

THE FINTECH AND ISLAMIC FINANCE SYNTHESIS IN THE MODERN WORLD

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ABSTRACT

The article discusses the economic prerequisites for the effective growth of Islamic finance in modern conditions, analyzes the existing definitions of Islamic finance and banking and financial technologies, which served as the basis for the formation of a new definition of digital Islamic banking.

The authors carried out a simulation of the influence of the FinTech industry on the development of Islamic finance and formed the basic prerequisites for further sustainable growth in this area. The new theoretical definition is a synthesis of two systems that can be used later to identify digital tools that can be applied within the framework of Islamic finance. No less important in this aspect is the preservation of Sharia norms.

The modeling becomes an evidence base for the further use and expansion of Fintech tools in Islamic banking and Islamic finance in general. This aspect is also confirmed by the development of the Islamic Fintech Ecosystem and Islamic Fintech companies.

KEYWORDS

Islamic finance, Islamic banking, Financial technologies, Fintech, Economic and mathematical modeling, Digitalization, Islamic fintech, Digital islamic banking.

1. INTRODUCTION

Today, the development of Islamic finance, expands the possibilities of the financial interrelationship between participants at the world level, and not only within the framework of the Islamic world. Nowadays, the rapid development of digital technologies within the pecuniary section actualizes the use of new tools in the countries of the Islamic world (Demyanova, 2017).

Today FinTech is gaining momentum in such areas as online lending, money transfers, credit ratings, crowdfunding, blockchain and cryptocurrency. In addition, some companies develop robot consultants who can offer solutions for deposits and lending, based on the wishes of customers, and taking into account all kinds of risks (Li *et al.*, 2009).

For this purpose, this economic model was designed at define the strike of the development of pecuniary technologies upon the volume of Islamic finance (Bulatova, Zakhmatovm, Aliakberova, & Koczar, 2016).

2. METHODOLOGY

The article provides a structural-dynamic analysis of GDP for the four countries and Dow Jones to determine more efficient cheap pickup into the nations of the Islamic world. qua in short of the lysis, the maners of correlation and regression analysis were applied in order to build a forecast of Islamic banking assets with the influence of financial technology factors on it (Fintech). The following methods were also used: statistical, graphical methods of analysis, tabulation, generalization and systematization, as well as methods of scientific knowledge.

3. RESULTS AND DISCUSSION

In the context of global financial and geopolitical instability, a constant uncontrolled flow of capital between financial markets caused by speculative actions, factors arise to slow down the development of the national and world economy, such as price instability, high cost of borrowed funds, and inefficient redistribution of monetary resources (Patruti-Baltes, 2016).

In 2014–2018, despite the economic crisis in general, it is observed that in short of the reduction into petroleum values, not only the growth of assets of banks in the Islamic world, but also profitability is declining, which leads to a potential merger or takeover of financial institutions. However, to continue confronting crisis situations Islamic financial institutions need to turn to innovations and modern technologies used in the financial world (Jamaldeen, n.d.).

Most oil-producing countries have a stable legal structure that allows for the effective use of Islamic banking structures alongside traditional institutions. If the broader banking sector suffers from lower oil prices, it is expected that policies of both legal and regulatory nature will be formulated for the banking sector and not just for ordinary or Islamic banks. On the other hand, Islamic banks are inherently risk-averse. Given their ban on gambling, uncertainty and speculation, they are perhaps better protected to protect themselves from high risks and unstable investments (Islami Bank Bangladesh Limited, n.d.; Bloomberg, 2019; Lim, 2019).

While the Islamic finance sector shows a more stable performance during crisis turmoil in the global financial market in the GDP growth rate at constant prices in comparison to leading economies of the world (Figure 1).

