



**The impact of the expected credit loss model under
IFRS 9 on loan loss recognition timeliness: early
evidence from the Egyptian banks**

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Abstract

The central bank of Egypt (CBE) has obligated the Egyptian banks as of 2019 to apply IFRS 9 to provide more timely information about the expected credit losses (ECL). However, the implementation of IFRS 9 concerning the ECL requires a significant judgment that may lead to opportunistic accounting behavior. This research aims to examine the impact of the expected credit loss (ECL) model under IFRS 9 on loan loss recognition timeliness (LLRT) of the Egyptian banks, and also investigates the moderating effect of corporate governance (CG) efficiency namely: board size (BSIZE), board independence (BIND), institutional ownership (INSTIT), CEO duality (DUAL), and audit quality (AQ). The research uses data extracted from the quarterly financial reports for a sample of Egyptian banks from 2018 to 2019, the data were processed using the panel corrected standards errors (PCSE). The results reveal a significant positive effect of applying the ECL model on LLRT, also, the results show a positive effect of BIND on the association between ECL model and LLRT, conversely, there is a negative effect of DUAL, while, there is no effect for each of BSIZE, INSTIT, and AQ. This research introduces early empirical evidence from the emerging markets about the implications of the ECL model under IFRS 9, the research results are important for regulators and investors because it supports the effectiveness of the new model, also, the results are important for future reform programs undertaken by regulators in Egypt such as CBE, moreover, the research adds to the literature of LLRT, by providing evidence regarding the effect of applying the ECL model on LLRT.

Keywords – Loan loss recognition timeliness (LLRT), International Financial Reporting Standard (IFRS) 9, Expected Credit losses (ECL), Corporate Governance (CG).

1. Introduction

Loan loss provisions (LLP) are allowances designated to meet expected losses from non-performing loans (NPL), LLP is considered the most important method to be used in dealing with expected losses of bank credit risks and safeguard the stakeholders' benefits (Al-Magharem et al., 2019), According to Alali and Romero (2013), who studied banking operations from 1984 to 2010, LLP could be used as an indispensable determinant in foretelling the failure of US banks, likewise, Eastburn and Sharland (2017) and Shan and Xu (2012) indicated that banks might fall because of bad loans and insolvency if there was inadequate LLP.

Loan loss recognition timeliness (LLRT) means the susceptibility of current LLP to future modifications in NPL (Kim et al., 2020), more timely loan loss recognition (LLR) provides an early caution for the problems of loans (Akins et al., 2017), prior literature showed that LLRT is a pivotal accounting policy choice that affects the cyclicity of bank lending, which in turn magnifies the downside risk for banks with low capital and systemic risk (Bushman and Williams, 2012), Beatty and Liao (2011) found that banks that delay the recognition of loan losses diminish their lending during the downturn and vulnerable to capital crunches, the study also shows that the pro-cyclicality of bank lending is less for banks with smaller delays.

Incurred credit loss (ICL) model under IAS 39 has been criticized heavily because banks can recognize LLP only when there is a trigger event e.g., non-payment of interest, non-repayment of principal, and a significant reduction in collateral value (Kim et al., 2020), according to the ICL model, losses must be probable to be recognized and that depends on events in the past and conditions present at the financial reporting date, so the expected losses are ignored (Albian, 2019).

As a result of that, the IASB has developed the expected credit loss (ECL) model in July 2014 under IFRS 9 to better reflect the general pattern of deteriorations or improvements in the credit quality of financial instruments (IASB, 2014), as a response to the update in the IFRSs, the central bank of Egypt (CBE) had decided on January 17, 2018, that all Egyptian banks and branches of foreign banks operating in Egypt are obligated to apply IFRS 9 as of 2019 (CBE, 2019).

Based on the weaknesses of the ICL model, it is predicted that the ECL model will increase the LLRT, as entities are required to consider reasonable and supportable future forecasts of economic conditions, which will result in providing the users with timelier and forward-looking information (IASB, 2014), Kim et al. (2020) investigated the influence of the move to the ECL model on LLRT, the results reveal that this move increases LLRT.

However, the ECL model might lead to more subjective estimates of expected loan losses because it requires significant judgment from the preparers of financial reports, hence, shifting to the ECL model might also lead to a decrease in LLRT (Lim et al., 2018), additionally, the application of the general framework to calculate the ECL requires a large amount of quantitative and qualitative information whether it is historical, represents the current situation, about future forecasts or macroeconomic indicators, therefore the bank must work on developing the necessary systems to provide adequate, accurate, and safe information (CBE, 2019), these requirements may include complexity and considered as challenges for banks.

In addition to the aforementioned, applying the ECL model needs effectual supervision from the bank's board and its related committees to guarantee the proper application of the model (CBE, 2019), so it is predicted that corporate governance (CG) efficiency will influence the relation between applying ECL model and LLRT, in this regard, I test the effect of several dimensions of CG which are board size (BSIZE), board independence (BIND), institutional ownership (INSTIT), CEO duality (DUAL), and audit quality (AQ).

