

THE ISLAMIC FINANCE AS AN ALTERNATIVE FOR THE CREDIT EASING

STUDY OF THE ISLAMIC FINANCE ABILITY TO INTEGRATE THE PARALLEL MARKET SAVING INTO THE BANKING SYSTEM

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Received: 23/04/2021

Accepted: 22/05/2021

Published:20/07/2021

Abstract :

Our objective from this paper, is to **measure the ability of the islamic financial institutions to integrate the parallel market's economies into the banking system**, as a tool to rebalance the balance sheet, and solve the deficit crisis of the national treasury, which is expected to rise to 3264.42 billion da representing 17.6% of the GDP, who led the government to the unconventional financing as a first primary solutions, from 2017 to 2019 after the run-out of the national monetary reserves, like the revenue regulation fund, and the drop of the national total revenue by 43%, and the exchange reserve by 79.2%, and it's expected to opt to another techniques like the credit easing with the use of the articles 53 of the money and credit law, and the 17-03 regulation of the monetary policy and it's tools and process.

The central bank issued the 20-02 regulation that recognize the Islamic finance, followed by the 2020-03 instructions defining and fixing the modalities of its implementation, to achieve that goal, but measuring the response of the agents of the parallel market, before and after the regulation, they collect around 6,3% of the size of the market from 2014 to 2018, and 1.63% one year after, we realise that this institutions actually are not capable for been major solution to the crisis, from their contributions to the budget with only 6,8 billion dinars as taxes from 2014 to 2018, far from the contributions of the traditional banks in Algeria.

This poor reaction is actually due to the poor study of the nature of of the parallel market who doesn't want to inject its economies into the banking system for lucrative reasons.

Key words : Islamic finance, unconventional financing, balance sheet, credit easing.

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Introduction :

After the fail of the non-conventional financing options to finance the deficit of the national treasury, especially that the from the beginning of the operation until it end the deficit raised from 1.297 billion da in mid 2017 (6.7% of the GDP) to 3614 billion da in late 2021 (16.7% of the GDP), because of the way it was applied by the government, which is was a financing of unproductive expenditures, that contribute to the rise of the treasury deficit and the improvement of the dynamism of the economic growth.

Now the government to finance the deficit they opt for new kind of financing “ the credit easing “, by activating the 53th article of the credit and money law, and the 17-03 regulation relating to operations, instruments and procedures with respect to monetary policy, which is a new form of the old non-conventional financing, which proved its limits.

To rebalance the balance sheet we needs to rationalize our expenditures and rise our revenues, without effecting the power purchase of the citizen (in the way the government devaluate the national currency to rise the dividends of the central bank) to opt for the credit easing and the main refinancing operation), one of these solutions, the integration of the parallel market savings, and one of the tools to facilitate is integration, is the rise of the Islamic finance, with the focus on the households savings, this category is the most attracted to invest it economies in the non-interest lending (Sharia Compliant) institutions, this category according to the central bank in mid 2018 had from 1500 to 2000 billion da saved representing from 24.56% to 32.375% of the parallel market.

For that the monetary authority tried to reform the Islamic finance with the new 20-02 regulation that recognized for the first time the Islamic finance, especially with the application of it articles (with the activation of the Islamic windows at the level of the traditional public banks, and the establishing of the high national Charaic committee that oversee the process of the approval any activity in the Islamic finance, and the 2020-03 instructions to regulate the process of the application of the nine recognized products).

But according to the Findex 2017 research about the unbanked population due to religious reasons in which they conclude that only 5% of Algerians are unbanked due to the absence of a coherent Islamic finance, meaning that the Islamic banking could face a real challenges if we base our strategy of the national financial inclusion on it, to in the end realise the balance in the balance sheet, and that is the problematic of our paper, **could the the islamic finance solve the deficit crisis of the treasury ? and how to do so ?**, and for this problem, we need to answer other questions, ramifies from the major problematic :

- ✓ What is the ramifications of the unconventional financing on the Algerian economy ?
- ✓ What is the contributions of the Islamic finance into the Algerian economy ?
- ✓ What’s the public response to the new reforms (reg 20-02) of the Islamic finance ?

The answers this problematic we need to put hypotheses as a base of our research:

Hypothesis 01: the integration of the parallel market could raise the efficiency of the banking sector to finance the economy.

Hypothesis 02: the new reforms will rise the Islamic banks ability to realise a full national financial inclusion.

1- The credit easing as a tool to finance the budget deficit:

Before we present the technical aspect of the credit easing we must first, present the Algerian experience with the quantitative easing (or the non-conventional financing), and the way it was applied and what is the effect it had on the economy.

According to the authorities at that time the quantitative easing was the last solution to finance the treasury deficit , especially that from mid 2014 the world fall in a hydrocarbons prices crisis caused by the rise of the US shall production, and that led rent economy countries to lose a high percentage of its revenues, like our country, in which the hydrocarbons represents 94.45% of its exportations (direction, 2013) and lost 43.79% of its general revenue and 63.82% of the its reserve of the exchange until mid 2019, and the national balance sheet, start to accumulate the deficit, starting from 2015 with a deficit of 3.466,8 billion da, than a deficit of 3.236,75 billion da in 2016 financial Act, to deficit of 1.247,7 billion dinars in the 2017 financial act (N°77, 2016), and that's caused by the drops of the petroleum fiscality revenue from 1.722,94 billion to 1.682,55 billion in 2016 balance, and that rised the treasury deficit to 1.440 billion da in early 2016 (7.43 % of the gdp).

To finance this deficit the government had the revenue regulation fund (FRR in french), knowing it peak in 2013 with 7.917.012 billion dollars, dropped in the first year of the crisis from 7.695 billion dinars to 4.408 billion dinars in late 2014, than to 2.027 billion in late 2015, to 740 billion in late 2016, and run-out of it resources by February 2017, that in late 2019 raised to 305 billion da according to the 2020 action plan of the government.

the government needs to find other solutions to cover the huge deficit of the treasury, so they opted for the state bond (bond loan) with 5% interest rate for 5 years period, and 4.7% interest rate for 3 years period, an operation who couldn't collect more than 568 billion dinars (10.44% of the M2 outside the banking system).

