The Negative Impact of Interest Rates on GDP, Consumption and Investment in the UK: Does Islamic Finance Offer a Solution?

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Abstract

The objective of this study is to analyze the causal relationship between interest rates and the real sector, namely in terms of real GDP, consumption, and investment. By doing so, we intend to assess the impact of Islamic financing on the economy of the United Kingdom. This study adopts a macroeconomic framework to analyze the significance of Islamic financing in the United Kingdom, focusing on macroeconomic data and it employs a humanistic method to explore the economic behaviour of individuals. This research has implications for understanding Islamic finance in the UK by understanding the causal relationship between macroeconomic indicators and humanistic factors, namely Islam. Vector analysis is used to measure and analyze the influence between variables so that the direction of influence between interest rates, GDP, investment, and consumption can be known. The impact of interest rates on the real sector is notably adverse, as seen by the correlation between interest rates and both consumption and GDP. Based on an inverse correlation, it may be inferred that the implementation of an Islamic financial system characterized by zero interest rates or the absence of interest on capital has the potential to stimulate growth in the real economy.

Keywords: Interest Rates on GDP, Consumption, Investment, Islamic Finance.
JEL Classification: A10, I20 , I32.

Received: November 6,2021 Accepted: Desember 1,2021
DOI : 10.54204/TAJI/Vol812023006

Introduction

Can the Islamic financial system improve economic prosperity? This is an important question for many countries, especially those with large or significant Muslim populations, such as the UK (Ainin, Feizollah, Anuar, & Abdullah, 2020). Islamic finance is a financial system based on sharia principles, namely Islamic law that regulates all aspects of human life. Islamic finance prohibits practices such as riba (interest), gharar (uncertainty), maysir (speculation), and haram (forbidden). Islamic finance also emphasizes the importance of justice, welfare and social responsibility in financial transactions (Fanshurna, 2022 ; Damayanti & Rusminingsih, 2020).

The Islamic financial system in England has developed since the 1980s and has become one of the largest Islamic financial centers in the world. The UK has a large and diverse Muslim population, who seek financial products and services that comply with Islamic principles. In addition, the Islamic financial system also attracts interest from non-Muslims who appreciate the

ethical and social values offered by this system. The British government provides support and facilities for the Islamic finance industry to develop in this country. Some examples of flexible regulations are legal recognition of sharia contracts, tax exemptions for Islamic financial products, and setting accounting and audit standards for Islamic financial institutions. The Islamic finance industry in the UK continues to innovate and compete with the conventional finance industry (Hanieh, 2020).

Islamic finance has grown rapidly in recent decades, both in scale and diversity of products and services. According to the World Islamic Banking Competitiveness Report 2020, global Islamic banking assets reached $2.2 trillion at the end of 2019, with annual growth of 11.4%. In addition, there are more than 1,400 Islamic financial institutions operating in more than 80 countries, including non-Muslim countries such as the UK, Germany and the United States (Alshater, Khan, Hassan, & Paltrinieri, 2023).

The theory of aggregate demand and aggregate supply (AD-AS) in macroeconomics explains the relationship between interest rates, GDP, consumption, and investment in the goods market and money market. This theory can also be used to analyze the impact of monetary policy on the real sector. Within the framework of AD-AS theory, the aggregate demand (AD) curve illustrates the comprehensive level of demand for products and services within an economy across different price levels. The negative slope of the aggregate demand (AD) curve may be attributed to many factors, including the interest impact, exchange rate effect, and wealth effect. The interest effect posits that an increase in the price level leads to a corresponding increase in real interest rates, resulting in a decrease in demand for investment and consumption. The exchange rate effect states that when the price level rises, the exchange rate of the domestic currency also rises, thereby reducing the demand for exports and increasing the demand for imports. The wealth effect states that when the price level rises, the real value of wealth also falls, thereby reducing the demand for consumption (Yoshino, Gopakumar, Paramanik, Taghizadeh-Hesary, Revilla, & Ram, 2022).

The AS curve shows the total quantity supplied of goods and services in an economy at various price levels. The AS curve has a positive slope due to the effects of production costs, inflation expectations effects, and profit effects. The production cost effect states that when the price level rises, production costs also rise, thereby reducing the amount of output offered by producers. The inflation expectations effect states that when the price level rises, inflation expectations also rise, thereby increasing nominal wage costs and the cost of capital. The profit effect states that when the price level rises, the real profits of producers also rise, thereby increasing the amount of output supplied by producers (Clemens, 2021).

