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Signaling over income smoothing and IFRS adoption by banks: a panel data analysis on MENA countries

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Abstract

The income smoothing purposes tend to vary across firms and countries depending on firms characteristics and environment. Following an overview of hypotheses, the empirical analysis investigates whether the tendency of bank managers to convey private information over income smoothing depend on IFRS adoption through a panel data model. Regressions are estimated on an unbalanced panel of bank from different MENA economies. Factors related to the local economy, institutional background and bank's characteristics are found to control varying levels of the dependent variable across time and space. We use a panel data estimation approach in order to obtain robust results, overcoming the problems related to serially correlated error terms. Our result indicate that IFRS adoption decrease the tendency to signal over income smoothing. This appears to be because IFRS improve earnings informativeness which reduces bank manager's motivation to smooth income for communication goal.

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1. Introduction

A growing body of literature examines the quality of accounting information associated with income smoothing. Earnings informativeness, one of the most important dimensions of information quality is defined by Francis and Schipper (1999) as the ability of accounting numbers to summarize the information underlying the stock prices. Thus, earnings informativeness is indicated by a statistical association between financial information and prices or returns. It is the power of reported earnings to explain changes in equity values.

The research to date provides mixed evidence whether earnings informativeness is improved by income smoothing. One viewpoint is that managers smooth earnings to reduce information asymmetry and to reveal more information about the firm's future earnings and cash flows (Tucker and Zarowin, 2006, Chaney and Lewis, 1995). That is, discretion is beneficial and income smoothing enhances earnings informativeness as reflected in current stock prices. An alternative view is that income smoothing garbles information which makes stock prices less informative. This viewpoint is based on contracting theory arguing that income garbling is an equilibrium solution because the principal would pay a high premium to compensate the agent, who has the information advantage (Demski and Frimor 1999). In fact, managers may smooth reported income to meet the bonus target (Healy 1985) or to protect their job (Arya et al. 1998). This hypothesis was validated empirically by Key (1997) and Healy and Wahlen (1999).

While the above studies provide convincing evidence of relation between income smoothing and information content of earnings their samples typically exclude banks and other financial institutions due to their unique characteristics. A little attention has been focused on the relation between income smoothing and earnings in formativeness in banks. Kanagaretnam et al. (2003) provide evidence that bank managers use discretionary component of current loan loss provision to reveal banks future earnings prospects. This evidence is consistent with Liu et al. (1997) finding a positive market reaction to the unexpected increase in loan loss provision, but only for banks with low regulatory capital levels in the fourth quarter. By contrast, Ahmed et al. (1999) find no support for the signaling hypothesis for banks.

In contrast to this direction of studies, another strand of research in line with this paper does not examine the association between income smoothing and earnings informativeness, but its determinants. However, these studies (e.g., Kanagaretnam el al 2005) ignore the adoption of International Financial Reporting Standards (IFRS) as a main explanatory factor. In their study, they especially focus on the determinants of signaling by banks through loan loss provisions at a micro-economic level.

Our study adds to this literature by examining whether the tendency to signal over income smoothing (TSOIS) depend on the nature of accounting standard in Middle Eastern and North African (MENA) countries. In other words, this paper examine whether the income smoothing effect on earnings informativeness differ for banks reporting under IFRS versus domestic accounting standards (DAS). Our focus on this relation is motivated by prior research suggesting that earnings management and analyst forecast errors differ for firms reporting under IFRS versus local GAAP (Jeanjean and Stolowy, 2008; Chen et al., 2010) and that earnings are more value-relevant under IFRS than local GAAP some countries (Barth et al., 2008). Earnings reported under IFRS may differ from earnings reported under local GAAP in terms of persistence or in the usefulness of earnings for predicting future cash flows because of differences in reporting flexibility (Atwood et al., 2011). If managers use the increased reporting flexibility under IFRS to convey private information, earnings reported under IFRS may be more associated with future cash flows than earnings reported under local GAAP. However, if managers use their discretion to report earnings optimistically or opportunistically, earnings reported under IFRS may be less associated with future cash flows than earnings reported under local GAAP.

The MENA region is important for a number of reasons. It is fast growing region in terms of commerce, foreign direct investment and portfolio investment by investment management and mutual fund managers. Its banking sector is relatively young with most banks only being established in the 1970s or later (Olson, 2011). Furthermore, the world's largest Islamic banks are located in the MENA region and its mix of different banks permits to consider the effect of conventional and Islamic banks specific factor on earnings informativeness. Anandarajan and Hasan (2010) point out that the countries studied in this research have not been examined in the extant literature and that most of studies focus upon the US.