For all this reasons, the government ratified the new law N°17-10 in October 2017, which she reform the article 45 of the order N°03/11 of the credit and money (issued in 26 august 2003), and bu that it will allow the central bank to buy obligation from the national treasury (treasury Bond) for a period of 5 years, the legislator clarified the motives to opt for the non-conventional financing in 4 points :

- 1- Finance the deficit of the treasury.
- 2- Finance the interior public debt.
- 3- Finance the national investment fund (FNI)
- 4- Accompaniment of the national economic and budget reform in which push to balance the national treasury and the balance of payments. (bank t. c., 2017)

And according to the monetary authority this is why this type of financing is unconventional to the central bank rules of lending and treatment with other financial and economic institutions:

- According to article 46 of the 03/11 order the central bank also lend the treasury by open an overdraft for it, but with a limit of 10% of the total normal fiscal revenues without the petroleum fiscality of the country in the balance sheet of the past year, and that mean that the debt ceiling is 343.53 billion da in 2017.
- The reform give permission to the central bank to buy the treasury bond from the primary market, and has the liberty to buy low quality bond, and by that it can buy treasury

bond even it's risky, before that the central bank can only by the treasury bond from the secondary market, and get the good quality.

But the dilemma here is while the central bank is allowed to buy assets with high risk value, who guarantee the dues, especially in the case of the treasury who will continue to have a deficit in the next few years, according to the ministry of finance from 2020 until 2022 the treasury will have a 6654 billion da deficits, and that mean at the end of the operation late 2022, the treasury won't be capable of paying it debt, and that what happen, because at the end of 2021 the treasury deficit will rise to 3264 billion da.

And also according to the central bank april 2019 report, this options was avoidable from the beginning, because the C.B had other solution to finance the deficit of the treasury, without printing money, and had other options to stimulate the economy, encourage the lending and lure the market with liquidity, with a total masse of 1600 billion da in 2017 (657 billion da as open market and rediscount operations, 920 billion da as treasury dividends), even if this amount won't cover the totality of the deficit but at least the use of it will reduce the negative effect on the economy.

1-1 The Realisation of the unconventional financing :

According to the same report, the central bank from mid November 2017, to late 2019 issued about 6556.2 billion da, with is order :

- 1- 2.470 billion da, with an objective to finance the treasury deficit from 2017, until 2019.
- 2- 1.813 billion da, to reimburse the treasury debt toward major national companies like **Sonatrach** and **Sonalgaz**, and to finance the reimbursement of the obligatory lending for growth.
- 3- 500 billion da to fund **the national retirement fund** (NRF or CNR in French), by that it will be able to refinance it debt toward **the national fund for social insurance of salaried employees** (NFIS or CNAS in French).
- 4- 1.773,2 billion da to finance the national investments fund (NIF or FNI in French), allowing him to be able to finance **the national agency of housing improvement and development AADL** in French), and other structuring projects. (bank t. c., the situation update of the unconventional financing, 2019)

In late January 2019, a total of 3114.4 billion Da had been lured in the economy and to finance the treasury debt, however the rest of the total 6556.2 billion still frozen in the treasury account at the central bank by an amount of 945.1 billion da, and 656.7 billion da still blocked in the FNI account at the treasury, waiting for it use, and the rest of it by the amount of 1.830 billion da, will be sterilized at the central bank by its instruments.

And in October 2019, the minister of finance “ Mohamed Loukal “, had noticed that only 610,7 billion da from the total amount is still available, meaning that 5.945,5 billion da had been used, 2.470 billion da from it in the finance of the treasury deficit, 2.313 billion da to reimburse the treasury debt toward major national companies like Sonatrach (904 billion da), and Sonalgaz (545 billion da), 264 billion da has goon to reimburse the national lending for growth (the loan bond), and 500 billion da used to reimburse the NRF.

And 1.773,2 billion da used to finance the NIF, to allow this later to finance different investment institutions like the national agency for housing development and improvement,

with 948 billion da, and 364 billion da to partially finance the N.R.F. (service, the algerian press agency, 01)

the central bank order this follow operations to absorb the liquidity surplus in the market, to keep the level of the prices stable, and don't lose control of the value of the dinars:

- Short terms deposits (7 days terms) starting by january the 8th 2019, the interbank rate oscillate at 2.5%, lower than the director rate which is 3.5%. (bank t. c., The conduct of the monetary politic, 2019)
- Rise of the obligatory reserve rate from 4% to 8% by 15 january 2018, because of the rise of the liquidity surplus in the market in only 7 month with 168 billion da, jumping from 1482 billion da, during the second quarter of 2018, to 1650 billion da in July 2019, and for that the central bank planned a strategy to keep the obligatory reserve at an amount of 1016 billion da, after that they raised the obligatory reserves to 10% by 22 may 2018, to reduce the commercial banks ability to finance the economy, than in February the 6th 2019 they raised it to 12% caused by the rise of the banking liquidity to in the market with 2000 billion da.

By the end of the unconventional financing, all this autonomous liquidity factors had generate around 1.000 billion da.

2- The application of the credit easing to finance the treasury deficit:

According to the minister of finance in December 2020, the government will never opt for the quantitative easing, for it negative effect on the economy equilibrium, by activating the 53th articles of the 03-11 order relating to the money and credit.

The difference between the quantitative and the credit easing, although both credit easing and quantitative easing are unconventional monetary policy tools, used by the central bank in the times of financial stress, they are different in the assets used and process.

The quantitative easing is the process in which the central bank purchases longer-term securities, from the open market in order to increase the money supply and encourage lending and investment, and by buying these securities adds new money to the economy, and also serves to lower interest rates by bidding-up fixed-income economy, and also has the role of the credit easing, but with the difference, that this later focus on the quality of the bank reserves, which are liabilities of the central bank, and the compositions of loans and securities on the assets side of the central bank balance sheet is incidental (according to BEN BERNANKE the chairman of the board of governors of the us federal reserve from 2006 to 2014), where the quantitative focus on the liability side of the bank.

