

Effect of Bank Diversification on Economic Growth in Nigeria

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Abstract

The study investigated the effect of bank diversification on economic growth in Nigeria. Ten (10) commercial banks were randomly sampled for the study data used were sourced from the annual reports of the selected commercial banks spanning from 2013-2016. The study gathered data on real gross domestic product, diversification of income, diversification of loan and diversification of deposits. The study employed Panel data estimations including pooled OLS, fixed effect, and random effect estimations approach to test the relationship existing between the exogenous and endogenous variables in the study. The result of the finding explored that diversification measured in terms of diversification of income, diversification of loan and diversification of dividends has positive impact on economic growth in the study as measured in terms of Gross Domestic Product, meaning diversification has the capacity to boost the level of performance of the economy. Based on this, the study recommended that there should be sustainability of government policies in order to stimulate the much desired growth in the nation's economy.

Key words: Diversification; Commercial Banks; Economic Growth; Nigeria

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INTRODUCTION

The typical knowledge of “not placing all your eggs in a basket” initiated by Markowitz (1952), Tobin (1958) and Samuelson (1967) has been the most significant paradigm that has existed over decades in the financial community. Currently in literature, discussions relating to the effect of diversification on banks performance and its contribution to the growth of the economy have not ceased. Scholars including Merciera and Schaeck (2007) and Elsas et al. (2009) have discovered that diversification enhances banks continuous profitability while other researchers discovered the opposite of these results (DeYoung and Roland, 2001; Stiroh, 2002). Also, the experience of the global financial crisis stressed the dangers of concerted diversifications plans and intensified risk-taking without sufficient capital base can cause the institution, the financial sector and the economy at large a great loss. Additionally, the outcomes of diversification on banks and economic growth are significant considering the eminent connection between the financial sector and the real economy (Foster and Bailey, 2015). It has also been established that long-run economic growth and development depends particularly on the capability of banks to stay stable and most importantly their ability to distribute funds to the priority sectors of the economy. The good condition of banking system in the existing market economies is crucial to the promotion of capital flow including speedy economic convergence.

The affliction of the 1997 financial crisis on the emerging market economies influenced experience significantly the practicability and attainability of several banking models. The unpleasant experience of these times of uncertainty certainly has exposed the chance of a bank's dispensable reliance on the usual business activities in a situation of capital account liberalization. Several analysts have posited specifically that the scarcity

of proper diversification of loan investment as the main cause of banks loss following the financial deregulation (Stone, 2000). Over the years, the structure of existing countries banking market has been influenced by policies that increase the provision of financial services to some particular sectors of economies on the edge of economic growth. Prior to the period of the financial crisis, most banking systems were seen to be depending on the revenue generated from the usual banking operations. Following the crisis, the universal banking model which gives permission to combination of wide set of financial services comprising investment banking, insurance and commercial banking appeared as a sought-after arrangement for practically all financial institutions from the perspective of policymakers.

Surprisingly, several banking methods depends solely on income from the normal banking operations, the post-crisis years realized an amplified number of banks particularly in East-Asia and Latin-America diversifying into investment banking-type activities, fee-based investment and connected activities (Leaven, 2007). The banking industry has been asserted as the strength and source of central support for any successful economies and a diverse, financially advantageous and stable banking method is necessary for a firm and buoyant economies. If a seasoned capital market is lacking, the banking sector will only serve as a different source of money supply in developing countries (Nisar, Wang, Ahmed, & Peng, 2015). Albeit, the urgent significance of the banking industry for this less advanced countries, amassing amongst banks and the height of domestic credit is below the usual level. Non-performing loans, although decreasing over time are noticeably high as against the situation in the developed countries and the world average (Nisar, Peng, Wang, & Ashraf, 2018).

Theoretical and empirical explications has evinced that the effect of diversification on bank stability and profitability and its consequent effect on the growth of the economy is quite uncertain. The portfolio theory posited that diversified banks derive advantage from economies of scale which enhances performance and limits risk (Klien & Deidenberg, 1997). Revenues from several sources which are unconnected with each other result in consistent streams affecting positively the overall profits of banks (Chiorazzo et al., 2008). Although if the diversified activity is inherently riskier than the normal banking activities, the cost of diversifying may be greater than its return, and the possibility of deriving profit in its operations may be doubtful and its overall performance may become worse (Boyd et al., 1993).