This study contributes to earnings management literature from several perspectives. First, we are the first researchers to examine the relation between IFRS and TSOIS. In particular, we investigate the effect of IFRS in the association between income smoothing and earnings informativeness. Second, this study is unique in that we focus in MENA countries which is a region less known to the researchers as most studies focusing in the US and European Union countries. Additionally, the difference in sources of accounting standards and legal environment between the countries provides an avenue to further enhance our comprehension of income smoothing and earnings informativeness. Third, in contrast to most other econometric studies at the firm level analyzing income smoothing informativeness (e.g., Kanagaretnam et al., 2005 and Tucker and Zarowin, 2006), we do not use cross-sectional data, but apply more flexible panel data models that incorporate unobserved heterogeneity and are therefore able to reduce the problem of spurious correlations due to unobserved bank characteristics. For example, bank's political environment can influence both the TSOIS and IFRS adoption. Thus, microeconometric studies which do not address these endogeneity problems can lead to biased and inconsistent estimations. The unobserved heterogeneity refers to time invariant bank specific random effects as the business strategy that does not vary over time.

Panel data analysis exploits time series and cross-sectional variations in data and avoids biases associated with cross-sectional regressions by taking the individual specific effect into account (Levine, 2005). It also allows us to exploit cross-country, cross-bank and time-series variations in income smoothing behavior simultaneously. Focusing on a panel of banks from different countries rather than on a single country permits us to learn about an individual's income smoothing by observing the behavior of others. Thus, interdependence between accounting standards and the country specific factors and individual firm's incentives can possibly result in different economic consequences of financial reporting standards (Barth et al. (2008).

The remainder of this paper is organized as follows. Section 2 reviews the literature and develop hypothesis. Section 3 discusses research design, methods, and data collection. Section 4 presents the descriptive statistics and empirical results. Section 5 concludes the findings with discussions and summary.

2. Literature reviews and hypothesis development

Liu and Ryan (1995) and Kanagaretnam, et al (2004) document the use of loan loss provisions for income smoothing purposes. Ma (1988) found no relationship between quality of loan portfolios and loan loss provisions. His results indicated that bank management tends to raise (lower) bank loan loss provisions in periods of high (low) operating income. This study concluded that loan loss provisions were being aggressively used as a tool for income smoothing.

The manager's use of their reporting discretion is categorized by previous studies as either garbling or efficient communication of private information. Beaver et al. (1989) hypothesized that investors interpret an increase in loan loss provision as a sign of strength. Wahlen (1994) found a positive relationship between unexpected loan loss provision and future pre-loan loss earnings changes as well as contemporaneous stock returns. The signaling hypothesis was also investigated by Beaver and Engel (1996) who conclude that the valuation coefficient on the discretionary components of loan loss provision is positive. As Ahmed et al. (1998) noted, if signaling is an important incentive in choosing loan loss provisions, then we should observe a positive relation between loan loss provisions and changes in future pre-loan loss earnings. Contrary to Wahlen (1994) Ahmed et al. (1998) did not find evidence of a positive relation between loan loss provisions and one-year ahead future change in earnings.

To enrich our understanding of earnings informativeness we discuss whether IFRS adoption promotes the Bank managers tendency to signal their private information through income smoothing. Two important hypotheses can be advanced: the first indicates that IFRS adoption can attenuate the tendency to signal and the second insure that IFRS adoption promote this tendency. These two hypotheses imply that, for many reasons, we tend to think that differences in signaling by income smoothing between IFRS users and non users may exist. Our study adds to the accounting literature by examining whether the positive relation between income smoothing and earnings informativeness, one dimension of accounting quality, is more probable in countries using IFRS relative to countries that retain local accounting standards.

Hodgdon et al. (2008) documents that compliance, with the disclosure requirements of IFRS, reduces information asymmetry and enhances the ability of financial analysts to provide more accurate forecasts. As argued by Kanagaretnam et al. (2005), the degree of information asymmetry is positively related to the propensity to signal through loan loss provision. As a result, managers of banks will have less private information to signal through loan loss provision and, consequently, are less likely to use signaling devices including loan loss provision to communicate their private information. This finding suggests that IFRS adoption reduce information asymmetry which reduces Bank managers' motivation to smooth income to communicate their private information about banks' favorable future prospects. This suggests that:
IFRS adoption decreases the use of income smoothing for communication purpose.