The credit easing is not new in the Algerian monetary market, it was applied in September 2017, in a 6 months placements of 300 billion da, and that time and according to the 53th article of the 03-11 order, the central bank could invest it regulatory equity capital on:

- 1- Securities issued or guaranteed by the state.
- 2- Financing operation of national or social interest.
- 3- Securities issued by financial organism, which is governed by specific legal provisions, and after the authorization of the ministry of finance.
- 4- Buildings, in case the central bank had the needs to acquire, build, sell or exchange it, this operation also must be authorized by the money and credit council.

But with the condition that the second and the third investments won't exceed 40% of the regulatory equity capital, only with the authorization of the money and credit council. (bank t. c., the 03-11 order relating to the money and credit, 2003)

The second tool to finance the treasury deficit is the use of the 17-03 regulation amending and supplanting the 09-02 regulation relating to the operations, instruments, and procedures with respect to monetary policy.

Reforming the articles 06 and 07 of the old regulation (09-02) by adding two types to the government paper issued or guaranteed by the state tradable on any market, and eligible for the monetary policy operations, this papers are:

- 1- Dematerialized securities, representing the national loans, issued or guaranteed by the state.
- 2- Treasury securities representative of purchase of bank's claims on customers.

And the regulation notified the fact that the outstanding amount of the government paper shall be set according to monetary policy objectives.

The regulation also reformed the article 07 of the old regulation, by adding to the non-marketable private papers, admissible for temporary purchase and sale in monetary policy operations with the maturity date exceeding that the temporary purchase and sale, two other kind of papers:

- 1- Medium term credits concerning the financing of investment for the development of means of productions (creation, extension, or renewal of equipment), the export of goods (pre-financing of export orders), the construction of housing under real estate development projects and leasing operations of capital goods with call options.
- 2- Long term credits for the financing of investments related to construction and equipments of production units of goods and services.

They add the second kind of the government paper to use the toxic assets of the commercial bank as tool to finance the treasury bill, first the treasury will purchase the bank claims on its customers by its securities, that the banks will refinance those securities at the level of the central bank (with the open market ops), gaining liquidity, and with this liquidity acquired the bank will finance the treasury deficit. (bank t. c., REGULATION 17-03 , AMENDING AND SUPPLEMENTING REGULATION 09-02 OF MAY 26TH, RELATING TO OPERATIONS, INSTRUMENTS, AND PROCEDURES WITH RESPECT TO MONETARY POLICY, 2017)

3- The consequences of the unconventional-financing tools :

According to ministry of finance that the monetary mass knew a 37.31% growth in august 2019 compared to December 2018 especially the banking liquidity, rising from 1557 billion da in 31/12/2018 to 1705.5 billion da in 31/08/2019, and even with the application of 12% rate of the obligatory reserve, the banks have the sovereignty to refinance with the operations of the open Market, but this growth is lower than last year growth, with 68.2%

growth in late 2017, caused by the obligatory reserve from 8% to 4%, and the start of the quantitative easing rising the banking liquidity from 821 billion da to 1380.6 billion da.

Because of the unconventional financing, the state loans growth with a 35.75% moving from 4691.9 billion in late 2017, to 6392.2 billion da in late 2018 (1.222,9 billion of this growth were loans to the economy), 48.6% of this loans goes to the private sector which 7.8% to the household), 50.4% goes to the public sector.

According to the central bank the loans to the public sector grew with 18.1% from late 2017 late 2018 (from 4.311,3 da to 5.990,4 billion da), and a growth with 9.7% in loans to the private sector in the same era (from 4.568,3 billion to 5012 billion da), in which the household benefits from a growth of 19.9%, moving from 656.7 billion da to 787.2 billion da in late December 2018).

All that is caused by the rise of the central bank net payable accounts at the national treasury from 1.967,4 billion da to 3.857,8 billion da in late 2018.

The hydrocarbons sector banking deposits grew to 1.575,2 billion dollars from 991 million dollars from late 2017 to late 2018, due to the finance of the central bank to the treasury, with 1.813,4 billion da to finance it debt toward the national companies (like Sonatrach with 452 billion da in 2018) (service, 2018).

In 13 October 2019, the Algerian parliament pass the finance act of 2020, in which it indicate that in this fiscal year the budget will have a deficit with around 1.533,7 billion da, even after a long rationalization of the expenditures, with 784 billion da difference (from 8.557 billion da in 2019 act, to 7.773 billion in 2020 act), but also the revenues plunged from 6.508 billion da last year, to 6.239,7 billion da this year, due to the drop of the Petroleum fiscality from 2.714 billion da last year to 2.200,3 billion da this year.

And according to the ministry of finance, the national treasury deficit will continue with a total of 6.654 billion dinars from 2020 to 2022, and that mean that the national treasury won't be able to pay the central banks, and that because the financing was toward a non-productive expenditures, during this operation the central bank finance :

- The CNR (retirement national fund) and the treasury debt toward other major national companies and the CNAS (**the nationale fund for sociale insurance of salaried employees**) .
- The FNI to be able to finance the AADL « **the national agency of housing improvement and development** » housing project.

So the major mass of the finance go to pay public sector employees and retirement fees, and quasi-social program like the AADL.

3-1 The effect of the national debt :

In late 2015, the national debt was about 8.8% of the GDP, than raised to 21% in late 2016, with a projection to be reduced to 18.3% of the GDP by late 2017 and a small growth with a 19.3% of the gdp by late 2018.

So we can't blame the rise of the national debt in Algeria on the unconventional financing, and that what the world Factbook had confirmed, that the national debt raised to 27.5% of the GDP just before the start of the operation (factbaak, 2017), than to 36% of the GDP in

late 2018, and even that the authorities in 2017 projected be reduce the public debt with the drop of the national treasury deficit at the end of the financing process in late 2022, but according to the ministry of finance the deficit of the treasury will grew with 3264 billion late 2021.