Regarding the studies that investigate the effect of IFRS 9 in the Egyptian context, Shehata (2019) examined the effect of credit losses accounting evaluation according to IFRS 9 and Basel III requirements on banks loans portfolio classifications, using a sample of three banks that voluntarily apply the IFRS 9 during the year 2018 (before the mandatory apply in 2019), the results show that there are significant differences between loan loss allowance based on IFRS 9 and the actual allowance, because the increase in the allowance to meet the ECL, the results also show that there is a correspondence between IFRS 9 and Basel III regarding the measurement and revaluation of ECL, Ibrahim (2018) explored the challenges that the Egyptian banks will find when apply IFRS 9, using the case of the national bank of Egypt during the year 2018, the results showed that the challenges could be the measurement and disclosure's requirements of financial instruments and the measurement and estimation of ECL, as far as I know, there are no studies examined the impact of IFRS 9 on LLRT in the Egyptian context.

The research aims to provide early evidence of the impact of applying the ECL model according to IFRS 9 on LLRT of the Egyptian banks, also, testing the moderating impact of CG efficiency on the relation between ECL model and LLRT, using a sample of 30 Egyptian banks for 2018 and 2019 with total observations of 240, the results show a positive effect of applying ECL model on LLRT, concerning the effect of CG, the results indicate a positive impact of BIND on the relation between IFRS 9 and LLRT, contrariwise, there is a negative impact of DUAL, while BSIZE, INSTIT, and AQ have no impact.

This research provides several contributions, first, it considers among the first few types of research (Kim et al, 2020; Albian, 2019; and Shehata, 2019) that provides early empirical evidence about the implications of the ECL model under IFRS 9, and the second research after Kim et al. (2020) to examine the effect of the ECL model on LLRT, the research also is the first to examine the CG dimensions as determinants of

the relationship between ECL model and LLRT, second, the research results are important for regulators and investors because it supports the effectiveness of the new model, third, these results are important for future reform programs undertaken by regulators in Egypt such as the CBE, fourth, the research adds to the literature of LLRT, by providing evidence that the ECL model increases LLRT.

The rest of the research is classified into six parts: part 2 discusses the institutional framework in Egypt; part 3 shows the literature review and hypotheses development; part 4 presents the research methodology; part 5 introduces the results; part 6 is related to discussion; the last part offers the conclusion.

2. The institutional framework in Egypt

The sector of the Egyptian banking grew considerably in the mid-1970s encouraged by the country's so-called open-door policy, in 1975 the Egyptian parliament issued the banking law No, 120 which defined the nature and mode of operations for all banks, and in the 1990s the Egyptian authorities began influential banking reforms towards a more liberal system (El-Shazly, 2001), CBE completed a banking reform program that commenced in 2004 and finished in December 2008 to strengthen the banking sector and help achieve economic growth, one of the main parts of this program was addressing the issue of NPL, in January 2009, CBE launched the second wave of its reform program scheduled to end by 2011 to continue upgrading banking supervision technical abilities and apply Basel II (CBE, 2009).

As a response to the update in the IFRSs, the CBE decided in its session held on January 17, 2018, that banks are obligated to prepare its financial statements per IFRS 9 as of 2019, and following this decision, the instructions of IFRS 9 are applied to all banks and foreign banks branches operating in Egypt that are subject to the control and supervision of the central bank (CBE, 2019), also, concerning the Egyptian ministerial resolution No. 69 of 2019, some provisions of the Egyptian accounting

standards (EAS) issued by the minister of investment decree No. 110 of 2015 were amended by issuing three accounting standards; one of these standards was the EAS No. (47) for financial instruments, which goes along with IFRS9 (EFRA, 2019).

The new standard introduces a new methodology for recognizing expected losses under a new model based on past, current, and expected events, this research seeks to provide early evidence about the effectiveness of applying ECL model under IFRS 9 in the Egyptian banks which obliged firstly to apply this standard, by examining the impact of ECL model on LLRT as one of the important indicators of banks' stability and risks, this will help in providing recommendations to increase the effectiveness of future reform programs carried out by the CBE.

3. Literature review and hypotheses development

LLR is a main accrual process whereby banks recognize predictable loan losses in the existing period, these results in a decrease in the bank's profits and regulatory capital, which, in turn, can notify the stakeholders to problems that the bank is facing (Bushman, 2014), so the quality of the LLP has a salient impact for banks and their stakeholders (Choi, 2018), the delay in recognizing the expected losses affects the capability of loan loss reserves to meet credit losses during economic downturns. When the reserves are inadequate to cover credit losses, banks are required to recognize more provisions and decrease capital adequacy (Beatty and Liao, 2011), also, Van den Heuvel (2009) confirms that the ability of lending during the downturn is low for banks that delay the recognition of expected losses.

When LLR is timelier, the profitability and regulatory capital of the bank will be affected negatively and in an early manner, which in turn is likely to cause an earlier inspection of the bank by different stakeholders, including external and internal checkers, this inspection improves the chances of earlier detection of fraud in lending, and lower officers' ability to exploit the corruption (Akins et al., 2017).

3.1 The effect of IFRS 9 on LLRT

Based on the ICL model under the preceding IAS 39, a financial asset is impaired when there are events of impairment, examples of these events are the significant financial difficulty of the obligator; a breach of contract; granting a concession to the borrower; and the probability of borrower bankruptcy (IASB, 2001), one of the most important problems of the ICL model is the delay in recognizing credit losses and waiting until they occur, and this was considered as one of the main reasons for the aggravation of the recent global financial crisis (Halilbegovic et al., 2019).