Based on another research stream IFRS adoption doesn't necessary reduce the firm's need to income smoothing for signaling purpose because it doesn't necessary improve earnings informativeness. In fact, the benefits of comparability derived from IFRS adoption may not be realized due to disparities in the application of IFRS across countries (Hail et al., 2010). Ball et al. (2003) argue that adopting high quality standards might be a necessary condition for high quality information, but not necessarily a sufficient one. The quality of financial statements prepared after the adoption of IFRS depends on both the quality of these standards and their implementation (Leuz et al., 2003). Hung and Subramanyam (2007) find no evidence that the relative value relevance of net income and book value was higher under IFRS. Schiebel (2007) finds that equity book values under German GAAP had higher value relevance than under IFRS

The goal of establishing IFRS is to develop an internationally acceptable set of high quality financial reporting standards (Alali and Foote, 2012). Using a sample of companies from different countries, a considerable literature finds that companies reporting under IFRS exhibit higher value relevance than non-adopters (Barth et al. 2008 and Horton and Serafeim, 2007). This result is supported by Anandarajan and Hasan, (2010) in MENA countries where firms that have adopted IFRS have higher value relevance than firms in which adhere to local standards. Firms with high quality accounting have a stronger association between stock prices and earnings for two reasons. Firstly, the higher earnings quality better reflects a firm's economic condition (Barth et al. 2001). Secondly, since IFRS relies on a principles-based system, it is more likely to deter fraud and to reduce opportunistic behavior (Carmona and Trombetta, 2008). Kao and Wu (1994) demonstrate that income smoothing enhances the quality of signaling because it reduces noise. The above discussion implies that IFRS adoption enhances the quality of signaling; for that reason, it complements the signaling through loan loss provision. Thus, we hypothesize that:
IFRS adoption increases the use of income smoothing for communication purpose.

3. Model development and data collection

First, a comparison mean test is used to compare the TSOIS between the group of banks adopting IFRS and the other group using local GAAP. Second, we employ unbalanced panel estimations to establish the causal link between the TSOIS and IFRS adoption. In particular, this tendency is included as a dependant variable in a regression following model to examine its association with IFRS adoption. A set of controls variables is selected based on previous income smoothing studies focusing in bank sector.

$$TSOIS = \beta_0 + \beta_1 \mathrm{IFRS} + \beta_2\, BANK\ CONTROL_t + \beta_3\, COUNTRY\ CONTROL_t + \varepsilon_{it} \qquad (1)$$

3.1. The dependant variable

We initially determine the TSOIS for each sample bank. This measure is inspired from previous studies focusing on income smoothing and earnings informativeness. To capture the power of reported earnings to predict future bank perspective, we should, normally measure correlation between present and future earnings. However, Tucker and Zarowin (2006) documents that, using stock price to measure the signaling effect has an advantage over estimating the relation between current earnings and future earnings. This method considers both the direct and the indirect roles of realized earnings by using stock price, which aggregates all publicly available information. Indeed, the earnings information is often used to directly predict future earnings and it can be indirectly used by investors in earnings predictions when investors combine it with information from other sources (Christensen and Demski 2003). Furthermore, the change in (expected) future earnings may be due to a shock that is not captured by current earnings, but it is impounded in current stock price. Thus, we measure the TSOIS by the correlation between stock return and income smoothing degree.

Based on Pincus and Rajgopal (2002) and hunt et al (1997) the income smoothing degree is measured by the standard deviation of earnings before loan loss provision and extraordinary items divided by the standard deviation of reported earnings excluded extraordinary items. The income smoothing ratio is computed for each sample bank using yearly data. Earnings before and after loan loss provision are each scaled by total assets of previous year. Specifically, value of this ratio in excess of 1 indicates more variability in earnings before loan loss provision than in earnings after loan loss provision. This ratio measure the extent to which banks record loss provisions based exclusively on the volatility of earnings without reference to information about the loan portfolio. More specifically, managers record large provisions because earnings are high and low provisions because earnings are low. The degree of provision manipulation depends, thus, in the degree of earnings volatility. The smoothing ratio estimated for each sample bank represents the bank's income smoothing degree over loan loss provision. Bushman and Williams (2012) use the correlation coefficient between earnings before tax and provision and loan loss provision as a measure. This is an indirect measure that is subject to the limitation that this correlation may not result always in smoother earnings.