3-2 The effect on the inflation :

The unconventional financing is issuing money without it counterpart in the market, and with this types of operation we lure the market with 6.856.2 billion da (from the quantitative and credit easing) without any equivalent of service and goods in the market, and put the inflation rate declared by the authority has no credibility, especially with declaration of the central bank that the inflation rate (based on the consumer price index) had dropped in the period of the application of the financing from 5.59% in late 2017 to 3.1% in mid 2019.

And for the national currency lost 9.87% of its value toward the euro from late 2017 to late 2018, and that in the official courts, who we know it's controlled by the state, in the parallel market in which the value of the dinars will be a subject to only the rule of offer and demand

The national currency lost around 40% of its value toward the euro, and that what had a negative impact on the product imported or produce inside with imported equipments

That only could raise the rate of inflation, especially for the goods imported from the European Union and the US.

4- The new reforms on the Islamic financial sector in Algeria:

in the 04th of November 2018, the central bank tried to regulate the non-interest financial sector or what it called it “ the participatory banking “ with the 18-02 regulation, this later aims to attract the parallel market saving, after the fail of bond loan (who only attract 568 billion da, representing only 10.44% of the monetary masse outside the banking system) (centrale, 2021), and they opt for the unconventional financing to reimburse the holder of the bonds).

The problem with this regulation is there isn't a real application of it articles, the national authority legally eligible to grant the licence to any financial institutions want to treat with Islamic products, it has not established until the issuance of the new regulation in march 2020.

And there isn't any regulation of the sharia auditing, making it easier for the Islamic financial institutions to deal with the sharia control systems, in matters of compliance of it operations with the rules and dispositions of the sharia law, (this is a contradiction in the regulation, in the way that if we assume that the objective of this regulation is to recognize the participatory finance and regulate it market, and reformed its dispositions and regulations that pushed those institutions to commit violations on its operations, and deviate from the sharia terms and dispositions (especially the transaction jurisprudence), and the

key to that is the regulation of sharia auditing, and given it the legal power to execute its operations.

Of the most important articles that wasn't applied is the participatory windows at the level of the traditional banks, true that the articles from 5 to 7 regulates the statue of those windows, but no one windows was open, until the issuance of the new regulation (20-02) in march 2020, starting by the ANB.

Opening participatory windows will be very important to facilitate the financial migration, for those who have banking account in traditional banks, and treat with its products, but if they have the appropriate Islamic alternative, they will switch to it without cutting these relations with the banks, or those who have accounts on it levels, but its compulsory (as an employee or owning a business or benefiting from a governmental financial support program).

And according to the president of the republic after the opening of the Islamic windows at the level of the traditional bank, it collects 1 billion DA in only one month, which is a very encouraging sign.

4-1 The effect of the regulation 18-02 on the Algerian Banking sector:

Before we measure the effect of the old regulation on the Algerian Islamic banking, we need to measure the growth of the sector before the regulation.

4-1-1 The development of A-SALAM BANK activities before the regulation:

A-Salam Bank was a the brink of bankruptcy in 2011, because of the severe liquidation crisis, but after the intervention of the central bank the bank now realise high growth rates on it activities.

Table 01: A-Salam-Bank activities in 2014-2018 period:

Units: million da.

The financial year	The deposits	The financing	The taxes paid
2013	23932	28774	495.34
2014	32500	22548.5	383.962
2015	30120	21268.2	176.023
2016	34512	29377	425.3
2017	64261	45454	446.639
2018	85431	75340	917.951

Source: a-salam bank, (2013 – 2018) the annual reports.

Using the e-views 10 program, first we discover that the series are non-stationary (both for the deposits and the total taxes paid) using the Phillips-Perron test.

The probability of the deposits series is 0.9983 which is bigger than 0.05, which means it is non-stationary, and the probability of the total taxes series is 0.81 bigger than 0.05, including in test equation “ the intercept “.

according to e-views linear regression equation, the growth of a-salam deposits follow this equation.

deposit = 11.633,42 x + 4409, noting that 2013 is the year of base, and the taxes paid growth follow the equation taxes = 72,866 x + 219,17.

The total financing to is a non-stationary serie with a p.value 0.9935, and it growth follow this equation, Financing = 8847,34 x + 6161,13, and according to the linear regression model the salam-bank deposits, and the total taxes paid, the total financing in late 2023 will grow to 132.376,62 million da, 1020,696 million da, and 103481,87 million da, respectively realising a growth rate of 54,95%, 11.19%, 37,35%, compared to 2008.

4-1-2 The effect of the 18-02 regulation on A-Salam bank:

After the issuance of the 18-02 regulation a-salam bank deposits raised to 103.792 millions da in 2019, and the financing and taxes raised respectively to 95.583 millions da and 1.444,013 millions da, realising a growth rate lower than the average rate of the past 5 years in the deposits (an average of 32.44%) realising a growth rate in 2019 of 21.49%, and a growth rate in taxes paid with 57.31% which is better than the average of the past 3 years (84.05%) and that rise only represent 0.018% of the deficit of the national treasury at the time 2.925 billion da), and for the financing the growth rate of 2019 was 26.87%, and compared to the average growth rate of the financing for the past 5 years (26.05%), we couldn't witness an improvement.

If we integrate the 2019 date to witness the effect of the 18-02 regulation we observe that the linear regression equation of the growth of the deposits will change to, **deposits = 15.775,48 x + 3.221,8**, and for the taxes to, **taxes = 215,639 x + 122,42**, and for the financing to, **Financing = 15.527 x – 6085,13**, and by this model and by the end of 2024 the deposits of a-salam will grow to 176.752,08 million da (70.29% growth rate compared to 2019), and the taxes to 2.494,449 million da (with a grow rate of 72,74%), and the financing 164.719,02 million da (with a growth rate of 72.33% compared to 2019), if we compared to growth of a-salam bank with and without the result of the 2019 activities we realise a major improvement of the bank service attractivity, but could that be explained by the intervention of the new regulation or by the bank expansion strategy especially with the bank agreement with 42 companied to benefit it employees from the bank services (especially the auto-credit rising the number of cars sold in 2019 to 7357 units, and amount of consumer credit from 3.5 billion da in 2017 to 9.3 billion da in 2018, than fall to 8.5 billion da in 2019, and the rise of the leasing operations with 25% in 2019, and all that is due to the open of new agencies in several uncovered areas like Msila and Ain-ouasara, and Annaba, where the households of this areas are more conservatives and wait for the Islamic financial alternative).