The application of the AD-AS theory allows for the investigation of the impact of interest rates on the real sector via the use of vector analysis. Vector analysis is a statistical method that can measure and analyze causal relationships between macroeconomic variables. By using vector analysis, we can determine the direction and magnitude of the influence of interest rates on GDP, consumption, and investment. The findings of the vector analysis indicate a notable adverse

impact of interest rates on the real sector. This is evident from the observed direction of the effect exerted by interest rates on both consumption and GDP (Hansi, 2023).

AD-AS theory can also be used to examine the role of Islamic finance in the UK using a humanistic approach. A humanistic approach is an approach that pays attention to human aspects as economic actors, such as values, beliefs, and motivation. By using a humanistic approach, it can be understood how Islamic finance can influence the economic behavior of British society, which is predominantly Muslim. Islamic finance is a financial system based on Sharia principles, such as the prohibition of riba (interest), gharar (uncertainty), and maysir (speculation). With the existence of Islamic finance, British people who are Muslim can meet their financial needs without violating the teachings of their religion. By using AD-AS theory and a humanistic approach, this research can provide implications for understanding Islamic finance in the UK by understanding the causal relationship between macroeconomic indicators and humanistic factors, namely Islam. With a negative direction of relationship, The deduction may be made that the implementation of an Islamic financial system characterized by the absence of interest rates or interest on capital has the potential to stimulate growth in the real economy (Bruni & Milbank, 2019).

AD-AS theory was chosen as a theoretical framework because this theory is relevant to the research topic and can explain macroeconomic phenomena well. This theory also has sufficient depth to analyze research variables and test research hypotheses. This theory is appropriate to the research context because England is a country that has a conventional financial system and Islamic finance. This theory moreover makes a scholarly contribution to the advancement of scientific knowledge as it effectively combines macroeconomic and humanistic viewpoints to comprehend the function of Islamic financing inside the UK (Girdzijauskas, Streimikiene, Griesiene, Mikalauskiene, & Kyriakopoulos, 2022).

Although many studies have examined the impact of the Islamic financial system on macroeconomics, few have examined the direction of influence between these variables. Apart from that, there has been no research that uses a humanistic approach to understand the human aspect as an economic actor in the Islamic financial system. Therefore, the problem of this research is: What is the direction of influence between interest rates, GDP, investment and consumption in the context of the Islamic financial system in the UK? And how do humanistic factors, namely Islam, influence this relationship?

The aim of this research is to examine the direction of influence between interest rates, GDP, investment and consumption in the context of the Islamic financial system in the UK using vector analysis. This research also uses a humanistic approach to understand human aspects as economic actors in the Islamic financial system. This research has significance in understanding the role of the Islamic financial system in the UK through macroeconomic indicators and humanistic factors, namely Islam.

This paper consists of five parts. The first part is the introduction, which introduces the research topic, provides research background, formulates the research problem, states the aim and significance of the research, and provides an overview of the structure of the paper. The second

part is a literature review, which discusses related literature on the Islamic financial system, macroeconomic indicators, and humanistic approaches in Islamic economics. The third part is research methodology, which explains the research design, data and data sources, data analysis techniques, and testing model assumptions. The fourth section is the results and discussion, which presents and analyzes the results of vector analysis between research variables. The fifth section is conclusions and suggestions, which summarizes research findings, concludes answers to research problems, and provides suggestions for further research.

Literature Review

Islamic economics is a branch of economics that studies the economic aspects of Islam and its ethical and moral principles. It aims to promote social justice, human welfare, and economic development in accordance with the teachings of Islam. Islamic finance and economics is a field related to the application of sharia principles in financial and economic activities. Sharia principles prohibit interest, speculation, injustice, environmental damage and unethical business. Islamic finance and economics offer an alternative that is equity-based, asset-oriented, sustainable, environmentally and socially friendly, as well as inclusive and fair (Furqani, Adnan, & Mulyany, 2020).