In April 2009, The IASB declared a timetable for substituting IAS 39 in response to the recommendations of the G20 leaders and the international bodies, the replacing project included three main phases, in July 2014, the IASB implemented the second phase which was related to the accounting for ECL on an entity's financial assets, ECL model allows the credit losses to be recognized regardless of the occurrence of the credit event, the new model provides more well-timed information because it updates the ECL since initial recognition to better reflect the modifications in credit risk (IASB, 2014).

According to the ECL model, the financial assets must be categorized into three phases; the first phase is applied when the credit risk of the financial assets does not increase significantly, and when the credit quality deteriorates significantly the second phase is applied, while the third phase is applied in case of default, the loan loss allowance is recognized in the first phase based on 12-month ECL, while in the second and third phases, the allowance is recognized depend on lifetime ECL (IASB, 2014).

Under IAS 39, LLP is only recorded for impaired exposures, whereas ECL requires the LLP to be recorded for all credit exposures based on past, current, and forecasted events, Albian (2019) confirms that banks that apply IFRS 9 do not count more on the incurred loss elements of LLP and there may be other factors that influence these provisions, the shift to the ECL model will probably affect the LLRT positively, as entities are required to consider reasonable and supportable future forecasts of

economic conditions, which will result in providing the users with timelier and forward-looking information (IASB, 2014), using experimental data, Gomaa et al. (2019) found that the introduction of the ECL model increases the adequacy of loan loss reserves over the economic cycle.

Kim et al. (2020) expected that banks that have an accurate expectation of the future economic conditions will recognize the loan losses in a timelier manner in the period after applying IFRS 9 and that based on the limitations of the ICL model, the regulatory intention behind the shift to ECL, and the information signalling role of accounting, their study investigated the impact of the move to the ECL model on LLRT, using a sample of banks from 33 countries, the results showed that this move affects LLRT positively, and also this effect is more noticeable for banks exposed to high risk and banks that have inadequate loan losses before the move.

However, the ECL model demands extensive endeavour to aggregate and process data and unavoidably allows subjective judgments which may offer a path to manipulate earnings (Bushman and Williams, 2012; Albani, 2019; Novotny-Farkas, 2016; Camfferman, 2015), the ECL model allows more discretion to facilitate the incorporation of more information regarding expected losses into LLP, the allowed accounting discretion may increase the opportunistic accounting behaviour that can reduce bank reporting transparency (Bushman and Williams, 2012), the potential allowed discretion as well may affect the comparability of earnings (Gebhardt, 2016).

Also, the calculation of ECL requires the application of automated systems, statistical models, and databases, and therefore the systems must be of high quality whether, in terms of inputs, operations, control, or the results extracted from them (CBE, 2019), these requirements could contain complexity and thus considered as challenges for banks, based on the potential discretion and complexity, the ECL model may attenuate LLRT.

Based on the above discussion, I predict that apply the ECL model will increase the LLRT of Egyptian banks, hence my first hypothesis is:

H1: applying the ECL model will increase the LLRT in the Egyptian banks.

3.2 The impact of CG on the relationship between IFRS 9 and LLRT

IFRS 9 aims to measure credit losses through a future view based on historical, current and expected information, which requires the existence of effective oversight from the bank's board and its related committees and work to provide and protect systems used in the application, accordingly, it is the responsibility of the board to provide an appropriate structure and procedures for governance that ensure proper application of the standard, by defining the roles of committees and business units and ensuring the complementarity of work among them and providing the appropriate infrastructure (CBE, 2019).

Leventis et al. (2013) found out that the increase in CG effectiveness, especially concerning board and audit structures allows banks to recognize larger LLP relative to modifications in NPL compared to banks with an ineffective CG, also, Zagorchev and Gao (2015) found that sound CG was positively associated with LLP. Based on that, I predict that CG effectiveness will strengthen the impact of applying ECL model on LLRT, different hypotheses of CG dimensions were developed namely: BSIZE, BIND, INSTIT, DUAL, and AQ, this can be illustrated as follows:

3.2.1. The impact of BSIZE on the relationship between IFRS 9 and LLRT

BSIZE can be one of the factors that determine the effectiveness of the board's performance, in this regard, controversy has arisen in several academic research, as large boards can provide diversification that helps firms secure the necessary resources and reduce uncertainty. Contrarily, the problems of coordination, communication, and decision-making that hinder the performance of the firms may increase when the number of members increases (Tanna et al, 2011; Goodstein et al, 1994). Yermack

(1996) found an adverse effect of BSIZE on firm value, whereas, Dehaene et al, (2001) noted that BSIZE affects firm performance positively, also, Connelly and Limpaphayom (2004) found that BSIZE does not affect firm performance.