And if we observe their contributions to the treasury, with their taxes we witness a deference of 526,062 million da from 2018 to 2019 representing a 0.018% of the treasury deficit at that time.

4-1-3 Test the effect of the integration of the parallel market economies on the taxes contributions of al-Salam bank:

Like we said before one of the major objectives of the integration of the parallel market is the improvement of the economic efficiency, especially in the ability to collect revenues to the budget sheet.

We must test the ability of the salam-bank to rise the revenues of the state by measuring the effect of the rise of the deposits and the financing on the taxes paid, using the test of VAR (Vector Autoregression).

But this time we need to generate longer time series, to have an appropriate model of estimation, and for that we have the data of taxes, deposits and financing from 2011 to 2019.

Table 02: the performance of a-salam bank from 2011 to 2019

Unit: million DA

The financial year	Taxes paid	Total deposits	Total financing
2011	357.582	10438.014	13905.813
2012	440.191	16125.515	20695.161
2013	495.34	23932	28774
2014	383.962	32500	22548
2015	176.023	30120	21268
2016	425.3	34512	29377

2017	446.639	64261	45454
2018	917.951	85431	75340
2019	1444.013	103792	95583

Source: a-salam bank, (2011 – 2019) the annual reports.

After the test of Phillips-Perron we find that the new serie of taxes paid is stationary with a P.value of 0.0425, and both the financing and depostis series are non-stationary with a P.value bigger than 0.05.

Than we need to designate the lag lengh criteria, using the Akaike and Schwarz information criterion.

figure 01: the test of lag lengh criterion

VAR Lag Order Selection Criteria						
Endogenous variables: DTAXES DFINANCING DDEPOSITS						
Exogenous variables: C						
Date: 04/13/21 Time: 17:47						
Sample: 2011 2019						
Included observations: 7						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-198.4735	NA*	2.02e+21	57.56384	57.54066	57.27733
1	-186.0678	10.63343	1.21e+21*	56.59080*	56.49807*	55.44473*

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Source: e-views 10.

According to AIC and SC the lag is 1, is will help to estimate the VAR model.

Figure 02: the Vector Autoregression estimate of the influence of taxes:

Vector Autoregression Estimates			
Date: 04/13/21 Time: 18:19			
Sample (adjusted): 2013 2019			
Included observations: 7 after adjustments			
Standard errors in () & t-statistics in []			
	DTAXES	DFINANCING	DDEPOSITS
DTAXES(-1)	-1.680386 (1.51163) [-1.11164]	-12.03700 (47.1303) [-0.25540]	26.12023 (44.0861) [0.59248]
DFINANCING(-1)	0.009722 (0.03684) [0.26392]	0.596262 (1.14853) [0.51915]	0.099951 (1.07435) [0.09303]
DDEPOSITS(-1)	0.004229 (0.02302) [0.18373]	0.422956 (0.71763) [0.58938]	0.105255 (0.67128) [0.15680]
C	-38.41989 (219.550) [-0.17499]	1897.629 (6845.25) [0.27722]	8427.956 (6403.11) [1.31623]
R-squared	0.505098	0.519844	0.465035
Adj. R-squared	0.010197	0.039688	-0.069930
Sum sq. resids	460190.5	4.47E+08	3.91E+08
S.E. equation	391.6591	12211.34	11422.60
F-statistic	1.020604	1.082657	0.869282
Log likelihood	-48.75977	-72.83787	-72.37047
Akaike AIC	15.07422	21.95368	21.82013
Schwarz SC	15.04331	21.92277	21.78923
Mean dependent	-42.31114	10698.26	12523.78
S.D. dependent	393.6714	12461.12	11043.01
Determinant resid covariance (dof adj.)		3.12E+20	
Determinant resid covariance		2.46E+19	
Log likelihood		-186.0678	
Akaike information criterion		56.59080	
Schwarz criterion		56.49807	
Number of coefficients		12	

According to the model the coefficient of one period taxes lag is not significant in taxes equation nor in financing and deposits equations, and for the coefficient of one period financing lag is not significant at all, and it is the same for the coefficient of one period deposits.

We need to test if the model is sufficient to capture all the dynamics in the growth of taxes paid, and if our model is stationary.

Figure:03: Var Residual Portmanteau tests for Autocorrelation:

VAR Residual Portmanteau Tests for Autocorrelations					
Null Hypothesis: No residual autocorrelations up to lag h					
Date: 04/13/21 Time: 18:53					
Sample: 2011 2019					
Included observations: 7					
Lags	Q-Stat	Prob.*	Adj Q-Stat	Prob.*	df
1	9.526414	---	11.11415	---	---
2	14.59117	0.1028	18.20481	0.0329	9

*Test is valid only for lags larger than the VAR lag order.
df is degrees of freedom for (approximate) chi-square distribution