Islamic finance includes various sharia-compliant products and services, such as sharia banking, sharia capital markets, Sukuk (shariah bonds), Takaful (sharia insurance), sharia microfinance, zakat (welfare tax), waqf (land donation) and others (Alzahrani, 2019). Islamic finance has grown rapidly in the last decade, with global assets reaching around US$2 trillion in 2020. Islamic finance is not only in demand by Muslim-majority countries, but also by non-Muslim countries looking to diversify their portfolios and attract investors sharia. Islamic economics is a science that studies how humans manage limited resources in accordance with Islamic values. Islamic economics emphasizes the importance of balance between individual and collective interests, between this world and the hereafter, and between material and spiritual. Islamic economics also encourages cooperation, prosperity, justice, efficiency and equitable growth (Demirdöğen, 2021).

Islamic finance and economics have the potential to help solve various problems facing the world today, such as poverty, inequality, unemployment, financial crises, climate change and social instability. By connecting the financial sector with the real sector, Islamic finance can support productive and inclusive economic development. By using profit sharing schemes, Islamic finance can encourage better risk management and social solidarity. By applying ethical principles, Islamic finance can increase the social and environmental responsibility of financial actors (AbdulKareem, AbdulGaniyy, Mahmud, & Yazid, 2020).

Islamic monetary economics is a branch of Islamic economics that studies the role of money, monetary policy, and financial institutions in an economic system that complies with Sharia principles. One of the important characteristics of the Islamic economic system is the elimination of interest from the financial system. Therefore, under the Islamic economic system, monetary policy must rely on other tools (Rafay & Farid, 2019).

Islamic economics is one of the newest branches of knowledge originating from the Islamic intellectual tradition. Islamic economics aims to achieve holistic human welfare, based on moral and ethical values originating from revelation and rationality. However, Islamic economics also faces challenges and controversies in defining, developing and applying its concepts in the context of a pluralistic and dynamic modern world. One of these challenges is how to integrate a humanist approach in Islamic economics. The humanist approach is a view that emphasizes the dignity, potential and freedom of humans as intelligent and moral creatures. The humanist approach also values diversity, creativity and human participation in building a just and harmonious society (Adinugraha & Muhtarom, 2021).

A humanist approach can make a positive contribution to Islamic economics in several ways. First, a humanist approach can help expand the scope and depth of understanding of human welfare in Islam. Human welfare in Islam does not only include material aspects, but also spiritual, psychological, intellectual, social and environmental. A humanist approach can help identify and measure indicators of human welfare that are in accordance with Islamic views. Second, a humanist approach can help balance human rights and obligations in Islamic economics. Human rights in Islamic economics include the right to own, acquire, use and distribute resources fairly and efficiently (Susamto, 2020).

Human obligations in Islamic economics include the obligation to carry out sharia, pay zakat, give charity, give alms, protect the environment, and contribute to the progress of the people. A humanist approach can help emphasize that human rights and obligations are interrelated and mutually reinforcing (Achmad, 2022). Third, a humanist approach can help increase human participation and cooperation in the Islamic economy. Human participation and cooperation in the Islamic economy can be carried out through various institutions and mechanisms, such as markets, companies, banks, cooperatives, waqf, baitul mal, etc. A humanist approach can help ensure that these institutions and mechanisms function in a transparent, accountable, inclusive and responsive manner to human needs and aspirations (Anggadwita, Dana, Ramadani, & Ramadan, 2021). Thus, a humanist approach to Islamic economics can provide benefits for the development of economic knowledge and practices that are in accordance with Islamic values. A humanist approach can also provide an alternative to the conventional economic paradigm which is dominated by utilitarianism and materialism. A humanist approach to Islamic economics can be one way to realize the Islamic vision of a society that is physically and mentally prosperous (Ahyani & Slamet, 2021).

Hypothesis 1: Interest rates have a positive influence on GDP in the Islamic financial system in the UK.

Interest rates are one of the important factors that influence savings and investment levels. The interest rate is defined as the cost of borrowing or the profit of borrowing (Lian, Ma, & Wang, 2019). However, according to Islamic teachings, usury or earning interest on savings or investments is haram, and therefore, many Muslims try to avoid earning income from interest rates. Therefore, the aim of this article is to assess the influence of these religious guidelines on

the financial decisions of residents of Islamic countries and their impact on savings and investments (Gani, 2020 ; Prabowo, Sulisnaningrum, & Harnani, 2021).