3.2. The explanatory variables

The IFRS adoption (*IFRS*) is the main explanatory variable in this study. It is measured by a dummy variable equal to 1 if bank use IFRS and 0 otherwise. Banks adopting local GAAP and especially when accounting standards are made by government bodies provide more latitude for income smoothing to satisfy a government purpose (computing income taxes).

To control for non-discretionary components of loan loss provision we include variables considered as possibly explanatory of loan loss provision. These variables are traditionally used for the income-smoothing hypothesis by previous studies as Liu and Ryan (2006) and Fonseca and Gonzalez (2008). *BANK CONTROL* refers to a set of bank-level control variables (*IO, SIZE, RISK and* ∆NPL). *COUNTRY CONTROL* refers to a set of institutional variables (*LE, DL, EL, EE, and EE).*

Following Kallapur and Trombley (1999), we employ the ratio of the market value to the book value of total assets as a proxy for the relative importance of investment opportunities *(IO)*, where the market value of total assets is defined as the ending market value of common equity plus the book value of preferred equity and liabilities. Given that the market-to-book ratio indicates the divergence between market price and book value, banks with higher ratios will have relatively higher information asymmetries and, consequently, greater need for communicating favorable future prospects by managers of such banks (Anandarajan et al. 2005).

The bank size *(SIZE)* is a variable that has to be controlled for because large firms with a high disclosure quality, as documented by Imhoff (1992) have a low information asymmetry resulting in a weaker incentive to signal through loan loss provision. Following Kanagaretnam et al. (2005) Bank size is measured as the natural logarithm of total loans outstanding at the end of each year. This measure is suited for this study mainly because the extent of managerial discretion over loan loss provision essentially depends upon the magnitude of outstanding loans.

Based on, Anandarajan and Hasan (2010), the level of risk *(RISK)* is computed as the ratio of debt to total assets. It is stated to have a moderating effect on the value relevance of reported earnings (Kothari, 2000).
(ΔNPL) is the change in non-performing loans scaled by lagged total assets Δ is used to capture observed changes in portfolio performance.

The legal environment of the country *(LE)* is measured by a dummy variable where it takes a value of 1 if it is a civil law country and 0 otherwise. LaPorta et al. (1997) assume that legal environment is an important variable because it could protect investors from opportunistic manipulation by managers. In general, countries have been categorized based on their legal systems into three broad areas: common law, civil law and religious law – or combinations of these. Managers in common law countries have less accounting flexibility in exercising discretion and a great value relevance of reported accounting numbers compared to civil law countries (Jennings et al., 2004).

The disclosure level (*DL*) is measured by business extent of disclosure index. According to Anandarajan and Hasan (2010), greater levels of disclosure improve investor’s comprehension of the firm’s financial situation and promote a better decision making that is rational and unbiased by information asymmetry.
The extent of liberalization (*EL*) is measured by the foreign direct investment in local economy. Bae and Jeong (2007) found that foreign ownership is associated with more marked monitoring of the firm's activities and, as a result, increased corporate governance and the value relevance of earnings. In this study, we predict that foreign ownership will have a similar influence for banks in the MENA region by increasing the TSOIS.

Economic environment (*EE*) is measured as percentage growth in GDP. Guenther & Young (2000) postulate, that there is an association between the nature of the economic environment and accounting measures of performance. Firms in countries with higher levels of economic activity should perform better and may have an incentive to provide greater information.

The literature indicates that greater economic freedom will increase competition and require companies to increase disclosure thus increasing value relevance. In this study economic freedom *(EF)* was based on the economic freedom index developed by the Heritage Foundation in the United States.

3.3. Sample and data collection

Our sample comprises data from all listed banks in five countries representing the Middle East and the North Africa (Tunisia, Turkey, Egypt, Morocco and Jordan) for the years for the period 1994 to 2011. The data was obtained from a variety of different sources. The accounting information and information about market value was drawn from BankScope, a global database published by Bureau Van Dijk. The economic information, disclosure level and the extent of liberalization was obtained from World Bank database and the economic freedom from Heritage index. All other information was obtained from the International Financial Statistics published by IMF for the sample years in our study. Additionally, we have excluded some banks from our sample because they did not have full financial and stock price data for the whole period of investigation. We also eliminate outlier’s observations on relevant variables which may bias the results. The stock price data were extracted from the Stock Exchange database of the different countries sample while data on share outstanding were hand collected from each bank’s annual financial reports.

