

Loan Loss Provisions and Income-Smoothing Hypothesis: Experience from Turkish Banking Sector

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Extensive research have examined the role of loan loss provisions in capital and earnings management in banking sector. To date, no studies have explored this relationship in Turkey concept. Using a sample of 28 commercial banks for 2005-2011 period, this study investigates whether banks operating in Turkey use loan loss provisions to smooth their income streams by using panel data analysis. We also test whether loan loss provisions are used as a tool to signal managers' expectations about future bank profits to investors. The empirical evidence supports the income smoothing hypothesis for the Turkish Banking Sector but it disappears during the global financial sector crisis (2007-2009 period). It should also be noted that income smoothing behavior of the foreign banks are much more stronger than the domestic banks. Results also confirm the signaling hypothesis that bank managers use loan loss provisions to give some private information about their banks' favorable future prospects.

JEL Codes: C33, G21, M41

Field of Research: Accounting, Banking

1. Introduction

Financial statements are very important tools as they establish the communication between companies and investors. The quality and accuracy of financial statements influence to a great extent the evaluations and decision making processes of investors and the other actors in the economy. However, sometimes financial statements can be prepared to achieve self-interests of managers or companies. Unfortunately, manipulating these reports gives damage to both real and financial sectors and unfortunately to investors. In this study, income smoothing as an earnings management technique has been studied in the Turkish banking sector.

The purpose of this research is to investigate the income smoothing behavior of banks operating in Turkish banking sector. Because Turkey is currently one of the most important developing countries and importance of banking sector is accepted worldwide, we combine these two and argue that Turkey banking sector offers a convenient research area to examine income smoothing hypothesis.

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During the last few decades, evolving nature of the reforms and developments of Turkish banking sector to achieve the harmonization with the well-integrated market economy is so astonishing. Strong and evolving structure of Turkish banking sector have boosted foreign direct capital flows towards the banking sector, resulting in considerably increased value of banks operating in Turkey. Although the sector experienced some structural problems, East Asian crises and related financial crises at times, it had improved rapidly thanks to The Banking Sector Restructuring Program. Moreover, the determination of Turkey to become a permanent member of European Union motivated banking authorities to implement regulations consistent with those in European Union (Isik & Hasan, 2003). Also, although the destructive effects of global financial crisis has been experienced worldwide and doubts concerning the sustainability of strength of Turkish economy, sound and secure structure of Turkish banking sector helped it to recover and mitigate the impacts of the crisis sooner than anticipated. As a result, the financial position of Turkish banks has not deteriorated to the same extent as was the case with banks in other emerging and developed economies (Assaf et al. 2012).

This paper extends the literature in several ways. In recent years, extended research on loan loss provisions has been conducted both in banking sectors of the United States and Europe. Most of these studies examine loan loss provisions in the context of earnings management, capital management and use of loan loss provisions as a tool to signal private information to stock market. However, there is a rarity of similar research for emerging markets. Our primary motivation for this research is to take one step further in literature by reducing the research gap related to emerging markets. In this context, our research focuses on Turkey as one of the most important emerging markets. By doing this, we hope to reduce the gap in this area and get results that lead way to studies examining loan loss provisioning and income smoothing behavior of other developing countries. Furthermore, because there is no study about income smoothing in Turkish banking sector, this study has a potential to make some contribution to the literature. Besides, there has been a large debate on loan loss provisioning policies (Beatty & Liao, 2014). Loan loss provisions play very important role in much of the banking literature as they are closely related with loan losses which affect banks' performance. However, there has been an emphasized concern on measurement and transparency aspects of loan loss provisions, particularly estimation and timing of these provisions (El Sood, 2012). From this point of view, results of this study are expected to be beneficial for bank regulators and policy makers to some degree. Also within this study, we investigate whether income smoothing behavior is different for different bank groups (public-private capital banks, foreign-domestic capital banks and publicly traded banks). There has not been much research on different bank groups, and if there is some difference in income smoothing behavior among these bank groups it will be useful to examine these banks in more detail. Last but not least, as a difference from other studies, our study investigates the effects of global financial crisis of 2008 on income smoothing behavior of Turkish banking sector.