Concerning the effect of BSIZE on LLP, Oyewole et al. (2014) examined the relation between CG mechanisms and credit risk using a sample of 19 listed banks from 2005 to 2009, the study revealed that BSIZE correlated to better credit risk management and decreasing the level of LLP and NPL. Mersni and Ben Othman (2016) tested the effect of BSIZE on LLP using a sample of 20 Islamic banks and found that LLP was negatively associated with BSIZE, also, Kolsi and Grassa (2017) used a sample of 26 Islamic banks to test the same relation and found that Sharia BSIZE has a negative relationship with LLP.

I predict that BSIZE will affect the relationship between IFRS 9 and LLRT positively, as applying IFRS 9 requires boards to perform many tasks to properly implement and achieve the desired benefit, and the increase in board members leads to a diversity of experiences and an increase in the members available to work in various committees which are necessary to participate in the application of the standard, therefore the following hypothesis can be as follows:

H2A: BSIZE has a positive impact on the relationship between ECL model and LLRT.

3.2.2. The impact of BIND on the relationship between IFRS 9 and LLRT

BIND supports the supervision of management and limits opportunistic behaviour, Cheng and Courtenay (2006) found a positive correlation between the BIND and the amount of information disclosed voluntarily, concerning the relationship between BIND and LLP, Kolsi and Grassa (2017) found that BIND has a negative relationship with LLP, while Mersni and Ben Othman (2016) found no relation. I predict that BIND will have a positive effect on the relation between IFRS 9 and LLRT, as I

discussed before, ECL model will introduce subjectivity and BIND is important to decrease the opportunistic accounting behaviour that may be conducted by managers, therefore, the next hypothesis can take place as follow:

H2B: BIND has a positive impact on the relationship between ECL model and LLRT.

3.2.3. The impact of INSTIT on the relationship between IFRS 9 and LLRT

INSTIT has a fundamental role in CG and oversight of management behaviour, whether through direct intervention or the activation of other governance mechanisms, compared to the rest of the shareholders who may not have sufficient shares to enable them to influence management (Shleifer and Vishny, 1986). Feldmann and Schwarzkkopf (2003) find a positive effect of INSTIT on the board efficacy. About the effect of INSTIT on LLP, Kolsi and Grassa (2017) found that INSTIT has no impact on LLP, I predict that INSTIT will have a positive effect on the relation between IFRS 9 and LLRT, as it may decrease the earning manipulation that may be carried out by managers, therefore the following hypothesis can be as follows:

H2C: INSTIT has a positive impact on the relationship between ECL model and LLRT.

3.2.4. The impact of DUAL on the relationship between IFRS 9 and LLRT

There is a debate regarding the effect of DUAL on firm performance (Rahman and Haniffa, 2005 and Mersni and Ben Othman, 2016), according to stewardship theory, DUAL will reduce the interest conflict between the board and the management (Rechner and Dalton, 1991; Bradbury et al, 2006; Liu, 2012), while agency theory argues that DUAL will damp firm performance (Epps and Ismail, 2009). Concerning the effect of DUAL on LLP, Oyewole et al. (2014) found that the separation of powers between the chairman and the CEO increase NPL ratio and LLP, while Mersni and Ben Othman (2016) found no relation.

In Egypt, a decision was issued by the financial regulatory authority (FRA) No. 47 in April 2020, which requires listed firms to prohibit the combination of the positions of the Chairman and CEO, and that following best governance practices and recommendations of the world bank, to improve the control environment in the firm and avoiding conflicts of interest (EFRA, 2020). Based on that, I predict that CEO duality will have a negative effect on the relationship between IFRS 9 and LLRT, therefore the following hypothesis can be formulated as follows:

H2D: DUAL has a negative impact on the relationship between ECL model and LLRT.

3.2.5. The impact of AQ on the relationship between IFRS 9 and LLRT

Kanagaretnam et al. (2010) found that Big 4 auditors affect the extent of bank earnings management through LLP, while Ozili (2017) found that income smoothing by LLP is not decreased by Big 4 auditors, Mersni and Ben Othman, (2016) examined the impact of AQ on LLP and found no relation.

According to the decision of the CBE, which was previously mentioned, it is the responsibility of the auditors to verify the integrity of the bank's procedures regarding methodologies and methods of calculating the ECL, and auditors must provide the CBE with a special report regarding the integrity of the procedures and the adequacy of the provision, and attach this report to the interim and annual financial statements (CBE, 2019). Based on that, I predict that AQ will have a positive effect on the relation between IFRS 9 and LLRT, therefore the following hypothesis can be as follows:

H2E: AQ has a positive impact on the relationship between ECL model and LLRT.

4. Research methodology

4.1. Data description

This research focuses on the banking sector in Egypt due to its special importance in supporting and growing the Egyptian economy, in addition to the increasing risks that banks face continuously compared to other sectors. The research population consists of 38 commercial banks operating in Egypt, based on the CBE report in 2018, I select this population because these banks are subject to CBE supervision and obligated to apply IFRS 9, this research was conducted using data extracted from the quarterly financial reports for a sample of 30 banks for 2018 and 2019 with total observations of 240, this sample represents 79% of the population and includes local Egyptian banks, Egyptian branches of international banks, and Islamic banks, this sample also includes all the listed banks in the Egyptian Stock Exchange (ESE) which count for 13 banks, the research is limited to this sample for two reasons; first, I excluded the specialized banks such as agricultural, real estate and industrial banks due to their different nature from commercial banks, second, I excluded banks with missing data especially some international banks that have branches in Egypt not listed in ESE and prepare consolidated financial statements, finally, the data were processed using the panel corrected standards errors (PCSE) by STATA software.

