about Rs1.5 trillion under the Ijarah Sukuk plan. In an effort to raise the percentage of Sharia-compliant instruments in government securities by the end of 2022–2023, it is also investigating novel ideas such as asset-light structures, green Sukuk, and sustainable Sukuk. The largest security successfully offered via book-building on the Pakistan Stock Exchange (PSX) was the Rs200 billion Pakistan Energy Sukuk-II. Government and non-government Sukuk worth Rs470bn are now listed on PSX.

Sukuk can tap a broader market than conventional bonds, as it also includes investors with a Sharia compliance mandate, resulting in heavily over-subscribed government Sukuk issues in Pakistan. Also, being backed by assets and providing a fixed income stream, they are a less risky investment avenue than the equity market. When compared to Pakistan Investment Bonds and traditional t-bills, Sukuk are more affordable for the government due to their high demand and abundant liquidity with Islamic financial institutions. Furthermore, government Sukuk offer Islamic finance institutions—which have been struggling with a lack of high-caliber investment options—a better way to make investments.

Because they are asset-backed, Sukuk can directly support the creation and expansion of actual economic activity when they are issued to finance the construction of new infrastructure, such as dams, solar parks, renewable energy projects, hospitals, and highways. In addition, they are safer than traditional bonds. Additionally, the default risk is decreased when assets are sold to satisfy investor cashflows. Fresh Sukuk issuances can contribute to the documentation of the economy as more investors are attracted to its Sharia-compliant nature. Therefore, a larger portion of government financing needs must be met with the regular issuance of Sukuk. Sukuk can also attract financing for infrastructure development projects and can be targeted toward the retail segment to develop Islamic capital markets and contribute to financial inclusion.

Therefore, keeping in view all these developments of Sukuk market in Pakistan, it become imperative to investigate the factors which have an impact on the development of Sukuk market. In this regard, macroeconomic factors and the financial system of a country play a primary role in the development of a financial market, like Sukuk market. Favorable macroeconomic environment provides all the bases needed for the inception and growth of the market. For instance, large economic size provides scale efficiencies necessary for the depth of the Sukuk market. Foreign capital inflows, like foreign direct investment (FDI), exports and others provide financial competition which allows new markets to emerge. Similarly, a developed financial system in the form of banking sector development, stock market and money supply provide the necessary infrastructure needed for the development of a new financial market. In this context, the present study will assess the impact of macroeconomic variables on Sukuk market development in Pakistan.

LITERATURE REVIEW

Despite the emergence of Sukuk across different markets worldwide, there are very few studies on this subject, which highlights the development structures of Sukuk markets. As a result, it is important to review the literature on the macroeconomic factors that influence the growth of the Sukuk market. Therefore, it is worth assessing the literature on the macroeconomic determinants of Sukuk market development.

In recent times, Sukuk market has shown phenomenal growth across different economies. Although, the relevant empirical literature on Sukuk market development is inadequate. But, some of the remarkable empirical works on Sukuk has been done by Adam and Thomas (2004), Wilson (2008), Jaffer (2011), Godlewski et al. (2013), Van Wijnbergen and Zaheer (2013), Azmat et al. (2014), Smaoui et al. (2017) and Aman et al. (2019a, 2019b, 2021).

Therefore, to review briefly these efforts to get comprehensions regarding the Sukuk market development across the globe, especially in Sukuk issuing countries. Whereas, these studies have adopted different methodologies, while accomplishing the targeted objectives.

So in this context, Godlewski et al. (2013) studied the reaction of investors toward announcements of Sukuk and bonds. Authors find the negative reaction of market towards Sukuk announcement in earlier studies but positive reaction toward Ijara Sukuk in the later study. Van Wijnbergen and Zaheer (2013) also conducted study on Sukuk investigating the default of some Sukuk issues. Findings revealed that certain contractual clauses similar to the conventional bonds led Sukuk to the cases of default. The importance of innovation in the Sukuk was discussed by Jaffer (2011). Azmat et al. (2014) find that an existing higher debt ratio motivates firms to issue Sukuk. Naim et al. (2013) and Wilson (2008) found that, instead of interest rates, pricing Sukuk based on growth in the gross domestic product (GDP) leads to the stability in Saudi Arabia. Similarly, Adam and Thomas (2004) also studied about underlying assets for Sukuk and the potential of Sukuk.