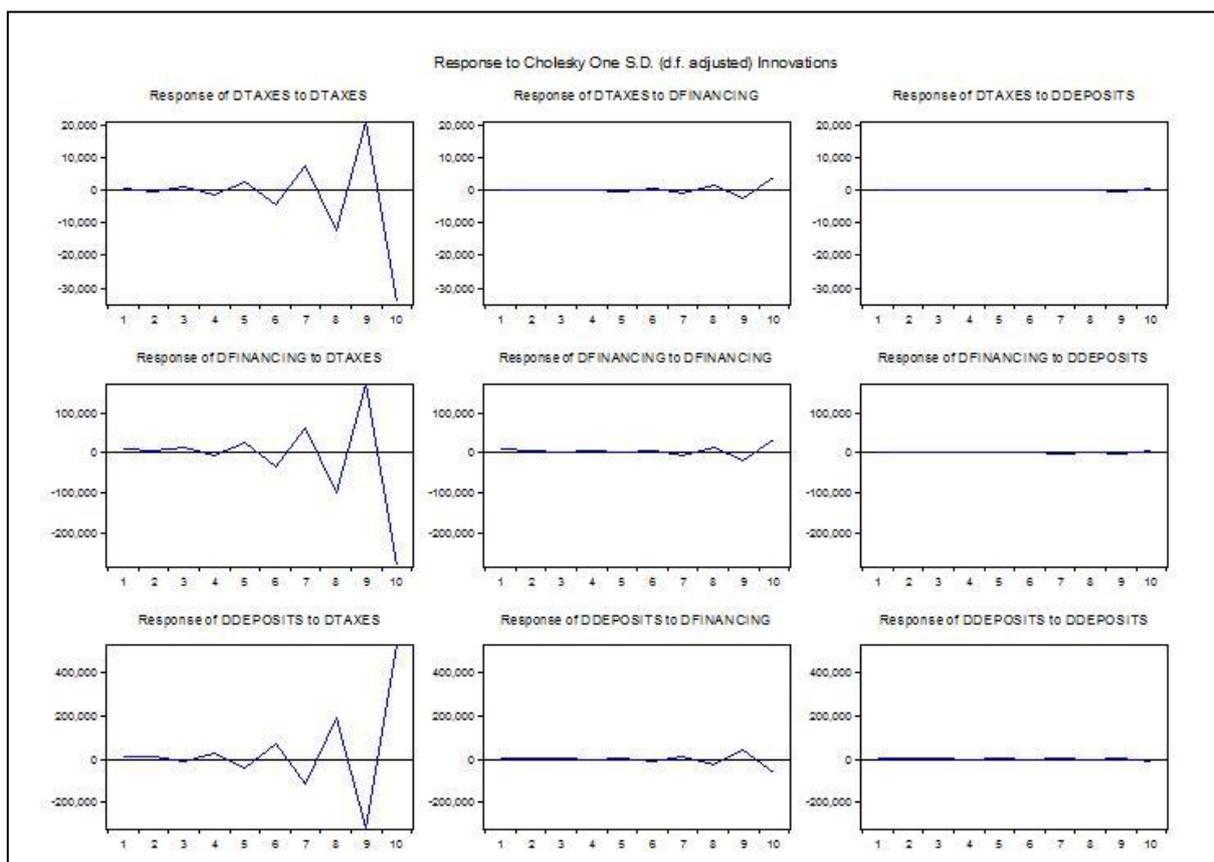
According P.value of the test the model isn't sufficient to capture all the dynamics.

Figure 04: the test of the stationary of the model

Roots of Characteristic Polynomial	
Endogenous variables: DTAXES DFINANCING DDEPOSITS	
Exogenous variables: C	
Lag specification: 1 1	
Date: 04/13/21 Time: 19:02	
Root	Modulus
-1.665316	1.665316
0.698780	0.698780
-0.012333	0.012333

Warning: At least one root outside the unit circle.
VAR does not satisfy the stability condition.

Figure 05: the response from the taxes paid to changes of the deposits and financing



If we observe the second and the third figures we observe that there is no immediate reaction of the taxes paid by the shock in the financing and the deposits (the only change that we can notice is in the 6th period for the financing shocks).

We realised that even if there is a full integration of the parallel economies by a salam-bank, the effect of on the national treasury won't be immediate, and its take a longer period to rise the revenues of the budget sheet.

4-2 The effect of the 18-02 regulation on al-Baraka activity dynamics:

We will now measure the effect of the old regulation on al-baraka bank activities, but before that we should predict its growth before the application of the regulation.

Table 03: the activities of Al-Baraka bank in the 2013-2018 period

Unit: million Da

The financial year	The deposits	The financing	Taxes paid
2013	125425	63354	1055.8
2014	131175	80627	1360.3
2015	154560	96460	1533.8
2016	170130	110710	1385.65
2017	207891	139677	1442.5
2018	223995	156460	2114.59

Source: Al-Baraka bank, (2013 – 2018) the annual reports.

According to linear regression model the deposits at the end of 2023 will rise to 327.118,19 million da with a growth of 46.03% compared to 2018, and the financing will rise to 248.652,047 million da with a rise of 58.92% at the end of 2018 compared to 2023, and the taxes paid will rise to 2.637,62 million da with a rise of 24.73% .

After the integration of the 2019 data, we witness a negative change in the dynamics of al Baraka activities, in 2019 Al-Baraka deposits dropped by 4.69% to 213.500 million da, and the financing with 1% to 154.600 million da, but the taxes paid to the treasury raised with 7.87%, and that rise represent only 0.0056% of the treasury deficit.

And by that and according to the linear regression model the deposits of Al-Baraka will rise to 305.684.45 million da at the end of 2023 with a growth of 36.46% compared to 2018, and the financing will rise to 230.586,37 million da with a growth of 47.37%, and the taxes paid will rise to 2875,49 million da with a growth of 35.98%, which is (excluding taxes) lower that the growth rate before the integration of the 2019 post regulation data, meaning that regulation couldn't affect the Baraka activities positively.

4-2-1 Test the effect of the integration of the parallel market economies on the taxes contributions of Al-Baraka bank:

we test now the Baraka-bank ability to contribute to the national treasury, by the VAR model to test the effect of the deposits and the financing on the taxes paid by the bank, using the data from 2011 until 2019.

Table 04: the performance of Al-Baraka bank from 2010 to 2019

Unit: million DA

The financial year	Taxes paid	Total deposits	Total financing
2010	1255.96	89983	55689
2011	1362.88	103285	57198
2012	1483.26	116515	57891
2013	1055.8	125425	63354
2014	1360.3	131175	80627
2015	1533.8	154560	96460
2016	1385.65	170130	110710
2017	1442.5	207891	139677
2018	2114.59	223995	156460
2019	2281.498	213500	154600

Source: Al-Baraka bank, (2010 – 2019) the annual reports.