4.2. The research model

To test the hypotheses, a basic model is designed as follows:

$$LLRT_{it} = \beta_0 + \beta_1 IFRS_{9it} + \beta_2 SIZE_{it} + \beta_3 CAP_{it} + \beta_4 EBLLP_{it} + \beta_5 LINT_{it} + \beta_6 LGROW_{it} + \beta_7 INT_{it} + \beta_8 PROF_{it} + \beta_9 BSIZE_{it} + \beta_{10} BIND_{it} + \beta_{11} INSTIT_{it} + \beta_{12} DUAL_{it} + \beta_{13} AQ_{it} + \varepsilon_{it}$$

According to Beatty and Liao (2011), LLRT can be measured using the proportion of loan loss reserve to NPL, this ratio expresses banks' tendency to recognize not only incurred losses but also the expected risk

in their performing loans, this measure is documented to be used by bank regulators to assess loan credit quality (OCC 2012; Federal Reserve Board 2017), besides, this measure is frequently used by the agencies of credit rating to evaluate the bank's risks (Fitch, 2009), furthermore, this measure does not need time-series data which restrict the sample size (Choi, 2018). Following the literature review of LLRT (Kim et al., 2020; Balakrishnan and Ertan, 2019; Choi, 2018; Akins et al., 2017; Bushman and Williams, 2012; Beatty and Liao, 2011), SIZE, CAP, EBLLP, LINT, LGRO, INT, and PROF were used as control variables. Also, BSIZE, BIND, INSTIT, DUAL, and AQ were used as moderating variables of the relationship between IFRS 9 and LLRT.

Table 1 shows the variables of the research, abbreviations, and measures of each variable, this can be illustrated as follow:

Table 1: Variables measurement

Variables	Proxies		
	Name	Abbreviation	Measure
Dependent Variable	Loan loss recognition timeliness	LLRT	the ratio of loan loss reserves to non-performing loans
Independent Variable	Expected credit loss model under IFRS 9	IFRS 9	Indicator variable equals one in the period after adopting IFRS 9 and zero otherwise. So, it equals one for 2019 (post-adoption) and zero for 2018 (pre-adoption)
Control Variables	Bank Size	Size	Natural logarithm of total assets
	Capital Ratio	Cap	The equity capital as a percentage of total assets at the end of the quarter
	Earnings before LLP	EBLLP	Earnings before LLP for period t scaled by total loans at the beginning of the quarter
	Loan intensity	LINT	Total loans as a percentage of total assets.
	Loan growth	LGRO	Percentage of the quarterly change in total loans
	Interest expense	INT	Quarterly interest costs divided by total liabilities.
	Profitability	PROF	The return-on-equity ratio
Moderating variables	Board size	BSIZE	Number of board members
	Board independence	BIND	The percentage of non-executive directors on the board
	Institutional ownership	INSTIT	The proportional of institutions ownership in the banks
	CEO duality	DUAL	Dummy variable that takes 1 if the CEO is also the chairman of the board and 0 otherwise
	Audit quality	AQ	Dummy variable equals one if the bank audited by Big Four audit firms and zero otherwise

5. Results

5.1 Descriptive analysis

Tables (2) and (3) clarify the descriptive analysis of the research variables in the period from 2018 to 2019 for 30 Egyptian banks. In the table (2) the mean of LLRT in the Egyptian banks is .59. Regarding the control variables, the mean of banks size is 8.83, the equity capital and total loans represent on average 9% and 37% of the total assets consecutively, the maximum of earnings before LLP is 18 %, quarterly interest costs represent 2% of the total liabilities, loan growth and profitability have means of 3% and 6% respectively. Concerning the moderating variables, the number of board members ranges from 6 to 14 members, the representation of non-executive directors on the board is 90% on average, it is clear from the table (3) that CEO duality exists in 51.7% of the sample observations, also 78.3% of the quarterly financial reports included in the sample are audited by BIG 4.

Table (4) shows that there are significant differences ($P < .05$) between LLRT in the year 2018 (before applying ECL model) and in the year 2019 (after applying ECL model), the mean of LLRT before ECL is .50 and after ECL becomes .68, which means that there is an increase in the LLRT after applying ECL.

Table (2): Descriptive analysis

	N	Minimum	Maximum	Mean	Std. Deviation
LLRT	240	.04	2.03	.5947	.474
SIZE	240	6.674	1.142	8.835	1.460
CAP	240	.0104	.185	.094	.037
EBLLP	240	.005	.184	.031	.034
LINT	240	.052	.625	.370	.147
LGRO	240	-.843	.136	.034	.0312
INT	240	.002	.075	.021	.011
PROF	240	.002	.192	.066	.039
BSIZE	240	6.00	14.00	9.466	1.896
BIND	240	.67	1.00	.901	.098
INSTIT	240	.21	.99	.727	.179

Table (3): Frequencies

	IFRS 9			AQ			DUAL		
	Frequency	%	Cumulative %	Frequency	%	Cumulative %	Frequency	%	Cumulative %
0	120	50%	50%	52	21.7%	21.7%	116	48.3%	48.3%
1	120	50%	100%	188	78.3%	100%	124	51.7%	100%

Table (4): Paired Samples Test

	N	Mean	Std. Deviation	Std. Error Mean	Sig. (2-tailed)
LLRTBEFORE	120	.501	.366	.03343	.000
LLRTAFTER	120	.687	.548	.05007	

5.2. Correlation

The correlation matrix is shown in the following table between the dependent variable (LLRT), and all other variables in the basic model.