However, Said and Grassa (2013) explored the relationship between the macroeconomic, financial, institutional, legal, and societal environments and the growth of the Sukuk market. They also took into account how financial crises can affect the Sukuk market. The study covered a range of Sukuk issuing nations from 2003 to 2012 throughout this time. The results showed a favorable correlation between macroeconomic parameters and the Muslim population and Sukuk. However, the expansion of the Sukuk market is significantly impacted by financial crises. On the evolution of the Sukuk market, two further, recent studies have been done (Smaoui & Khawaja, 2016; Smaoui et al., 2017). The study from 2016 included a sample of 13 nations from 2001 to 2013. It determines that the country's size, the majority of its population being Muslim, and appropriate investment and institutional environment are the driving forces behind the development of the Sukuk market.

Higher interest rates in the nation, however, cause a fall in Sukuk market investment. The banking and Sukuk markets are said to be substitutes for one another, according to a 2017 study on 11 nations during the years 1995 to 2015. Sukuk, bonds, and stocks, on the other hand, work best together (Smaoui et al., 2017).

In 2018, Mansoor Al-raeai published a study on the growth of the Sukuk market in the GCC. It was truly an in-depth study to determine the impact of macroeconomic factors in the growth of Sukuk markets in GCC countries. The study primarily focused on the Sukuk market development in the Gulf countries. Thus, the study found that the ongoing global financial and economic crisis, low oil prices, political unrest, the growth of Sukuk markets in the GCC region, and the significant demand for infrastructure all play a significant role in funding the region's corporate and governmental sector. By balancing the region's heavy reliance on oil exports and the banking industry, a well-developed Sukuk market can offer GCC nations additional sources of funding while also enhancing the region's financial stability. Additionally, the GCC nations must make use of their sizable foreign reserves and savings to meet the region's enormous demand for productive investment, notably in infrastructure. Through Sukuk markets, local and regional funds can be directed toward long-term infrastructure projects and other profitable investments. Therefore, it is important for GCC nations to comprehend how macroeconomic factors affect the Sukuk market in order to improve it. In order to make it appealing for investors to hold Sukuk assets, it is crucial that these countries fight to build their economies and adhere to solid macroeconomic policies in order to promote their Sukuk markets.

Similar to this, a study on the variables influencing the development of the Sukuk market in Sukuk issuing countries found that both developed and developing nations, Muslim and non-Muslim, have begun expressing interest in Sukuk financing (Aman et al. 2021). The main driver of this interest was the lesson that Asian nations and non-Asian economies in general had learned: it takes a substantially developed capital market to create an economy sufficiently resilient to the financial crisis. As a result, huge numbers of Sukuk issuances by corporate, financial institutions, and quasi-sovereign entities have been noted. The study concentrated on the theoretical and empirical explanations of Sukuk with respect to various elements of foreign capital inflows, macroeconomic and financial environments in order to fill the vacuum in the academic literature. the research discovered that five of them significantly influence the Sukuk market. Economic development stages, the banking system, the availability of money, and the current account all have a beneficial impact on the Sukuk market. However, exports play a negative and important impact in the Sukuk market. In contrast to a conventional bond, the Sukuk example did not support the other study hypotheses. This could be as a result of the Sukuk markets in most Sukuk issuing countries being disproportionately tiny compared to the size of their economies.

Therefore, it is advised that a country might enhance the growth of the Sukuk market by directing those foreign inflows towards such projects that are financed by Sukuks. For example, Sukuk with a mudaraba (investment) or musharaka (partnership) base can draw international investment. Similar to that, Sukuk and bonds may be issued in support of projects that receive foreign investment for a portion of their funding.