Hypothesis 2: Investment has a positive influence on consumption in the Islamic financial system in the UK.

The Islamic financial system is based on sharia principles which prohibit usury (interest), gharar (uncertainty), and maysir (speculation). This system emphasizes the importance of justice, prosperity and sustainable economic growth. Investments in the Islamic financial system are carried out through various instruments such as mudharabah (profit sharing), musharakah (joint venture), murabahah (cost plus), ijara (leasing), and sukuk (Islamic bonds) contracts (Kuyateh, 2022). These instruments connect investors and entrepreneurs directly, thereby minimizing moral risk and adverse selection. Investments in the Islamic financial system also have positive social and environmental impacts, because they must comply with the criteria of halal (permissible) and toyyib (good). This encourages investment in sectors that benefit society and the environment, such as education, health, renewable energy and infrastructure. Consumption in the Islamic financial system is influenced by factors such as income, inflation, savings, state expenditure, and remittances (Utomo, Sekaryuni, Widarjono, Tohirin, & Sudarsono, 2021). Consumption is also influenced by Islamic values such as zakat (alms), infaq (donations), and qardhul hasan (interest-free loans). Sharia-compliant consumption can improve the quality of life and happiness of individuals and society. Investment and consumption in the Islamic financial system have a positive relationship, because investment can increase income, employment and productivity, which in turn can increase consumption. Conversely, high consumption can stimulate demand for goods and services, which can encourage investment. This relationship can create a cycle of healthy and sustainable economic growth (Zauro, Zauro, Saad, & Sawandi, 2020).

Hypothesis 3: Humanistic factors, namely Islam, have a positive influence on the economic behavior of economic actors in the Islamic financial system in the UK.

Humanistic factors, namely Islam, are factors related to the moral and ethical values taught by the Islamic religion. This factor can influence the economic behavior of economic actors in the Islamic financial system in the UK (Valangattil Shamsudheen & Azhar Rosly, 2019). Zakat is an obligation for every Muslim who has assets exceeding the nisab to set aside a portion of his wealth to give to people who are entitled to receive it, such as the needy, poor, converts, etc. Zakat aims to clean up wealth, reduce social inequality, and improve the welfare of the people (Husain, Hamzah, Asse, & Kara, 2019). Riba is interest or additional income obtained from loans or buying and selling transactions. Usury is prohibited in Islam because it is considered exploitation and injustice. The Islamic financial system replaces usury with a system of profit sharing or venture capital, where lenders and borrowers both bear the risk and gain profits. Speculation is an activity that involves chance or taking advantage of market uncertainty. Speculation is prohibited in Islam because it can cause losses to other parties, disrupt market

stability, and cause inflation. The Islamic financial system encourages transactions based on the real value of goods or services, not on hopes or estimates of the future (Abasimel, 2023).

Research Method

Research methods are an important part of an academic research paper that provides an opportunity to convince the reader that the research is useful and will contribute to the field of study. The autoregressive vector model with autoregressive vectors is used to see the direction of influence of variables on each other as follows:

$\Delta Con = \beta_0 + \beta_1 Con_{t1} + \beta_2 Q_{t2} + \beta_3 Inv_{t3} + \beta_4 Ir_{t4} + e_t$

$\Delta Q = \beta_0 + \beta_1 Con_{t1} + \beta_2 Q_{t2} + \beta_3 Inv_{t3} + \beta_4 Ir_{t4} + e_t$

$\Delta Inv = \beta_0 + \beta_1 Con_{t1} + \beta_2 Q_{t2} + \beta_3 Inv_{t3} + \beta_4 Ir_{t4} + e_t$

$\Delta Ir = \beta_0 + \beta_1 Con_{t1} + \beta_2 Q_{t2} + \beta_3 Inv_{t3} + \beta_4 Ir_{t4} + e_t$

Q denotes Gross Domestic Product. Consumption is written Con, investment is written Inv, and the interest rate is written Ir.