Table (5): Variables correlation

	LLRT	IFRS9	SIZE	CAP	EBLLP	AQ	LINT	LGRO	INT	PROF	BSIZE	INSTIT	BIND	Dual	VIF
LLRT	1.000														
IFRS9	.196 ***	1.000													1.29
SIZE	.061	.016	1.000												1.46
CAP	.142 **	.037	-.458 ***	1.000											1.75
EBLLP	-.066	.022	-.081	.180 ***	1.000										1.58
AQ	.085 *	.040	.035	.066	-.185 ***	1.000									1.91
LINT	-.187 ***	.026	.044	.124 **	-.060	.130 **	1.000								1.40
LGRO	.069	-.128 **	-.055	.212 ***	.136 **	.131 **	.025	1.000							1.14
INT	.055	-.029	-.029	-.159 ***	.236 ***	-.502 ***	-.338 ***	-.042	1.000						1.96
PROF	-.162 ***	-.049	-.042	.164 ***	.561 ***	-.046	-.012	.208 ***	.361 ***	1.000					1.92
BSIZE	.049	.018	.203 ***	.036	.183 ***	-.298 ***	-.051	.015	.158 ***	.117 **	1.000				1.24
INSTIT	-.008	.063 ***	.170 ***	-.292 ***	-.182 ***	.344 ***	.314 ***	.013	-.187 ***	-.201 ***	-.153 ***	1.000			1.69
BIND	.164 ***	.430 ***	.078	.062	-.028	-.031	.108 **	-.028	-.101 *	-.090 *	-.062	.236 ***	1.000		1.87
Dual	-.005 .468	.300 ***	.090 *	.061	.032	-.104	-.097 *	-.042	-.009	.048	.045	-.050	.538 ***	1.000	1.56

Note: *** significant at 1%, ** significant at 5%; * significant at 10%

Table (5) shows a positive correlation between LLRT and IFRS 9, the results also show a positive correlation between LLRT and each of CAP, AQ, and BIND, while, there is a negative correlation between LLRT and each of LINT and PROF and no correlation between LLRT and each of SIZE, EBLLP, LGRO, INT, BSIZE, INSTIT, and Dual, also, table (5) indicates that the values of VIF (variance inflation factor) of independent variables did not exceed 10, and therefore there is no multicollinearity (Pallant, 2010).

5.3. Regression analysis and testing hypotheses

The research hypotheses were tested with the panel data methodology, according to Hausman test (Prob > chi2 = 0.0919) Random-Effects model was used first to examine the research hypotheses, the Wooldridge test for autocorrelation in panel data indicates a problem of autocorrelation (Prob > F = 0.0000), also, the results reveal a problem of heteroscedasticity (Prob > chi2 = 0.0000), to solve these problems the Panel Corrected Standards Errors (PCSE) method was used, PCSE assumes that the disturbances are by default heteroscedasticity and contemporaneously correlated across the panel.

To achieve the objectives of the research, seven regression models were designed, model (1) is the basic model for testing the effect of ECL model under IFRS 9 on LLRT, and the other models are dedicated to examining the impact of the moderating variables on the relation between ECL model and LLRT, It is clear from the table (6) that the seventh regression model has the top explanation power of LLRT variance, as the value of R square amounted .279, this model is considered the highest model from the remainder of the models, followed by the third model, then the fifth model.

The first regression model indicates a significant positive effect of applying the ECL model under IFRS 9 on LLRT, so the first hypothesis is accepted, also, the results show a positive effect for each of SIZE, CAP, INT, BIND, and AQ on LLRT, conversely, there is a negative effect for each of LINT, PROF, and Dual on LLRT, in addition to that, the results exhibit no effect for each of EBLLP, LGRO, BSIZE and INSTIT on LLRT.

Concerning the effect of BSIZE, BIND, INSTIT, DUAL, and AQ as moderating variables on the relation between IFRS 9 and LLRT, model (2) and model (7) reveal an insignificant effect of BSIZE*IFRS9 on the relation between IFRS 9 and LLRT, Hence, H2A is rejected, model (3) and model (7) show a significant positive effect of BIND*IFRS 9 on the relation between IFRS 9 and LLRT, it means that the positive effect of IFRS9 on LLRT is more marked when the bank board members are independent, hence, H2b is accepted, model (4) and model (7) show an insignificant effect of INSTIT*IFRS9 on the relation between IFRS 9 and LLRT, so H2C is rejected, model (5) and model (7) reveal a significant negative effect of Dual*IFRS9 on the relation between IFRS 9 and LLRT, it means that the positive effect of IFRS 9 on LLRT is attenuated by CEO duality hence, H2D is accepted, finally, model (6) and model (7) show an insignificant effect of AQ*IFRS9 on the relation between IFRS 9 and LLRT, so H2E is rejected.