Testing the stationarity of the series, starting with the taxes, using the Phillips-Perron test, where we found that the serie has a P.value of 0.9465, meaning that the serie is non-stationary, and for the deposits and the financing they have a p value of 0.8429 and 0.9601 respectively, meaning that both are non-stationeries.

The lag length criteria using the akaike and Schwarz information criterion of the serie is 1.

Figure 06: the Vector Autoregression estimate of the influence of taxes

Vector Autoregression Estimates			
Date: 04/14/21 Time: 18:44			
Sample (adjusted): 2012 2019			
Included observations: 8 after adjustments			
Standard errors in () & t-statistics in []			
	DTAXES	DFINANCING	DDEPOSITS
DTAXES(-1)	-0.351219 (0.36708) [-0.95678]	-26.96467 (7.57713) [-3.55869]	-24.49567 (18.9476) [-1.29281]
DFINANCING(-1)	0.026352 (0.01657) [1.59064]	0.922217 (0.34196) [2.69685]	0.733851 (0.85512) [0.85819]
DDEPOSITS(-1)	-0.002196 (0.01526) [-0.14388]	-0.422232 (0.31506) [-1.34015]	-0.390349 (0.78786) [-0.49546]
C	-142.6735 (216.351) [-0.65945]	10525.78 (4465.78) [2.35698]	13701.03 (11167.3) [1.22689]
R-squared	0.520482	0.796117	0.321243
Adj. R-squared	0.160843	0.643204	-0.187825
Sum sq. resids	344896.5	1.47E+08	9.19E+08
S.E. equation	293.6394	6061.125	15156.63
F-statistic	1.447236	5.206349	0.631041
Log likelihood	-54.03774	-78.25613	-85.58847
Akaike AIC	14.50944	20.56403	22.39712
Schwarz SC	14.54916	20.60375	22.43684
Mean dependent	114.7781	12175.25	13776.88
S.D. dependent	320.5478	10147.13	13906.77
Determinant resid covariance (dof adj.)		4.21E+19	
Determinant resid covariance		5.26E+18	
Log likelihood		-206.4795	
Akaike information criterion		54.61988	
Schwarz criterion		54.73904	
Number of coefficients		12	

According to the model the coefficient of one period taxes lag is not significant in taxes equation nor in financing and deposits equations, and for the coefficient of one period financing lag is significant in the taxes and financing equations, and for the coefficient of one period deposits is not significant at all.

We need to test if the model is sufficient to capture all the dynamics in the growth of taxes paid, and if our model is stationary

Figure:07: Var Residual serial correlation LM test

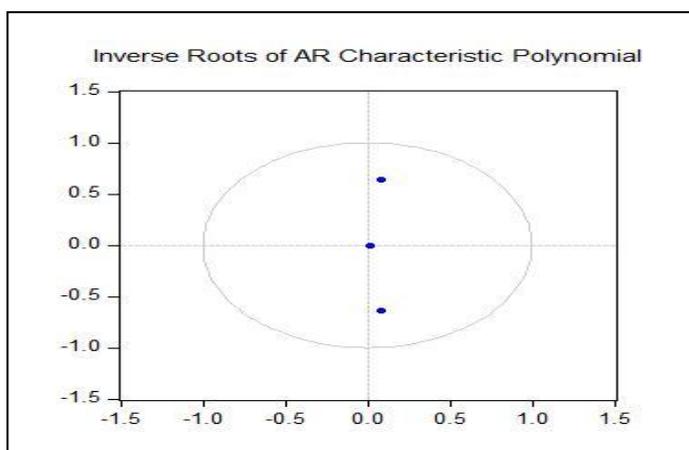
VAR Residual Serial Correlation LM Tests						
Date: 04/14/21 Time: 18:47						
Sample: 2010 2019						
Included observations: 8						
Null hypothesis: No serial correlation at lag h						
Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	36.46609	9	0.0000	NA	(9, NA)	NA
2	NA	9	NA	NA	(9, NA)	NA
Null hypothesis: No serial correlation at lags 1 to h						
Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	36.46609	9	0.0000	NA	(9, NA)	NA
2	NA	18	NA	NA	(18, NA)	NA
*Edgeworth expansion corrected likelihood ratio statistic.						

Figure 08: the test of the stationarity of the model

Roots of Characteristic Polynomial	
Endogenous variables: DTAXES	
DFINANCING DDEPOSITS	
Exogenous variables: C	
Lag specification: 1 1	
Date: 04/14/21 Time: 18:52	
Root	Modulus
0.082371 - 0.640650i	0.645923
0.082371 + 0.640650i	0.645923
0.015906	0.015906
No root lies outside the unit circle. VAR satisfies the stability condition.	

According to the tests this model is not significant to capture all the dynamics in the growth of taxes paid, and our model is stationary (all the modulus (the absolute value of a complex root) are inferior than 1), and we could also confirm the result of stationarity of the test with the **Inverse Roots of AR Characteristic Polynomial**.