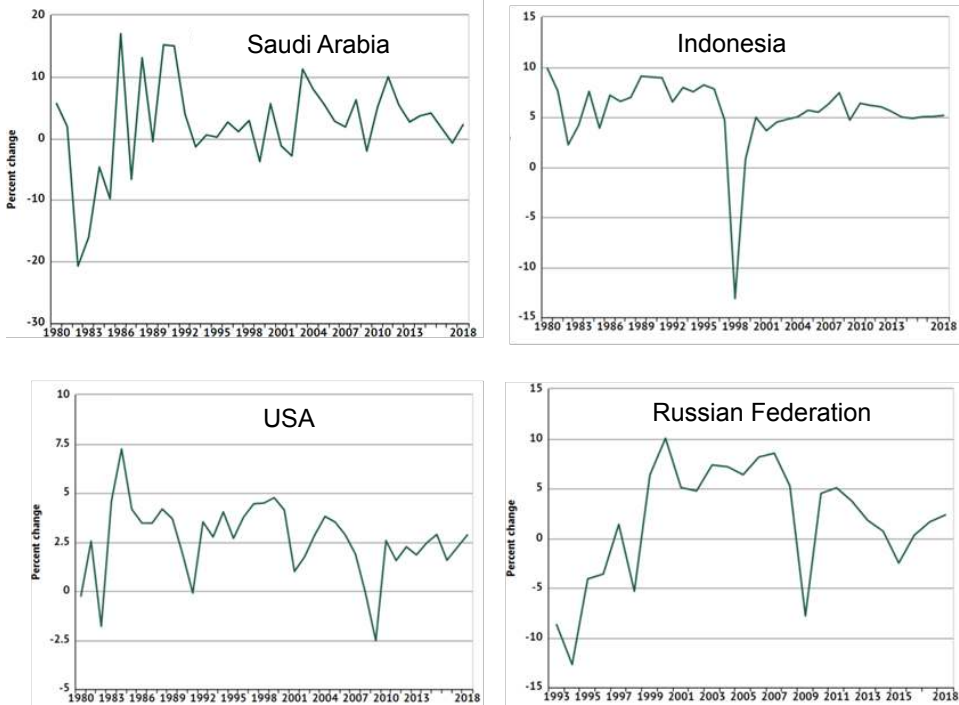


Figure 1. Comparison of GDP of countries in the world. **Source:** (World Data Atlas, n.d.)

In addition, the GDP growth rate showed positive dynamics, the index of Dow Jones from the Islamic world than USA rate (Figure 2).

Comparative characteristics of the Dow Jones indexes of the United States of America and the Islamic world showed that:

- The Dow Jones USA index for 10 years rose by 8.83%
- The Dow Jones Islamic Market index rose by 16.47 in 10 years %.

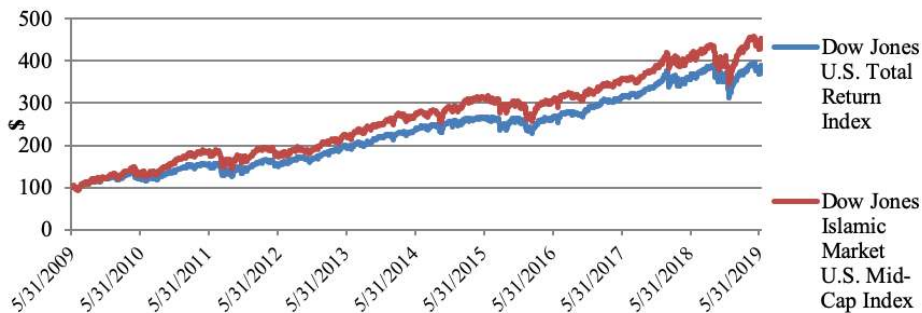


Figure 2. Comparison of the Dow Jones indices of the USA and the Islamic world. **Source:** (S&P Dow Jones Indices, n.d.).

This structural-dynamic analysis shows a more sustainable growth of Islamic finance in comparison with western countries. Thus, an important aspect of the budgetary extension of the nations of the Islamic universe may be the efficacy of digital tools in the industry FinTech.