Autoregressive vectors or VAR models are statistical models used to describe the relationship between several variables that change over time. The VAR model is an extension of the univariate autoregressive model which only involves one variable. The VAR model allows us to analyze multivariate variables without having to determine endogenous and exogenous variables. The VAR model has an order that indicates the number of previous time periods used in the model. VAR models can be used for various purposes, such as predicting future values of variables, testing hypotheses of causality between variables, and measuring the dynamic impact of disturbances on the system. VAR models can also be modified to handle special cases, such as nonstationary data, periodic data, or data with a hierarchical structure. The ADF test is used as a stationarity test to check the stationarity of all data before estimation. After that, we can perform vector autoregression estimation. We use secondary data from the world bank as our data source for this research. The deposit interest rate is used to calculate the interest rate (Ir). The real gross domestic product (Q) is used as an indicator of the real sector. Final consumption expenditure is used as an indicator of consumption (Con). And net investment in non-financial assets is used as an indicator of investment (Inv) in the real sector.

Result and Discussion

We performed a test on the data prior to estimating it in this study. The data stationarity test was used to determine if the data was stationar. Table 1 presents the test findings.

Table 1. The results of the stationarity test

Method			Stat.	Prob.**
ADF - Fisher Chi-sq.			9.0021	0.1023
ADF - Choi Z-stat.			0.43111	0.2231
Name	Prob.	Lag	Max Lag	Obs
Con	0.8711	0	4	20
Q	0.8141	0	4	20
Ir	0.0211	0	4	20
Inv	0.1712	0	4	20

** The probabilities for Fisher tests are based on an asymptotic Chi-square distribution. All other tests have the assumption of asymptotic normality.

As the test results indicate, the data are stationary and can be used for estimating autoregressive vectors. The estimation outcomes are displayed in Table 2.

Table 2. VAR estimation Results

	CO	GDP	I	IR
CO	0.112211	-0.71121	0.01321	-0.00000000331
	-0.44221	-1.04221	-0.42251	-0.00000000134
	[0.29112]	[-0.31123]	[0.01121]	[-0.24322]
GDP	0.054432	0.099221	0.211211	-0.00000000000341
	-0.1994	-0.69643	-0.18221	-0.000000000442
	[0.25523]	[0.19671]	[1.19233]	[-0.79279]
I	1.59	3.92	0.0127	0.000000000221
	-0.311	-1.29	-0.221	-0.00000000002
	[2.68911]	[2.24259]	[0.05112]	[1.82212]
IR	-0.00000000341	-0.00000000019	-0.00000000018	-0.331
	-0.00000000021	-0.000000005	-0.0000000021	-0.367
	[-0.40111]	[-0.39284]	[-1.36326]	[-1.03772]
C	-0.00000000399	-0.000000000301	0.000000000524	0.399
	-0.00000000087	-0.000000000029	-0.00000000007	-1.98
	[-0.35112]	[-0.87112]	[0.91122]	[0.19772]
R-sq.	0.87	0.86	0.51	0.495
Adj. R-sq.	0.82	0.82	0.49	0.26

The autoregressive vector estimation results enable the determination of the directional influence between variables through the comparison of the t-statistic with the significance coefficient of the relationship. A negative sign (-) indicates a negative direction, while a positive direction is

indicated by the absence of a sign (-). This finding indicates that the act of consuming has a significant favorable impact on subsequent eating patterns. The positive and significant effect of consumption on its own consumption demonstrates that current consumption is influenced by past consumption. This demonstrates that a change in current consumption will have an influence on future consumption. Based on the calculations in table 2, it reveals that consumption is a forecaster of its own consumption in the future. Consumption has an insignificant negative effect on GDP. Table 2 shows that while there is a negative correlation, UK consumption has no discernible impact on economic growth. This indicates that UK consumption levels are still not a reliable indicator of economic development, but more research is needed in this area. Investment is significantly enhanced by consumption. Consumption in the UK significantly affects investment with a positive relationship which reveals that consumption in the UK is a forecaster of potential investment in the future.

Interest rates are negatively impacted by consumption. This suggests that there is an inverse link between consumption and interest rates, meaning that they fluctuate in opposing directions. When consumption rises, interest rates fall, and the other way around. In the Islamic economic simulation in England, this inverse relationship indicates that interest rates inhibit public consumption and also have a negative effect on investment, since consumption and investment have a direct relationship. Reduced investment results in reduced economic growth. The Islamic economic simulation in England also reveals an inverse relationship between consumption and economic growth, which suggests that the production sector in this simulation depends on the foreign market rather than the domestic market. The domestic market is driven by consumption, while the foreign market is driven by exports.