However, if diversification must reach its favorable results, there must exist a frequent check on every operations and activities diversified into. If diversification will cause banks to achieve their goals of diversification in all aspect, proper checking of the activities must often

be ensured. Surprisingly, the opposite is the case of most commercial banks, and this instead of making these banks experience the great results of diversification, they face crisis and huge loss and renders these banks aimless stemming from the inability to sort their debts and also survive in the business despite the fact that they offer products and services that differs from the usual banking operations (Olawejaju, Migiro, & Sibanda, 2017). Diversification instead of reducing agency problem, it rather heightens it and hence make banks to merge and remerge. The strategy of diversifying has never been a adverse option, though it is undoubted that the strategy makes increases the banks vulnerability to loss risks from operational diversification of assets, liabilities, loans and deposits but bank's management if it possesses the needed expertise to take charge of these risks successfully (Olawejaju et al., 2017).

Additionally, diversification may also result in difference in opinions of investors and the banks itself which might pose an unfavorable effect on banks financial performance (Olawejaju et al, 2017). Contrastingly, considering the demerits of diversification, Landi and Venturelli (2001); Berger at al., (2010) and other scholars discovered that banks stand a huge chance of benefiting hugely from diversification particularly from fixed and increased returns from assets, escape from unclassified (unsystematic) risk and improvement of banks performance. Several papers concerning this research exists, although authors of these papers are mostly international scholars, despite the abundance of papers relating to this work, most of these papers did not close the gap of dearth in literature relating to real variables and measures of diversification in banks including asset, liabilities, loans, deposits and general operational diversification. Hence, this study will fill the gap of lack of literature by further expounding on the discovery which held that operational diversification including loans, deposits, assets and liabilities are the main attributes or kinds of banks' diversification (Mulwa et al., 2015)

Premise on the above arguments, it is necessary to ask some important questions which will be answered by the discoveries of this research. What is level of effect caused by bank diversification on bank performance? What is the connection between bank performance and economic growth of Nigeria? The general objective of this paper is to determine the effect of bank diversification on economic growth of Nigeria. The study will specifically ascertain the level of effect caused by bank diversification on bank performance and discover the connection between bank performance and economic growth of Nigeria.

The remaining part of this paper is arranged as follows: the second part holds the review of contemporary literatures on diversification. Part three provides an overview of the data and methodology employed and the fourth part presents the findings of the models employed.

Finally, the fifth part holds the conclusion and policy implications.

1. EMPIRICAL REVIEW

Andrea & Valeria (2010) investigated the diversification strategy of European banks. The study's main aim is to define more precisely the phenomenon of European banks' diversification while at the same time mapping the considerable range of financial products and services with relation to the main business areas and to analyze the economic factors which explain the European banks' diversification and at the same time to evaluate the main implications of this process in terms of concentration and profitability. The study employed secondary data which were sourced from annual reports of European banks and it employed comparative method in analyzing the data gathered. From the analysis new evidence was found on the cost efficiency of European banks by estimating economies of scale and scope for a large sample of banking groups. And the analysis confirms the hypothesis that continental European banks have reacted to disintermediation and to the related need for restructuring by developing their revenues more than by cutting their costs, it then suggests that all banks, regardless of size, can achieve significant cost advantage due to the growth of fee-based services.

Saoussen & Dominique (2011) examined revenue diversification in emerging market banks. The study examined whether the observed shift into non-interest based activities improves financial performance, using a sample of 714 banks across 14 East-Asian and Latin-American countries spanning from 1997 to 2007, the study made use of secondary data which were sourced from bank scope database. The study employed the basic Herfindahl-type approach for its analysis. From the analysis it was found that diversification gains are more than offset by the cost of increased exposure to the non-interest income, specifically by the trading income volatility. But this diversification performance's effect is found to be non-linear with risk, and significantly not uniform among banks and across business lines. An implication of these findings is that banking institutions can reap diversification benefits as long as they well-studied it depending on their specific characteristics, competences and risk levels, and as they choose the right niche.