Table I provides the mean average values of the key variables of sample banks. The total number of sample publicly traded Banks is 47 of which the highest number is from Turkey (12), followed by Egypt (10), Tunisia (10) and Jordan (10) and Morocco (5). The lowest number of traded banks is from Morocco (5). The table also shows the value of all the independent countries variables used in this study. The legal systems in Tunisia and Turkey are based subsequently on French and German civil law while the legal systems of the others represent a combination of the religious low and civil law based on France. Jordan has the most economic freedom and Egypt the lowest. Turkey has the highest level of accounting disclosure followed by Egypt Morocco and Jordan; Tunisia has the lowest disclosure index. Jordan has the highest level of foreign direct investment in their market and is followed by Egypt, Tunisia and Morocco. Turkey has the lowest involvement of foreign investment in local market. In general, Jordan has the highest level of economic activity measured as a percentage of growth GDP followed by Egypt; Tunisia has the lowest economic level.

Table I: Sample description

Country	Number of observations	legal environment	economic freedom	extent of liberalization	disclosure level	economic environment
Egypt	78	Civil & religious law	56,90	4,66	7,60	5,13
Jordan	82	Civil & religious law	66,10	12,09	5,00	6,22
Morocco	32	Civil & religious law	57,70	2,57	6,40	4,34
Tunisia	99	civil law	58,30	3,62	1,9	4,03
Turkey	98	civil law	59,30	2,28	8,5	4,94

4. Empirical result

In this section, I conduct univariate and multivariate analysis to examine the association between the TSOIS and IFRS adoption.

4.1. Univariate analysis

4.1.1. Descriptive statistics

Table II provides additional descriptive statistics reporting mean, standard deviation, minimum and maximum of debt ratio, investment opportunities, economic freedom and all the independent variables used in our study. Data shows that the sample has rich varieties of banks.

Table II: Descriptive statistics

Variables	Min	Max	Mean	Standard déviation
TSOIS	-0,999	0,999	0,011	0,745
IFRS adoption	0	1	30.2	-
Bank size	3,643	11,028	7,760	1,529
Investment opportunities	-827	9683551,39	1364452,77	1290747,27
Bank risk	-0,313	0,339	0,117	0,051
∆ portfolio performance	-0,909	25,705	0,452	2,358
Legal environment	0	1	49.9	-
Disclosure level	0	9	5,70	2,92
Extent of liberalization	-0,210	23,537	5,217	4,935
Economic environment	-4,8	9,4	4,966	3,144
Economic freedom	51	70	60,00	4,31

TSOIS: correlation between stock return and income smoothing degree (the standard deviation of earnings before loan loss provision and extraordinary items divided by the standard deviation of reported earnings excluded extraordinary items); IFRS adoption: dummy variable equal to 1 if bank use IFRS and 0 otherwise; Bank size: LN (gross loan); Investment opportunities : market value to the book value; Bank risk: total debt to total assets; ∆ portfolio performance: change in non-performing loans; Legal environment: dummy variable takes a value of 1 if it is a civil law country and 0 otherwise; Disclosure level: Business extent of disclosure index; Extent of liberalization: foreign direct investment in local economy/GDP; Economic environment: percentage growth in GDP; Economic freedom: Heritage index

4.1.2. Compares mean test

Table III displays a comparison mean tests used to study the effect of IFRS adoption on the TSOIS. Empirical results show that the TSOIS of banks using IFRS is low compared to that of banks don’t use IFRS. The difference is statistically significant. Therefore, the evidence reveals that banks using IFRS smooth income for signaling purpose less than other banks. This result can be justified by the suggestion of Hodgdon et al. (2008). This study documents that the IFRS disclosure requirements reduces information asymmetry and improve forecasts quality. Additionally, Kanagaretnam et al. (2005) argued that the degree of information asymmetry is positively related to the propensity to signal through loan loss provision which suggest that managers of banks will have less private information to signal through loan loss provision.