There are different interpretations in the definition of financial, technology and Islamic finance, the main of which are presented in Table 1.

Table 1. The financial technologies and Islamic finance definitions and interpretation.

Definition	Interpretation	Supporters of interpretation
Financial Technology (FinTech)	Digital innovative financial services solutions provided and used by companies on a technology platform, competing / cooperating with financial institutions.	E.A. Demianova
	It is strangely surprising how academic literature has neglected the field despite the marvelous impact of fiscal technology on the fiscal favors industry.	Shim and Shin, 2016
	It is driven by variations in the ecosystem and contesting structure of favors and the transformation of craft running, fiscal technology.	Deloitte, 2016

Definition	Interpretation	Supporters of interpretation
Islamic finance	An ethical financial and investment sector serving the needs of the real economy, which are based on the principles of legality, justice, equality and distribution. The basic economic principle is a ban on usury	E. A. Baydaulet
	Islamic banking - The financial order, graded on the origins of Islamic law and ushered by Islamic economics, is called non-profit banking.	Sandra Lim
	It is Shari'a law that specifies how to finance it, which is a financial system.	Faleel Jamaldeen
Islamic banking	Adherence to the Shari'a can create a kind of Islamic banking system that can be used to develop financial resources through its feasible usage through the Islamic economy.	ING GROUP, 2017
Islamic banking	Islamic Banking With the ethics of the Islamic value system, essentially a normative concept is also described as overseas banking.	Dr. Ziauddin Ahmed
	Islamic banking is a finance management system that is based on the Islamic rules	Junaid Akhtar Abbasi
Digitalization	Digitizing comparability data encryption and encryption is called digitalization, which allows computers to supply, procedure, and broadcast such data.	Jason Bloomberg
	With the integration of digital technologies everything that can be digitized can be termed digital.	Mohamed El-Shimy

Presents interpretations reveal the essence of Islamic finance and financial technologies as two unrelated directions. However, with the development and application of tools for the FinTech industry in the Islamic world is important for the formation of this definition, such as digital Islamic banking.

Digital Islamic banking is a technology of providing Islamic banking products and services through online services using tools FinTech industry.

An important aspect of the formation of the new definition is a close relationship between Islamic finance and Islamic banking since banks are an important element of the financial system.

Considering the influx of FinTech industry invoices upon the enlargement of Islamic banking as an element of the financial system, economic and mathematical modeling was carried out. The indicators to be modeled are presented in Table 2.

Table 2. Input data for modulation.

Years	Islamic Banking Assets (Billion USD)	Total investment activity in FinTech (Capital invested (\$B))	Total investment activity in FinTech (Deal count)	Global venture capital activity in FinTech with corporate participation (Capital invested (\$B))	Global venture capital activity in FinTech with corporate participation (Deal count)	Global private investment in blockchain & cryptocurrency (Capital invested (\$B))	Global private investment in blockchain & cryptocurrency (Deal count)
	Y	X1	X2	X3	X4	X5	X6
2013	1565	18,9	1,132	0,8	102	0,2	69
2014	1445	45,4	1,543	2,5	137	0,7	144
2015	1604	67,1	1,925	8,5	225	0,5	134
2016	1675	63,4	1,893	11,6	287	0,6	159
2017	1721	50,8	2,165	10,3	327	4,8	218
2018*	1809	111,8	2,196	23,1	357	4,5	494

Source: (Pollari & Ruddenklau, 2018).

Initially, a correlation matrix is created to specify the grade of penetration of the selected X on the studied Y (Table 3).

Table 3. Correlation matrix.