Table (6): Regression analysis

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6		Model 7	
	Coef	Z												
Constant	-1.38	-3.81***	-1.35	-3.91***	-1.28	-3.74***	-1.33	-3.42***	-1.69	-4.06***	-1.44	-4.09***	-1.75	-3.82***
IFRS9	.143	3.06***	.061	0.44	.457	10.65***	.061	0.65	.254	2.81***	.206	2.00**	.925	3.11***
SIZE	.061	5.82***	.061	5.95***	.065	5.95***	.059	6.16***	.061	5.78***	.061	5.82***	.069	5.91***
CAP	3.71	7.23***	3.73	7.53	3.50	7.12***	3.66	7.41***	3.39	7.56***	3.76	6.79***	3.17	6.56***
EBLLP	.013	0.02	-.038	-0.06	-.152	-0.26	.002	0.00	-.004	-0.01	-.087	-0.14	-.193	-0.28
LINT	-.681	-7.96***	-.684	-7.87***	-.719	-8.44***	-.692	-7.71***	-.664	-8.87***	-.703	-6.85***	-.691	-7.73
LGRO	1.24	1.32	1.25	1.34	1.13	1.29	1.21	1.32	1.07	1.23	1.25	1.33	.941	1.16
INT	10.5	3.62***	10.4	3.58***	9.34	2.85***	10.3	3.47***	9.80	3.63***	10.3	3.54***	8.39	2.76***
PROF	-3.30	-4.53***	-3.28	-4.37***	-3.03	-4.22***	-3.29	-4.57***	-2.99	-4.54***	-3.20	-4.72***	-2.59	-4.26***
BSIZE	.013	2.19**	.008	1.12	.011	2.78***	.012	2.16**	.012	2.26**	.013	2.15**	.015	1.79*
BIND	.972	1.86*	.985	1.86*	.929	1.77*	.971	1.84*	1.28	2.44**	.998	1.98**	1.29	2.40**
INSTIT	-.059	-1.11	-.060	-1.15	-.077	-1.53	-.075	-1.32	-.137	-2.10**	-.049	-0.83	-.140	-2.05**
Dual	-.169	-4.62***	-.173	-4.74***	-.154	-4.23***	-.173	-4.28	-.326	-2.64***	-.181	-3.82***	-.333	-2.63***
AQ	.220	4.56***	.218	4.22***	.211	3.61***	.219	4.46***	.260	4.46	.252	3.96***	.272	3.09***
BSIZE*IFRS9			.008	0.73									-.005	-0.41
BIND*IFRS9					.413	7.03***							.528	4.52***
INSTIT*IFRS9							.096	0.75					-.201	-1.30
Dual*IFRS9									-.268	-1.70*			-.327	-1.99**
AQ*IFRS9											-.077	-0.95	-.023	-0.24
N	240		240		240		240		240		240		240	
R square	0.239		.239		.258		.240		.253		.240		.279	
Model sig	.000		.000		.000		.000		.000		.000		.000	

Note: *** significant at 1%, ** significant at 5%; * significant at 10%

6. Discussion

This research aims to introduce early evidence of the effect of ECL model under IFRS 9 on LLRT of the Egyptian banks, and also to examine the impact of CG on this relation, the dimensions of CG that have tested include; BSIZE, BIND, INSTIT, Dual, and AQ, regarding the first objective, I predicted that IFRS 9 will increase LLRT, table (6) reveals that the coefficient of IFRS 9 is positive and significant, which means that, applying the ECL model increases LLRT, this can be clarified that the new model leads the Egyptian banks to consider reasonable and supportable future forecasts of economic conditions, which will result in providing the users with timelier and forward-looking information, this result also in line with Kim et al, (2020).

About the moderating impact of CG dimensions, table (6) shows that BIND has a positive effect on the relation between IFRS 9 and LLRT as the coefficient is positive and the effect is significant, this can be clarified that BIND is important to increase the board efficiency and decreasing the opportunistic accounting behaviour that may be conducted by managers when applying IFRS 9, the results also reveal that DUAL has a negative effect, as the coefficient is negative and the effect is significant, this means that the separation of chairman and CEO positions improves the control environment in the bank and leads to avoiding the interest conflict, this result is consistent with the decision of the Egyptian FRA No. 47 in April 2020 as mentioned before, the results indicate that there is no effect for each of BSIZE, INSTIT, and AQ on the relation between IFRS 9 and LLRT, these results (especially the non-significant) may vary if the variables are tested again over a larger period.

Concerning the control variables effect on LLRT, the results show a positive effect of SIZE on LLRT which is consistent with Kim et al, (2020), and also, there is a positive effect for each of CAP and INT on LLRT which is consistent with Balakrishnan and Ertan, (2019), conversely, there is a negative effect for each of LINT and PROF on LLRT which also is consistent with Balakrishnan and Ertan, (2019), in addition to that, the results exhibit no effect for each of EBLLP and LGRO on LLRT, this result is different from Kim et al, (2020) who found a positive effect of EBLLP on LLRT.