Celine, Ruth, & Amine. (2013) examined the impact of bank revenue diversification on the performance of banks in an emerging economy. The objective of the study is to contribute to the scarce literature dedicated to the impact of diversification on bank profitability and risk in the case of emerging and developing countries. The study made use of secondary data using a sample of 39 universal and commercial banks in the Philippines

spanning from 1999-2005 with a very detailed breakdown of annual data on income structure provided by the Central Bank of the Philippines, the study employed descriptive and correlation method of analysis to analyze the data gathered, its findings show that, conversely to studies on Western economies, a shift towards non-interest activities increases bank profits and risk-adjusted profits particularly when they are more involved in trading in government securities. The results also indicate that foreign banks benefit more from such a shift than their domestic counterparts. Moreover, we account for the institutional and regulatory environment advocating loans to SMEs and find that higher involvement in non-interest activities is only beneficial for banks with low exposures to SMEs. Our findings have important policy implications in terms of achieving optimal diversification and lower risk exposure, which might conflict with policies aiming to promote SME lending.

Shakeba & Sherene (2015) harnessed evidence on the interrelationships between revenue and loan diversification, performance and stability by applying a SUR model to Jamaican commercial bank panel data over the period March 2005 to March 2015. The study employed Herfindahl-Hirschman Index (HHI) equations for its analysis, the results show that loan portfolio diversification leads to improvements in bank stability, as measured by the Z-score index, as well as increases profitability. Notwithstanding these results, the findings further indicate that loan portfolio diversification contributes to deterioration in loan quality which was evidenced for both large and small banks. However, while large banks increase capital buffers to accommodate additional risks connected to diversification, this is not the case for small banks. As it relates to interest revenue and non-interest revenue diversification, both lead to improvement in risk-adjusted profitability as well as reduce the likelihood of insolvency of banks. As such, policies which provide incentives for banks to diversify in these areas may enhance profitability, without jeopardizing the stability of the financial sector. Nonetheless, and increased revenue diversification was found to contribute to deterioration in the value-at-risk measures of commercial banks.

Angus and Tatiana (2014) examined whether the diversity of financial institution affects their valuations. The objective of the study is to examine the impact of bank diversity on their market value. It looks at two measures of bank diversity, asset diversity and income diversity - and study their impacts on two measures of banks' value - the price to book ratio and Tobin's q. The study employed primary data which were sourced from 800 banks from 31 countries around the world. The study made use of ratio analysis to quantify the impact of diversity on banks valuation. And the result from the analysis shows that it is very difficult to identify the

causal impact of diversity on the valuation of banks since it is difficult to measure directly the potential roles of the economies of scale, agency problems and other factors underlying changes in market valuations and that the diversity impacts are insignificant or negative rather than positive. However, when banks are divided into small, medium and large banks we find that bank diversity may add value in the case of small banks but probably destroys it in the case of the largest banks.

Shoaib, Ke, Susheng, and Badar (2018) investigated the ongoing debate on the benefits and drawbacks of bank revenue diversification. Revenue diversification may benefit banks if diversified activities are inherently less risky and possess high returns, while it may hurt banks if diversified activities are more risky and have low returns. Analyzing a panel dataset of 200 commercial banks from all South Asian countries, we found that overall revenue diversification into non-interest income has a positive impact on the profitability and stability of South Asian commercial banks. We further observed that different types of non-interest income-generating activities have different impacts on bank performance and stability. While fees and commission incomes have a negative impact on the profitability and stability of South Asian commercial banks, other non-interest income has a positive impact. Our results imply that banks can benefit from revenue diversification if they diversify into specific types of non-interest income-generating activities. Our findings are robust and relevant to the use of alternative measures of revenue diversification, profitability and stability

Canaa & Goergios (2016) analyzed the impact of geographic diversification on bank value by employing a data set comprising the largest banks across the world, originating from both developed and emerging countries. The study made use of international share ratio and international concentration ratio for its analysis. The findings suggest that the value impact of international diversification depends on the financial development level of a bank's home country higher levels of diversification are associated with changes in valuations only for banks originating from emerging countries. In addition, the locus of internationalization matters for the direction of effects: while markets respond positively to the intra-regional expansion activities of emerging country banks, they seem to believe that these banks cannot benefit from diversifying into far away markets.