METHODOLOGY

Research Design

Research design is basically a conceptual structure within which the proposed research is conducted and constitutes the blue print for the collection; measurement and analysis of data (Kothari, 2004). It primarily helps the researcher to obtain relevant data and to accordingly fulfil the predefined objectives of the study. There are actually different types of scientific research approaches namely exploratory research, descriptive research and explanatory research (Bhattacherjee, 2012). This research work is carried out by employing, explanatory research design to explain the relationship between variables and their association with each other.

Research Approach

Research approaches are basically, plans and procedures for research that encompass the steps from broad assumptions to detailed methods of data collection, analysis, and interpretation (John, 2014). There are three basic approaches to research i.e. qualitative, quantitative and mixed methods. Whereas, quantitative approach is deemed the most appropriate approach if the aim is to describe the degree of relationship between the variables. So quantitative approach helps researchers to test the relationships between variables (Creswell, 2012). Therefore, keeping in view the nature of the study, we will use quantitative research approach to assess the relationship between Sukuk market development and macro-economic variables in Pakistan.

Data and Sources

This study is of quantitative nature, predominantly based on secondary data, which has been collected from various secondary sources. The variables of interest for which we collected the desired data are: Sukuk market and macro-economic variables. The study used yearly time series data, for fifteen years from 2008 to 2022. Thus, Sukuk market related data was obtained from international Islamic financial markets and of macro- economic variables were collected from world development bank.[5]

Techniques of Analysis and Model Specification

In time series analysis, the appropriate model to use, fundamentally depends upon the order of cointegration. Hence, to find out the impact of macroeconomic variables on Sukuk market development in Pakistan, the study employed VECM technique to obtain the predefined objectives. This approach is chosen because the variables used in this study contain same order of integration i.e. at first difference. Therefore, centered on the relevant empirical literature, the variables used in the model are itemized as follows:

$$\begin{aligned}\Delta \mathrm{SMC}_{it} = {} & \alpha + \sum_{i=0}^{n} \beta_1 \Delta SMC_{it-1} + \sum_{i=0}^{n} \beta_2 \Delta GDP_{it-1} + \sum_{i=0}^{n} \beta_3 \Delta INF_{it-1} + \sum_{i=0}^{n} \beta_4 \Delta ER_{it-1} \\ & + \sum_{i=0}^{n} \beta_5 \Delta TOP_{it-1} \\ & + \beta_1 SMC_{it-1} + \beta_2 GDP_{it-1} + \beta_3 INF_{it-1} + \beta_4 ER_{it-1} + \beta_5 TOP_{it-1} + \varepsilon_{it}\end{aligned}$$

Unit of Analysis

[5] World Bank, World development indicators.

The unit of analysis used in this research is Sukuk market development.

RESULTS AND INTERPRETATIONS

Most of the empirical works on time series data assume that time series data are non-stationary. This is in accordance with the typical behaviour of macroeconomic variables. Hence, it is essential to carry out unit root tests before running the model to ensure appropriate model specifications. To test for unit root, Augmented Dickey-Fuller (ADF). This test is applied to check whether the variables are stationary or non-stationary. A stochastic process is said to be stationary if its mean and variance are time invariant and the auto-covariance does not depend on time, but depends on the time lag between the variables, and the reverse is true for non-stationary time series. Most importantly, running a model using non-stationary data has high chances of leading to spurious relationships.

Therefore, we proceeded our empirical testing to check whether the variables chosen are stationary or non-stationary. To ascertain the established facts, we applied augmented Dickey-Fuller test, which is primarily employed to determine if a time series has a unit root, a characteristic that can make the series non-stationary or stationary. Basically, testing unit root of the time series is very important to proceed with the Cointegration testing later, but the variables should be stationary at level I(0) or Stationarity at first differenced I(1). Therefore, after conducting the ADF procedure, the results in the tables reveal that all the variables are stationary at first difference.