Figure 09: Inverse Roots of AR Characteristic Polynomial



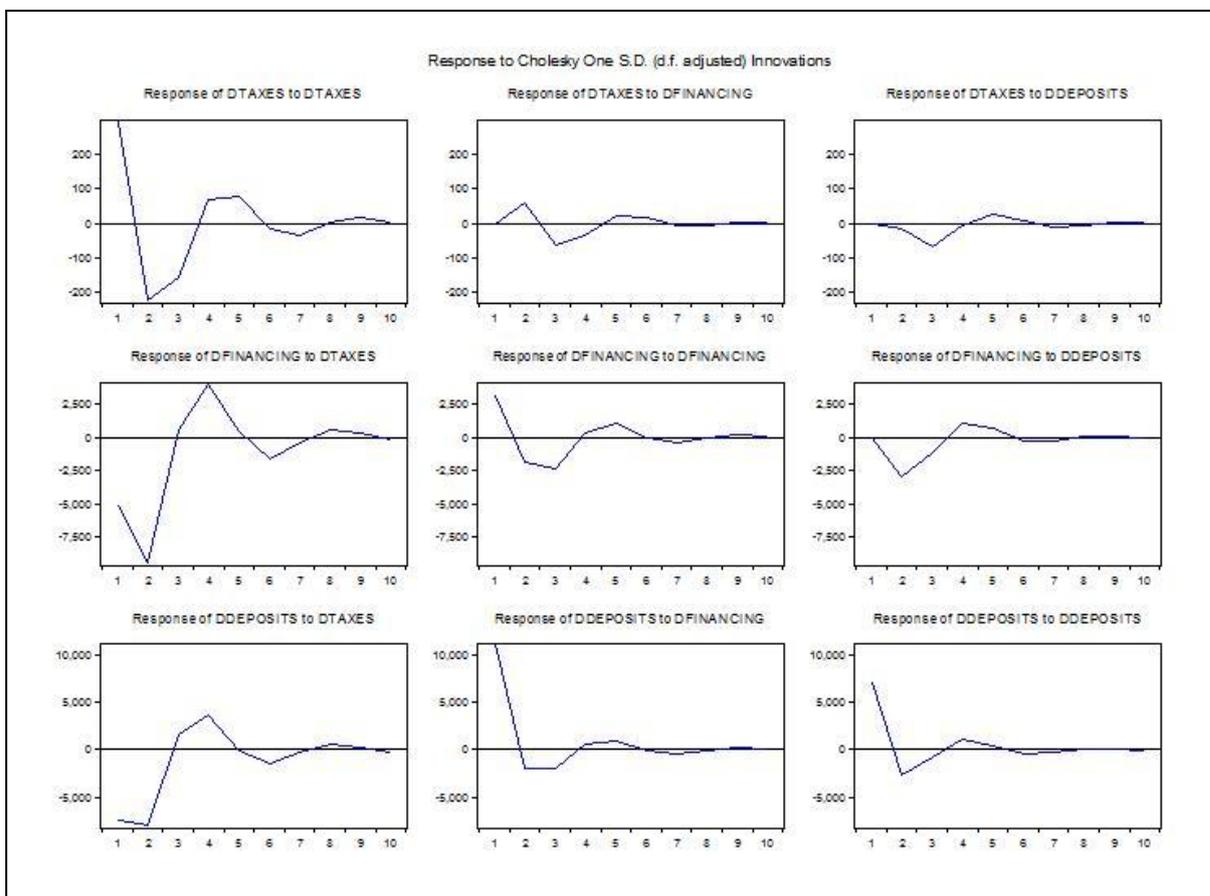
The interpretation of the VAR system:

According to the figure below, if we test the effect of every variable on the others using the Cholesky – D.f adjusted

If we observe the second and the third figures we observe that there is no immediate reaction of the taxes paid by the shock in the financing and the deposits (but there is a change in taxes after the shock in the financing after the second period, and a change also after a shock in the deposits but negatively in the second period and positively after the fourth period).

So even if there is a full integration of the parallel economies by Al-baraka-bank, the effect of on the national treasury won't be immediate, but it takes a shorter period to rise the revenues of the budget sheet, than the integration in a-Salam Bank.

Figure 10: the response from the taxes paid to changes of the deposits and financing



Conclusion:

The problematic of the application of the Islamic finance as a tool to attract the economies of the parallel market with the focus on the households, that was planned without any scientific base, the Findex report on the financial inclusion concur that only 5% of the Algerians are unbanked in 2017 for religious reasons, and that was the case of the most MENA countries, meaning that there is other reasons that led to the rise of the parallel market size, detailed in the 2017 report, like the geographical coverage, the educational level, and the profitability of the parallel market, and of course the bureaucracy in the Algerian banking sector.

Using the Islamic banking will attract a share of the parallel market, but it won't affect directly the national revenues, because of weak dynamics of the Islamic banks activities in Algeria, for example in the case of Al-Baraka the growth on it activities, in part of the financing will rise the taxes paid to the treasury, but after several financial years, and the rise of the deposit will affect immediately the taxes but negatively, according to the vectoral auto-regression test, and in case of a-Salam bank it will take longer time for the taxes to grow in case of a financing growth, and don't grow at all in case of deposits growth.

But this dynamics could change after the application of the 20-02 regulation, and the 2020-03 instructions, regulating its operations and procedures, and the application of its articles, and that's the difference between the 20-02 and the 18-02 regulation, especially the open of the Islamic windows at the level of the traditional public banks, that could expand the coverage of the Islamic finance (knowing that before the regulation, the agencies that treat with the Islamic finance were 52 agencies , meaning that there is an agency for every 855.231 Algerian, however with the application of the 17th article of the regulation there been hundreds of Islamic windows opened in only one year, especially in the public banking sector.

The result of the integration is not encouraging with integration of only 0.016% of the parallel market in one month, which is lower than what was expected (5.5% of the parallel market), meaning not only that the Islamic finance could not be a response for the treasury deficit, but we need to have a wider discussion about how to realise the fool national financial inclusion, based on a reasonable study of the parallel market, and what push its agents to keep their monetary masse outside the banking system.

And for the Islamic banking, the level of trust on it won't enhance until the application of a series of reforms, that allow it banks to treat in a market that respect it specifics, starting with the reforms on the monetary policy, and the 03-11 order, taking into consideration the nature of the Islamic banks, that can't treat with traditional monetary tools, and develop alternative for it, like obligatory reserves, open market operations, rediscount process, participation in the guaranteed deposits funds, the traditional insurance policy, the reforms on the banks accounting systems, with the legalizing of the sharia-auditing, by following the model of the banking committee in the traditional financial auditing, by giving the national charaic authority the authority to supervise the Islamic financial institutions operations, and force the sharia-audit committee of the bank to report to the national authority, with giving this later the authority to control the banks operations, and control sharia-control-system, and give it the authorities to impose a serie of penalties in case of violations of the sharia terms and dispositions that regulate the Islamic banking, simulating the relation between the banking committee and the statutory auditors and the banking institutions according to the article 102 of the 03-11 order, in which it have the authority impose penalties on them, and those penalties are varied from blame, warning than prohibitions from their duties in the bank that was the subject of the violation, than the prohibition and termination of their license to control and audit in the financial sector in 3 years.

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