	Y	X1	X2	X3	X4	X5	X6
Y	1						
X1	0,704093	1					
X2	0,755271	0,793208	1				
X3	0,886938	0,946588	0,827307	1			
X4	0,902747	0,786041	0,949344	0,900661	1		
X5	0,758852	0,546898	0,740252	0,696453	0,787007	1	
X6	0,761314	0,893595	0,695939	0,924876	0,758369	0,774287	1

The correlation matrix shows the level of influence of the selected factors on the object of study. According to it, the factors X1-X6 have the values of the correlation coefficients greater than 0.5 and are accepted for the study, however, among them, there is a multi-linearity above 0.7. So, by correlation, multi-

linearity observed in X1 with all factors except X5. For expediency of carrying out further modeling, X5 is accepted to the regression analysis as not correlating with X1 and X4, as an indicator with the greatest correlation with Y.

The conducted regression analysis showed that almost 82,11% of Islamic Banking Assets depends on the formation and change of X4 and X5 values (Table 4). Fisher statistics characterize the significance of the regression model.

Table 4. Regression analysis of the economic model.

Regression Statistics	
Plural R	0,906147
R-squared	0,821103
Normalized R-squared	0,701839
Standard error	69,65298
Observations	6

Variance analysis

	df	SS	MS	F	Significance F
Regression	2	66803,02	33401,51	6,884726	0,075666
Remainder	3	14554,61	4851,538		
Total	5	81357,63			
	Coefficients	Standard error	t-statistic		
Y- intersection	1385,277	91,09195	15,20746		
X4	0,991345	0,488836	2,027968		
X5	7,536152	23,46571	0,321156		

To forecast the value of Islamic banking assets, the regression equation (Formula 1):

$$Y=1385,277+0,9914*X4+7,5362*X5 \quad (1)$$

After conducting a point forecast X4 and X5 and adding connected values in the regression equation (Formula 1), a forecast of the value of Islamic Banking Assets was made if it would be influenced only by X4 and X5. The point forecast is carried out through the determination of the trend line for each of the factors

X4 and X5 for 1 forward forecast period with the conclusion of the regression equation. The forecast period number is supplied instead of the unknown X value.

Further, according to Formula 1, instead of the unknown X4 and X5, their predicted values for 2019-2021 are added to calculate the value of Y (Figure 3).

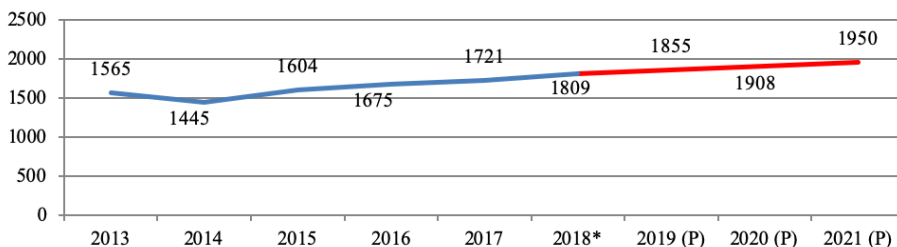


Figure 3. Forecast volume of Islamic Banking Assets the influence of factors X4 and X5, billion USD.

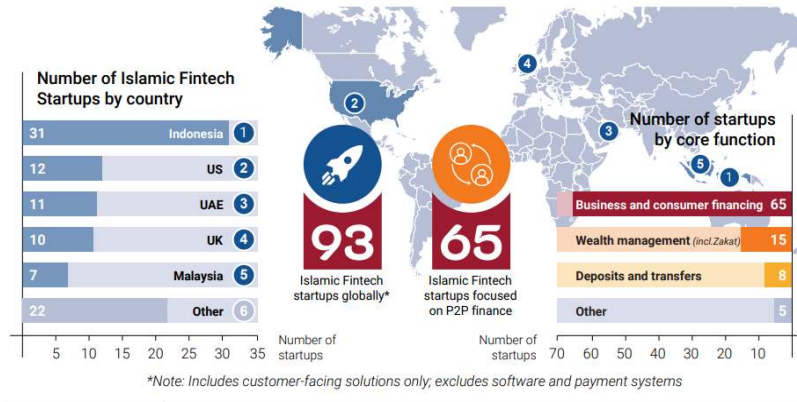
Thus, the impact on the Islamic banking Assets indicators such as global venture capital activity in FinTech with corporate participation (Deal count) (X4) and global private investment in blockchain & cryptocurrency (Capital invested (\$B)) (X5) by 2021, may lead to an increase in the indicator to almost \$ 2 trillion.