This result can be explained otherwise. Banks using IFRS may use income smoothing for opportunistic purpose and not signaling purpose. The research to date provides mixed evidence whether accounting information based on the IFRS exhibit higher quality than those associated with application of local accounting standards (Leuz and Wysocki, 2008). IFRS adoption was associated with a high incidence of non-compliance or incomplete compliance (e.g. Cairns, 2001).

Table III: Compares mean test

Variables	Banks using IFRS	Other Banks	Z value
TSOIS	-0,163	0,091	-1,853*
Bank size	7,536	7,868	-2,132**
Investment opportunities	1973459,294	1083061,009	-6,262***
Bank risk	0,881	0,885	-1,887*
Δ portfolio performance	0,186	0,687	-,915
Legal environment	0,714	1,000	-12,950***
Disclosure levels	5,47	5,78	-4,790***
Extent of liberalization	9,252	3,441	-8,720***
Economic environment	5,661	4,673	-1,801***
Economic freedom	63,56	58,31	-10,050***

Notes: *, **, and *** denote significance at the 0.10, 0.05, and 0.01 levels respectively

Table III summarizes, also, descriptive statistics for bank characteristics by group of bank. Sizes and bank risk, of banks using IFRS are lower than that of other banks. In addition, the group of banks using IFRS belongs to countries with a lower disclosure level than the other group of banks. However, the investment opportunities of banks using IFRS are higher than that of banks don't use IFRS. Furthermore, countries of banks using IFRS are characterized by a higher extent of liberalization and a higher percentage growth in GDP economic freedom compared to other countries.

4.2. Mulitivariate analysis

To estimate the model parameters, we apply the generalized-least square –and fixed effect estimator developed for models of panel data. This methodology is designed specifically to address two relevant econometric issues: the presence of unobserved bank-specific effects and the likely heterogeneity of the explanatory variables. The panel data approach has a number of advantages over the analysis of individual time series or cross-sectional data. It gives more information with less collinearity among the variables, more degrees of freedom and more efficiency, and it can control for individual heterogeneity (Lee and Chiu, 2012). Both fixed and random effects estimators were applied and distinguished on the basis of the Hausman test, which suggested that the random effects specification was more appropriate.

Table IV: Correlation matrix

	TSOIS	SIZE	*IO*	*RISK*	ΔNPL	*LE*	*DL*	*EL*	*EE*	EF
TSOI	1.000									
	1.000									
SIZE	0,104	1.000								
	0,199	1.000								
IO	-0.128	0,125	1.0							
	-0,146	0,167	1.0							
RISK	-0,046	0,090	0,1	1.00						
	-0,149	0,137	0,1	1.00						
ΔNPL	-0,083	-0,060	-	0,07	1.000					
	-0,059	0,046	-	0,01	1.000					
LE	0,161	0,439	-	-	0,126	1.000				
	0,162	0,452	-	0,04	0,116	1.000				
DL	0,017	0,289	0,1	0,01	0,145	-0,196	1.000			
	0,058	0,366	0,0	-	0,141	-0,006	1.000			
EL	-0,095	-0,388	0,2	-	-0,052	-0,459	-0,154	1.000		
	-0,095	-0,455	0,1	-	-0,012	-0,457	-0,346	1.000		
EE	-0,073	-0,163	0,1	0,08	0,128	-0,155	-0,076	0,398	1.000	
	-0,028	-0,108	0,1	0,01	-0,028	-0,061	0,046	0,297	1.000	
EF	-0,119	-0,076	0,0	-	0,008	-0,255	0,004	0,405	0,008	1.000
	-0,138	-0,096	0,0	-	-0,275	-0,203	-0,044	0,260	0,033	1.000

This table provides Spearmen correlation coefficients in the lower triangular matrix and Pearson correlation coefficients in the upper triangular matrix. TSOIS: tendency to signal over income smoothing; SIZE: Bank Size; RISK: Bank risk; IO: Investment opportunities; LE: Legal environment; DL: Disclosure level; EL: Extent of liberalization; EE: Economic environment; ΔNPL: Δ portfolio performance; EF: Economic freedom.

Table IV report the correlation analysis of the explanatory variables, which indicates that the correlations between most of the variables are not high. Additionally, we check the variance inflation factor (VIF) of the variables. The VIF values of the variables in the regressions are less than 10, which indicate that multicollinearity is not a problem.