Martin (2012) studied how a bank's diversification affects its own risk taking behavior and the risk taking of competing, non-diversified banks. By combining theories of bank organization, market structure and risk taking, the study show that greater geographic diversification of banks changes a bank's lending behavior and market interest rates, which also has ramifications for non diversified competitors due to interactions in the banking market. The study made use accounting data from commercial banks in the United States. These data come from Reports

of Condition and Income data, and it analyzed the data using regression and ratio analysis. Results from the analysis indicate that a bank's risk taking is lower when its competitors have a more diversified branch network. By utilizing the state-specific timing of a removal of intrastate branching restrictions in two identification strategies, the study further pin down a causal relationship between the diversification of competitors and a bank's risk taking behavior. These findings indicate that a bank's diversification also impacts the risk taking of competitors, even if these banks are not diversifying their activities.

Micheal (2015) examined the impact of bank size and funding risk on bank stability. The study focused on addressing how bank size significantly explains the variation in bank stability and how bank funding risk significantly impact bank stability. The study gathered data from the rural banking industry in Ghana, Ghana. Controlling for credit risk, liquidity risk, diversification in the business model, profitability, inflation, financial structure and gross domestic product, the results suggest that an increase in the size of a rural bank results in an increase in its stability. The study made use of ratio analysis and z-score analysis as its method of analysis. The results also show that funding risk positively impacts bank stability. The positive relationship between size and bank stability has important repercussions for the current debate on whether or not to constrain bank size to insulate the financial system from future crisis. The positive relationship between funding risk and bank stability also has important implications for the current debate on funding of retail banks.

2. METHODOLOGY

The research adopted a positivism research approach because it depended on quantifiable observations that instigate statistical analyses; this is in alignment with the position of Collins (2010). Ten (10) commercial banks were randomly sampled for the study. Data used in the study will be sourced from the annual reports of the selected commercial banks spanning from 2013-2016.

2.1 Model Specification

Despite the review theories that explicated the effect of bank diversification strategies on their profitability and the growth of the economy, we realized that the Resource Based View (RBV) Theory the reality of this work, especially on bank performance depends on the tenets of the Resource Based View theory which clearly stated that firms should maximize their current resources to gain competitive advantage, economies of scale and scope efficiency from diversification. If banks can adopt the diversification of their various operational resources (assets, loans, deposits and income) then their effective financial performance is undoubted, hence the growth of the economy. The actuality of the study's aim depends on

the Manson’s Structure Conduct and Performance (SCP) model, this model has been justified as the highest rated hypothesis for testing the connection between market structure, firms conduct and firm performance of the banking sector (Mishra & Sahoo, 2012; Nabieu, 2013).

The structure in the model depicts the diversification of activities and the number of banks in the banking sector, variables such as diversification, regulatory control, and concentration, economic conditions etc. forms part of the variables that affects market structure. Conduct as a term also present in the model includes their reactions to occasional withdrawals, marketing strategies and price fluctuation. Finally, performance refers to the amount of returns received from banks products and services offered (Nabieu, 2013).

Stemming from the mathematical simultaneous equation framework of SCP hypothetical model as adopted by Delorme et al. (2002); Mishra and Sahoo (2012) and Nabieu (2013). Hence, this study employs the usage of the performance model created from this model.

$$S = f(C, P, W) \tag{1}$$

$$C = f(S, C, P) \tag{2}$$

$$P = f(S, C, W) \tag{3}$$

The third equation represents the performance model where S stands for Market Structure of the bank; C stands for the conducts of the bank; P is the performance variable

and W stands for the vector of control variables that can affect the dependent variable.

Indicating this model in an econometric:

$$P_{it} = a_0 + \sum_{i=1}^n S_{it} + \sum_{i=1}^n C_{it} + \sum_{i=1}^n W_{it} + \varepsilon_{it} \tag{4}$$

To represent the effect of diversification and other variables on economic growth clearly in a simple model.

$$GDP_{it} = f(DIVin, DIVlo, DIVde) \tag{5}$$

Where:

GDP = Income Level/National Income

DIVin = Diversification of income

DIVlo = Diversification of loan

DIVdep= Diversification of deposits

The study employs the usage of Herfindahl Hirschman Index (HHI) to measure the diversification values of bank activities.