Augmented ADF test.

Table 1

Variable	**T-Stat.**	**Critical Value**	**Result**
Sukuk	-1.950	-1.866	Stationary I(1)
GDP	-3.195	-1.860	Stationary I(1)
Inflation	-3.215	-1.950	Stationary I(1)
Exchange rate	-2.533	-1.950	Stationary I(1)
Trade openness	-2.336	-1.950	stationary I(1)

Optimal Lag

In time series analysis, the optimal lag refers to the appropriate number of time lags to consider when modeling a time series data. Choosing the right lag is crucial as it can significantly impact the accuracy of your model's predictions and help capture underlying patterns and dependencies in the data. There are various lag selection criteria's given in the table, but the optimal results extracted by AIC are most favorable and optimistic for further analysis. Therefore, the results from the Table 2 reveal that lag two is optimal, on the basis of highest values of AIC lag selection criteria.

Table 2

Lag	LL	LR	FPE	AIC	HQIC	SBIC
0	-68.1724	4.1e+07*		28.869	28.0304	28.5565
1	626.485	1389.3*	16 0.000	-242.594	-246.787	-244.156
2	637.205	21.44	16 0.162	-246.882*	-251.075*	-248.444*
3	622.974	-28.461	. . 16	-241.19	-245.383	-242.752

4	622.974	16	.	.	-241.19	-245.383	-242.752

* optimal lag

Endogenous: dsuk dgdp dinf der dto

Exogenous: _cons

Cointegration

The purpose of the co-integration test is to determine the possibility of a long-term relationship between the dependent variable and the independent variables. Therefore, the approach used for Cointegration test is Johannes's Multivariate Cointegration Test.

vecrank dsuk dgdp dinf der dto, trend(constant) max

Johansen Tests for Cointegrating

Trend: Constant Number of obs = 8

Number of lags = 1

Table 3

No. Of CE(S)	Eigenvalue	Trace Static	Critical Value
0		536.7938	68.52
1	1.00000	260.4772	47.21
2	1.00000	19.2721*	29.68
3	0.87453	2.6666	15.41
4	0.28346	-0.0000	3.76
5	-0.00000		

Based on the results of the Multivariate Cointegration Test from Joahansen, the results from Table 3 reveal that critical value is greater than trace statics, indicates that their exist co-integration among variables used in this research model. Therefore, on the basis of Stationarity of the data at the first difference and the existence of Cointegrating equations, the most suitable estimation technique to carry out further analysis is Vector Error Correction Model (Sanusi et al. 2021).

Vector Error-Correction Model

If the data is not stationary at the level, then to make the data stationary is obtained by using the first difference. An analysis tool of advanced stationary data at the first difference is the Vector Error Correction Model (VECM) (Gujarati & Porter, 2009). Moreover, the Vector Error Correction Model (VECM) is a form of VAR that is the most restricted. This additional restriction is done because the form of data is not stationary at the level. Furthermore, in VECM there is the speed of adjustment from short to long term. This serves as an approach for estimating long-term and short-term relationships in one other time-series data (Gujarati & Porter, 2009).

The results from the VECM model, used in the study to evaluate the impact of macro-economic variables on Sukuk market capitalization are displayed in the Table 4. The results from the table explicitly reveal that, in the short-only only two variables i.e. gross domestic product and exchange rate have a positive and significant impact on the Sukuk market development. Therefore, these results indicate that an increase in these two variables particularly in the short-run may lead to the development of Sukuk market in Pakistan. Moreover, these results are consistent with the relevant studies from the empirical literature in both bond and Sukuk market (Basyariah et al. 2021; Molefhi, 2021). While, the results also reveal that the variables of inflation and trade openness does not show any influence on the development of Sukuk market in the short-run.