Table V reports the panel regression results for the relation between the TSOIS and the IFRS adoption. The tests of hypotheses are based on robust standard errors in the presence of heteroscedasticity; autocorrelation is not a problem. The goodness-of-fit measures (*R*2) indicate a model that is explains at least 12.51% of the cross-country variation in TSOIS well. The estimated coefficients of IFRS adoption are similar across the two estimated equations, suggesting that the econometric model is robust.

Table V: The relation between The TSOIS and IFRS adoption

$$TSOIS = \beta_0 + \beta_1 IFRS + \beta_1 SIZE + \beta_2 RISK_t + \beta_3 IO_t + \beta_4 LE + \beta_4 EE_{t3} + \beta_5 DL + \beta_5 EL$$

	Regression 1	Regression 2
Independent variable	Coefficient estimate	Coefficient estimate
IFRS adoption	-0.416*	-1.282*
Bank size	0.049**	0.061**
Investment opportunities	-3.13e-08	2.00e-08
Bank risk	5.843*	3.709*
Changes in portfolio performance	-0.114	-0.166
Legal environment		-0.6459197
Disclosure levels		0.0665471*
Extent of liberalization		0.0559978**
Economic environment		-0.009
Economic freedom		0.049*
R2	12.51%	19.22%

Notes: *, **, and *** denote significance at the 0.10, 0.05, and 0.01 levels respectively

The coefficient on IFRS adoption has a negative signs and is statistically significant. Thus, the hypothesis that IFRS adoption decreases the TSOIS is statistically supported by the sample data. In other word, banks using IFRS have weaker incentives to signal than other banks. However, managers in banks using local accounting standard have incentives to attenuate perceived undervaluation of their banks by communicating their private information about their banks' favorable future prospects.

The coefficient on Bank size is significantly positive. This implies that managers in larger banks have stronger incentive to signal than those in smaller banks. One interpretation of this finding is that the monitoring of larger banks by institutions and analysts and disclosure quality reduce information asymmetry between managers and investors (Kanagaretnam et al., 2005). Although that, managers in such bank haven't got enough information to communicate through income smoothing they can't smooth income for opportunistic goal due to the regulator monitoring.

Bank risk has a positive effect on the TSOIS. The positive coefficient is statistically significant and implies that bank risk increase TSOIS. In fact, the information asymmetry associated with the bank risk increases the manager's incentives to signal their information about their banks' future favorable prospects.

The coefficient on disclosure level is positive and significant. This result seems to show that greater disclosure level increase the income statement transparency witch reduce information asymmetry (Anandarajan and Hasan, 2010). Thus, the information transparency promotes better decision making and reduce opportunistic practices.

The positive coefficient of the liberalization extent indicates that the higher foreign ownership is associated with greater level of the TSOIS. Bae and Jeong (2007) provide an explanation. Foreign ownership is associated with more monitoring of the bank's activities, increased corporate governance and improved quality of reported earnings. The earnings quality increases the income smoothing for signaling purpose.

5. Conclusion

Aiming to combine the two streams of literature on income smoothing and accounting standard, in this paper we ask whether IFRS adoption promotes the Bank managers' tendency to signal their private information through income smoothing. To this end, using a panel data approach, I examine the empirical relationship between the TSOIS and the IFRS adoption.

Our empirical analysis indicates that the association between income smoothing and earnings informativeness strongly interacts with IFRS adoption. Specifically, the TSOIS varies negatively with bank IFRS adoption. This result is robust to the inclusion of various countries control variables.

Our results have implications for accounting information users and for bank's policymakers. The comprehension of the relation between the TSOIS and IFRS adoption will enable users to better understand and interpret the information conveyed by reported financial statement. Moreover, by understanding the conditions under which managers smooth income to communicate their private information, auditors can better distinguish between the use of accounting method for opportunistic purposes and their use to increase the value relevance of earnings.

Our findings also have implications for interpreting the findings of prior research and for future research in this area. By controlling for country and bank heterogeneity using the panel data approach, this study provides not only a clear picture of the relationship between the TSOIS and IFRS adoption, but also a more accurate inference than that shown by time-series or cross-country data alone. The additional degrees of freedom provided by panel data reduces the collinearity among explanatory variables and also reduces the bias arising from omitted variables (Khanna et al, 1995). The panel data approach provides more powerful estimates, and it also allows us to increase the information available coming from the cross-sections. Furthermore, strengthen the importance of accounting standard choice in the use of income smoothing as a signaling instrument. This suggest that our results have implications for interpreting the findings of research on income smoothing and accounting standard

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