7. Conclusion

There is a debate around the efficiency of applying ECL model under IFRS 9, whether it will better reflect the general pattern of deteriorations and improvements in the credit quality of financial instruments or it will lead to an opportunistic behaviour of the management because of the subjectivity allowed from the new model, this research aims to investigate the impact of applying the ECL model on LLRT of the Egyptian banks which is considered as an important indicator for bank failure, and also, testing the moderating effect of CG efficiency, five dimensions of CG have tested (BSIZE, BIND, INSTIT, DUAL, and AQ), in addition to some control variables (Size, Cap, EBLLP, LINT, LGROW, INT, and PROF).

The sample size includes 30 Egyptian banks for 2018 and 2019 with total observations of 240, the results reveal that ECL model affects the LLRT of the Egyptian banks positively, BIND has a positive effect on the relation between ECL model and LLRT, in the opposite, DUAL has a negative effect, while BSIZE, INSTIT, and AQ do not affect, concerning the control variables, the results expose a positive impact for each of SIZE, CAP, and INT on LLRT, conversely, there is a negative effect for each of LINT and PROF on LLRT, in addition to that, the results exhibit no effect for each of EBLLP and LGRO on LLRT.

The research introduces three contributions: (1) as far as I know, this is the first research in Egypt that provides early empirical evidence about the impact of ECL model under IFRS 9 on LLRT which is considered as an important indicator for bank stability; (2) the research provides evidence that the impact of applying the ECL model on LLRT varies from a bank to another based on some moderating variables, this impact is more pronounced for banks that have boards characterized by high independence and no CEO duality; (3) the research results are important for regulators and investors, as these results provide empirical evidence to confirm the efficiency of applying the ECL model in banks.

The research is limited by the sample size which is relatively small owing to the limited sample period after adopting IFRS 9, for future studies, I suggest to investigate the standard's long-term effect on LLRT by extending the sample period to more than one year after adoption, and also to test the impact of IFRS 9 on other dimensions of bank procedures and performance.

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**تأثير نموذج خسائر الائتمان المتوقعة بموجب المعيار الدولي للتقارير المالية رقم (٩)
على توقيت الاعتراف بخسائر القروض: دليل مبكر من البنوك المصرية**

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المستخلص

ألزم البنك المركزي المصري البنوك المصرية اعتباراً من عام ٢٠١٩ بتطبيق المعيار الدولي للتقارير المالية رقم ٩، وذلك بهدف تقديم معلومات في الوقت المناسب حول الخسائر الائتمانية المتوقعة، ومع ذلك، فإن تطبيق هذا المعيار بشأن الخسائر الائتمانية المتوقعة يتطلب أحكاماً ذاتية قد تؤدي إلى سلوك محاسبي انتهازي. يهدف هذا البحث إلى دراسة أثر تطبيق نموذج خسائر الائتمان المتوقعة بموجب المعيار الدولي للتقارير المالية رقم ٩ على توقيت الاعتراف بخسائر القروض في البنوك المصرية، كما يهدف البحث إلى اختبار أثر فعالية الحوكمة (حجم مجلس الإدارة، واستقلالية مجلس الإدارة، والملكية المؤسسية، وازدواجية دور الرئيس التنفيذي، وجودة المراجعة) على العلاقة بين تطبيق النموذج وتوقيت الاعتراف بخسائر القروض. وقد تم إجراء هذا البحث باستخدام بيانات مستخرجة من التقارير المالية ربع السنوية لعينة من البنوك المصرية خلال الفترة من ٢٠١٨ إلى ٢٠١٩. توصلت نتائج هذا البحث بالاعتماد على نموذج انحدار Prais-Winsten (PCSE) إلى وجود علاقة موجبة معنوية بين تطبيق نموذج خسائر الائتمان المتوقعة وتوقيت الاعتراف بخسائر القروض، كما أظهرت النتائج أن استقلالية مجلس الإدارة تؤثر إيجاباً على هذه العلاقة، على العكس من ذلك، هناك تأثير سلبي لازدواجية دور المدير التنفيذي، بينما لا يوجد تأثير لكل من حجم مجلس الإدارة والملكية المؤسسية وجودة المراجعة. تتمثل أهمية هذا البحث في أنه يقدم أدلة تجريبية مبكرة من الأسواق الناشئة حول الآثار المترتبة على تطبيق نموذج الخسائر الائتمانية المتوقعة بموجب المعيار الدولي للتقارير المالية رقم ٩، وتعتبر نتائج البحث مهمة للجهات التنظيمية والمستثمرين لأنها تدعم فعالية النموذج الجديد، كما أن النتائج مهمة لبرامج الإصلاح المستقبلية في مصر، علاوة على ذلك، يضيف البحث إلى الدراسات السابقة التي تناولت محددات توقيت الاعتراف بخسائر القروض، من خلال تقديم دليل بشأن تأثير تطبيق نموذج الخسائر الائتمانية المتوقعة.

الكلمات المفتاحية: توقيت الاعتراف بخسائر القروض، المعيار الدولي للتقارير المالية رقم ٩، نموذج خسائر الائتمان المتوقعة، حوكمة الشركات.