An important aspect of the analysis is that Islamic banks are in a better position than traditional banks because they are a rapidly developing area of Islamic Finance. With enough investment in financial system participants in FinTech, can lead to more significant growth of the economy as a whole.

The most promising are such tools as crowdfunding, P2P lending, and digital technology management. The only factor that distinguishes the usual FinTech from the Islamic one is the need to observe the principles of Sharia.

Using the experience of upgrading existing financial instruments into products such as Murabaha and Musharaka that meet Sharia standards, it becomes possible to apply a similar approach to FinTech instruments. Combining safe investment and social responsibility with innovation and efficient use of available tools, Islamic Finance can use any modern financial instruments and use them effectively.

For example, Islamic fiscal technology has solved astonishingly, with the appearing universal Islamic fiscal technology order fireplace stiffly on P2P financing. There is a basilar fireplace on peer-to-peer financing to address the remonstrative demand for making Shariah-compliant financing more available for commerce and consumers, but many slots stay self-relative to demand and market potential.



Key takeaway: There is an emerging global Islamic Fintech ecosystem, with a strong focus to date on P2P finance.

Figure 4. Islamic FinTech Ecosystem. **Source:** (Islamic Fintech Report, 2018).

4. CONCLUSION

The previously described model of the influence of FinTech factors on Islamic banking Assets is proved in practice. To date, there are already dualistic companies that use FinTech and Islamic Finance at the same time (Table 5) (Firmansyah & Anwar, 2019).

For example, InvestProperti.id is a sharia crowdfunding platform in Indonesia focusing on property investment. The vision of this firm is to provide ease to everyone to invest in property. With a tiny number of employees, since its establishment, InvestProperti.id is progressive as it has served 189 customers.

Table 5. The profile of participating Islamic FinTech firms.

No	Name of the Fintech firm	Headquarter	The services provided	Year of establishment	Number of employees	Number of customers
1	InvesProperti.id (PT. Berkah Inovasi Nusantara 2018)	Indonesia	Crowdfunding platform to make property investment accessible to everyone	2018	3	189
2	GOOLIVE (PT Sinergi Inti Berkah Investama)	Indonesia	Peer to peer lending	2018	5	67
3	ALAMI Teknologi Sharia	Indonesia	Other financial services (Fintech Aggregator)	2017	9	9
4	Syarfi (PT Syarfi Teknologi Finansial)	Indonesia	Peer to peer lending	2017	6	
5	Qasir (PT Solusi Teknologi Niaga)	Indonesia	Application of Point of Sales (PoS)	2015	44	5,000
6	EthisCrowd (Ethis Pte Ltd)	Singapore	Real estate investment	2015	15	25,000

Source: (Firmansyah & Anwar, 2019).

Despite the slowdown in economic growth due to falling oil prices, the Islamic financial industry continues to evolve and strive for the same indicators. This is facilitated by “revolutionary” financial technology. The use of FinTech tools allows us to stimulate the economic growth of all countries of the world and not just Islamic ones.

On this basis, a new theoretical definition was formed, combining both aspects of the digital economy and Islamic finance. With the further formation of new tools that meet Shariah standards, but which are FinTech tools, the new conceptual apparatus can serve as a basis for a more precise definition of certain aspects of the Islamic FinTech industry.

The relevance of the application and development of the FinTech industry in the Islamic world is confirmed by the economic model of the forecast of Islamic banking assets when it is influenced by digital technology factors. This model also proves the development of dualistic companies combining FinTech and Islamic finance, as well as the rapid development of the Islamic FinTech Ecosystem.

5. ACKNOWLEDGEMENTS

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