$$HHI_{rev} = \left(\frac{interest\ income}{\Sigma revenues}\right)^2 + \left(\frac{commission\ income}{\Sigma revenues}\right)^2 + \left(\frac{otler\ income}{\Sigma revenues}\right)^2$$

$$HHI_{dep} = \left(\frac{demand}{\Sigma deposits}\right)^2 + \left(\frac{saving}{\Sigma deposits}\right)^2 + \left(\frac{time}{\Sigma deposits}\right)^2 + \left(\frac{CD's}{\Sigma deposits}\right)^2$$

$$HHI_{lo} = \left(\frac{ind.loans}{\Sigma loans}\right)^2 + \left(\frac{mortgage\ loans}{\Sigma loans}\right)^2 + \left(\frac{smallbusiness\ loans}{\Sigma loans}\right)^2 + \left(\frac{public\ loans}{\Sigma loans}\right)^2 + \left(\frac{large\ business\ loans}{\Sigma loans}\right)^2$$

3. RESULTS AND DISCUSSION OF FINDINGS

3.1 Descriptive Analysis of Variables

Table 1
Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
GDP	1	98	32.21051	75	109.9
DIVin	10	17.7976	6.065564	-3.08	87.5
DIVlo	10	78.076	10.50668	67	32.6
DIVde	10	15.0784	6.922187	.8	100

Sources: Author’s Computation, (2018)

Table 1 reports the descriptive statistics of variables used in the study. Specifically Table 1 reported the mean, standard deviation, minimum and maximum statistics of the variables. As reported in Table 1, the mean value of Gross Domestic Product for the year under study which stood at 98.0, with minimum and maximum values of 75 and 109.9 respectively. While the mean value for diversification of income, diversification of loan and diversification of deposits stood at 17.7976, 78.076 and 15.0784 respectively. Minimum and maximum values reported in Table 1 stood at -3.08 and 87.5 for diversification of income, 67 and 32.6 for diversification of loan and .8 and 100 for diversification of deposits.

3.2 Correlation Analysis

Table 2
Correlation Matrix

	GDP	DIVin	DIVlo	DIVde
GDP	1.0000			
DIVin	0.0022	1.0000		
DIVlo	0.2283	0.2419	1.0000	
DIVde	0.8185	0.0038	0.0894	1.0000

Sources: Author’s Computation, (2018)

Table 2 reported the correlation between variables used in the study. From the table it can be observed that there is positive correlation between pairs of all variable used in the study. Specifically Table 2 reported correlation values of 0.0022, 0.2283, 0.8185, 0.2419, 0.0038 and 0.0894 for GDP and DIVin, GDP and DIVlo, GDP and DIVde, DIVin and DIVlo, and DIVde, DIVlo and DIVde respectively.

3.3 Analysis of the impact of Diversification of income, Diversification of loans and Diversification of Dividend on Economic Growth.

This section presents analysis of the impact of changes in diversification of income, diversification of loans and diversification of dividend on economic performance measured in terms of its Gross Domestic Product. Panel data estimations including pooled OLS, fixed effect, and random effect estimations are presented in tables below followed by concise interpretation

3.3.1 Pooled OLS Estimation

Table 3
Pooled OLS Parameter Estimates
Series: GDP, DIVin, DIVlo, DIVde

Variable	Coefficient	Standard Error	T-Test Values	Probability
C	190.574	50.85217	3.75	0.001
<i>DIVin</i>	.4202281	.1480886	2.84	0.007
<i>DIVlo</i>	1.13797	.1659865	6.86	0.000
<i>DIVde</i>	1.737376	.1146372	15.16	0.000

R-square=0.6954

3.3.2 Fixed Effect Panel Analysis

Table 4
Fixed Effects Estimates (Cross Sectional and Period Specific)

Cross-sectional specific effect			Time specific effect		
Variables	Coefficients	Prob	Variables	Coefficients	Prob
C	167.4421	0.000	C	439.331	0.000
<i>DIVin</i>	.2681966	0.255	<i>DIVin</i>	.4794321	0.553
<i>DIVlo</i>	.2480993	0.055	<i>DIVlo</i>	.2898703	0.556
<i>DIVde</i>	1.821558	0.000	<i>DIVde</i>	4.038466	0.000
Effects			Effects		
2013	1.733418	0.449	2013	2.147909	0.872
2014	-1.82494	0.631	2014	10.48665	0.507
2015	.2677528	0.911	2015	11.92663	0.467
2016	58.17082	0.000	2016	11.92663	0.467
R-square=0.9936			R-square=0.7088		
Adjusted R-square= 0.9910			Adjusted R-square= 0.5889		
F-statistics=377.32			F-statistics=5.91		
Prob(F-stat)=0.0000			Prob(F-stat)=0.0013		