Table 4

	Coefficient	Std. err.	z	P>|z|	[95% conf. interval]	
D dsuk						
_ce1						
L1.	-2.50e-21	5.08e-21	-0.49	0.622	-1.25e-20	7.44e-21
dgdpL1.	1.28e-09	1.01e-09	1.26	0. 004	-7.05e-10	3.27e-09
dinf L1.	7.78e-11	2.69e-11	2.89	0. 206	2.50e-11	1.31e-10
der L1.	6.06e-11	2.94e-11	-2.06	0.040	-1.18e-10	-2.89e-12
dtoL1.	3.50e-12	1.12e-11	0.31	0.755	-1.84e-11	2.54e-11
_cons	3.28e-10	4.67e-10	0.70	0.483	-5.88e-10	1.24e-09

Long-run estimates

Johansen normalization restriction imposed

Table 5

Beta	Coefficient	Std. err.	z	P>|z|	[95% conf. interval]	
_ce1						
dsuk	1	.	.	.	.	.
dgdp	2.89e+08	122682.3	-2354.94	0.000	-2.89e+08	-2.89e+08
dinf	-1.74e+10	3688142	-4709.66	0.000	-1.74e+10	-1.74e+10
der	1.54e+08	4728689	32.48	0.000	1.44e+08	1.63e+08
dto	2.30e+09	1.77e+07	130.37	0.000	2.27e+09	2.34e+09
_cons	8.44e+10	.	.	.	.	.

Long-run estimates demonstrate that all the variables, except inflation has shown positive significant impact on the development of Sukuk market in Pakistan. This indicates that in the long run, an increase in these variables leads to an increase in the development of Sukuk market. The coefficient of GDP is positive and significantly related to market capitalization of Sukuk both in the long run and in the short run, suggesting that a healthy and stable economic state has a positive influence on Sukuk market development. Similarly, exchange rate has shown a positive and significant impact on Sukuk market capitalization in both the short-run and long-run.

Furthermore, trade openness has also shown a significant influence on Sukuk market capitalization in the long-run. Which actually indicates, that more open economies do less to suppress the securities market because established interests may not be able to insist on policies that suppress competing sources of supply when the economy is exposed to international competition (Rajan & Zingales, 2001; Eichengreen & Luengnaruemitchai, 2004; Bhattacharyay, 2013). Hence, the results of the study are consistent with these all studies demonstrating positive and significant impact on the development of both bond and Sukuk market.

However, in case of inflation the results explicitly reveal that both in the short-run and long-run it have shown no influence on the development of Sukuk market. Interestingly, these outcomes are justifying the arguments by Said and Grassa (2013), who found that inflation does not appear to have a strong effect on the development of Sukuk market. Likewise, the studies from the empirical literature demonstrated that there is no consensus on a single measurement of inflation among researchers.

CONCLUSION

This research work has explored the relationship between macro-economic variables and Sukuk market development in Pakistan using yearly time series data from 2008-2022. The main objective of this work was to make an assessment about the relationship between macroeconomic variables Sukuk market development measured with market capitalization, using VECM technique to obtain the predefined objectives.

Whereas, the prime focus of this work was to ascertain the relationship between macro-economic variables and Sukuk market development in Pakistan. So, in this pursuit we have employed VECM technique to obtain this anticipated objective. Consequently, the estimates reveal that only two variables i.e. GDP and exchange rate have shown some significant impact towards the development of Sukuk market in short-run. However, this revealability is totally different in long-run, where only one variable i.e. inflation have shown negative relationship with Sukuk market development, which means that rest of the variables are significantly related.

Therefore, considering these interpreted estimates, policy makers should frame and even implement such strategies through which they can attain optimal levels of these macro variables to comprehensively develop the Sukuk market in Pakistan. As, the results explicitly reveal that certain variables have shown some significant impact on the development of the Sukuk market both in the short-run and in the long-run. Hence, to develop Sukuk market in the country, there is need to provide a conducive and sustainable atmosphere for macro-economic indicators.

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