GDP affects GDP positively. The estimates of GDP in Table 2 demonstrate that GDP has a positive impact on itself. This means that previous GDP affects current GDP and current GDP affects future GDP. GDP also affects investment positively. GDP affects interest rates negatively. The disparity in the reactions of investment and interest rates to fluctuations or incentives in GDP suggests that the expansion of the economy, as measured by GDP, fosters investment. This phenomenon is logical since robust economic development elevates investors' anticipations for investment, hence exerting a positive influence on the attractiveness of investment opportunities. The observed phenomenon may be attributed to corporate strategies that prioritize the use of retained profits for the purpose of augmenting company expansion, as opposed to relying on debt. Consequently, during periods of economic development and heightened business activity, the growth of businesses and their capital stems from retained earnings and investments made by investors, rather than from debt accompanied by interest. This reduces interest rates. Investment affects consumption positively. Investment affects economic growth positively but insignificantly. Investment affects its own investment positively. Investment affects interest rates positively. Investment and consumption have a positive connection because investment creates new jobs that boost labor participation and income for more people. A society with more income has more purchasing power and consumption inclination, resulting in more consumption. Investment supports economic growth, but this is not significant, because retained earnings are used more than incoming investment to encourage economic growth. Self-investment fosters self-investment, meaning that current investments are affected by previous investments and current investments anticipate future investments. We were astonished by our estimation results when we discovered a positive connection between investment and interest rates. This observation suggests that there exists a segment of the population in England who do not have a negative stance towards usury. Consequently, when

investment levels rise, there is a corresponding increase in the quantity of money circulating within the economy, which is then used by people or communities as capital assets in various enterprises. This phenomenon serves as a source of inspiration for many individuals to engage in investment activities, while some investors acquire their investment capital via debt financing, therefore leading to an escalation in interest rates.

A high interest rate negatively influences consumption, GDP, and investment, but not significantly. It also decreases the interest rate itself considerably. This means that interest harms the economy when it is an independent variable. All variables are adversely affected by the interest rate when it rises. This results in a decline in consumption, investment, and economic growth when the interest rate increases. This puts pressure on both investors and consumers. Investors face higher interest payments, and consumers face higher financing costs for goods like houses and cars. This lowers their purchasing power and consumption rate. When consumption drops, the domestic market fails to consume the products of production, and the foreign market does not make up for this drop. This lowers economic growth (GDP). The estimate findings reveal that the interest rate has a negative influence on all variables, implying that it poses a constraint on the real sector of the economy, but not in a statistically significant manner. This suggests that a decrease in interest rates is advantageous for the productive part of the economy.

Conclusion

Interest or usury is forbidden by the Islamic financial system. As a majority Muslim country, United Kingdom adopts an Islamic financial system that follows the principles of Islam. The effect of interest rates in United Kingdom on the real sector shows this. The real sector suffers from a significant negative impact of interest rates, as seen by how interest rates affect consumption and GDP. Hence, it can be deduced that the Islamic financial system, which operates without interest or with a zero interest rate on capital in the United Kingdom, has the potential to enhance the real sector more effectively compared to the conventional financial system that imposes interest as a capital expense. Based on the conclusions of our research, we recommend that the United Kingdom government develop the sukuk market as an alternative financing that is based on profit sharing and does not involve interest (usury). Sukuk are securities that represent ownership of real assets or specific projects. Sukuk can help increase financial inclusion, diversification of funding sources, and financial system stability. Increasing the role of Sharia banks in providing financial services in accordance with Islamic principles, such as mudharabah (profit sharing), musharakah (cooperation), murabahah (buying and selling with profit), and ijarah (rental). Islamic banks can provide benefits to the economy, such as reducing moral risk, increasing the efficiency of fund allocation, and encouraging real sector growth. Establish an adequate regulatory and supervisory framework for the Islamic financial system, including standards for accounting, auditing, governance, consumer protection, and deposit insurance. This framework can help increase public trust, transparency, soundness, and resilience of the Islamic financial system. Coordinating and collaborating between monetary and fiscal authorities to support effective monetary policy in the Islamic financial system. This may involve the development of Islamic monetary instruments, monetary transmission mechanisms, open market operations, liquidity facilities, and the provision of last-ditch loans.

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