Sources: Author's Computation, (2018)

Table 4 presents results of the fixed effect estimation (cross-sectional and period specific effect). Notably result presented in Table 4 showed that when heterogeneity effect across the sampled commercial banks is incorporated into the model. Diversification of income exert insignificant positive impact on gross domestic product, with coefficient estimate of 0.2681966 ($p=0.255 > 0.05$), diversification of loan exerts insignificant positive impact on gross domestic product with coefficient estimate of 0.2480993 ($p=0.055 > 0.05$), while the impact of diversification of deposits on gross domestic product

Adjusted R-square=0.6519
 F-statistics=15.98
 Prob(F-stat)= 0.0000

Pooled OLS regression estimation result presented in Table 3 showed that diversification of income exerts significant positive impact on gross domestic product, with coefficient estimate of 0.4202281 ($p=0.007 < 0.05$), diversification of loan exerts significant positive impact on gross domestic product with coefficient estimate of 1.13797 ($p=0.000 < 0.05$), and diversification of deposits exerts significant positive impact on gross domestic product, with coefficient estimate of 1.737376 ($p=0.000 < 0.05$). R-square statistics reported in Table 3 revealed that about 69.5% of the systematic variation in gross domestic product can be explained by diversification of income, diversification of loan and diversification of deposits respectively. Reported f-statistics of 15.98 and the probability value of 0.0000 validate the fact that all the included explanatory variables jointly and significantly influence gross domestic product.

is positive and significant, with coefficient estimates of 1.821558 ($p=0.000 < 0.05$). R-square values reported in Table 4 stood at 0.9936 and 0.7088 for cross sectional specific effect and period specific effect respectively. It thus implies that for the cross sectional specific estimates about 99% of the systematic variation in the dependent variable can be explained by variations in all the included explanatory variables, while the period specific effect estimation shows that about 71% of the systematic variation in the dependent variable can be explained by variation in all the explanatory variables.

3.3.2.1 Post Estimation Test

Table 5
Restricted F Test of Heterogeneity (Cross-Sectional and Time Specific)

	F-statistics	Probability
Cross sectional	198.19	0.0000
Time specific	0.20	0.9373

Sources: Author's Computation, (2018)

Table 5 reveals result of the heterogeneity test conducted with respects to both cross-sectional and period specific effect. Reported in Table 5 are f-statistics values of 198.19 and 0.20 with probability values of 0.0000, and 0.9373 for cross sectional and period specific effect respectively. Hence the table revealed that there is enough evidence to reject the null hypothesis that all differential intercept corresponding to the cross sectional specific units are equal to zero, but otherwise for the period specific intercepts. Thus pooled OLS estimator restriction is not valid as cross-sectional heterogeneity effect is too significant to be ignored.

3.3.2.2 Hausman Test

Table 6
Hausman Test

Null hypothesis	Chi-square stat	Probability
Difference in coefficient not systematic	18.61	0.0003

Sources: Author's Computation, (2018)

Table 6 reveals a chi-square value of 18.61 alongside a probability value of 0.0003. The result shows that there is enough evidence to reject the null hypothesis that differences in coefficients of fixed effect estimator and random effect estimation is not systematic. It stands that the fixed effect estimator is the most suitable estimation. Thus making fixed effect cross sectional specific estimation result reported in Table 5 the most consistence and efficient estimate.

CONCLUSION

From the analyses conducted in the study, it was established that diversification measured in terms of diversification of income, diversification of loan and diversification of dividends has positive impact on economic growth in the study as measured in terms of Gross Domestic Product, meaning diversification has the capacity to boost the level of performance of the economy. Most importantly, the study established that diversification measured in terms of deposits exerts significant impact on the performance of commercial banks; this indicates an indirect effect on economic growth. Thus, the study concluded that bank diversification has positive effect on the economic growth.

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