In this study we replicate the research of Greenawalt and Sinkey (1988) who examine the loan loss provisions and banks' income smoothing behavior in the US banking industry. Using the same methodology, but testing different hypotheses and variables appropriate to the Turkish banking industry, we examine the role of loan loss provisions in the Turkish banking environment. During the 2005-2011 time horizon, we find that banks in the sample use loan loss provisions to smooth income over the time. This finding is similar to other studies in this research area (Greenawalt & Sinkey 1988, Ma 1988, Collins et al. 1995, Bhat 1996, Hasan & Hunter 1999, Leaven & Majnoni 2002, Shrieves & Dahl, 2003,

Kanagaretnam et al. 2004, Anandarajan et al. 2005). Also, we find that income smoothing behavior is not same for all bank groups. As differentiated from other studies, loan loss provisions are used widely for foreign capital banks in our banking sector sample. Finally, we find evidence of disappeared income smoothing behavior during the financial crisis period (2007-2009).

The rest of the paper is structured in the following way. Section 2 develops hypotheses that will be submitted to validation. Section 3 describes the database, variables and methodology used. Section 4 reports the empirical results of income smoothing and other obtained results. Finally, Section 5 concludes the paper.

2. Literature Review

In broader terms, *“income smoothing is an earnings management technique designed to remove peaks and valleys from a normal earnings series, including steps to reduce and “store” profits during good years for use during slower years”* (Mulford & Comiskey, 2002). Although there are lots of descriptions related to income smoothing, the common point is that income smoothing refers to decreasing variations in income over time to obtain smoother income streams.

There are many reasons why managers smooth income. Most common reason is reducing the risk perception of the firm. Because a stable earnings stream is perceived as less risky by market participants, it can result in higher firm value (Beidleman 1973, DeFond & Park 1997, Michelson et al. 2000). Income smoothing also results in lower borrowing costs and lower cost of capital (Dechow et al. 1995, Gebhardt et al 2001, Kanagaretnam et al. 2003). Banks play a very important role in the financial system, thus financial stability of the banking system has a crucial importance. Bank managers may try to reduce variability in earnings by decreasing fluctuations to improve risk perception of banks (Bhat, 1996). This decreased risk perception may increase bank's firm value, its perceived quality and strength. Other reasons for income smoothing include political cost considerations, management bonus plans, job security concerns and taxes (Watts & Zimmerman 1990, Moses 1987, Fudenberg & Tirole 1995). Although financial validity of income smoothing benefits are arguable, smoothing income as an earnings management technique has been used in many industries (Rivard et al. 2003).

Earnings management studies have been very popular in accounting literature for years. According to a recent research of earnings management on SSRN, produced 2,647 articles, including 27 of them with more than 5,000 or more downloads (Hansen, 2015). Though the literature related to income smoothing practices addressed in industrial firms extensively (Gordon et al. 1966, Copeland 1968, White 1970, Beidleman 1973, Imhoff 1977-1981, Eckel 1981, Ronen & Sadan 1981, Fudenberg & Tirole 1995, Godfrey & Jones 1999), also addressing the banking sector allows us to gain new perspectives on earnings management practices in more detail.

The loan loss provisions are of particular interest to bank earnings management studies as they are the largest accrual in the banking industry and they affect both capital and earnings simultaneously (Beatty & Liao, 2014). Generally accepted accounting principles and many accounting policies provide managers with considerable flexibility in preparing financial statements. It is usually this flexibility that constructs a suitable environment for income smoothing practices. Based on existing literature, considerable flexibility in

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determining amount and timing of loan loss provisions, banks smooth their earnings by manipulating this account (Bhat, 1996, Rivard et al. 2003). However, studies related to discretionary behavior of managers depend extensively on vague modelling issues (McNichols, 2001). The reason is that there is no consensus on a preferred model, so most earnings management studies relies on different discretionary models. Also studies related to comparing the validity of these models are very rare (Hansen, 2015). More research in the area of loan loss provisioning behavior will enhance our understanding about discretionary behavior embedded in earnings management practices. In addition to loan loss provisions, timing of realized security gains and losses (Beatty et al 2002, Shrieves & Dahl 2003) can be used as a tool for income smoothing practices.

There are conflicting results about income smoothing practices for the banking sector. Earlier studies concluded that banks use loan loss provisions as a tool for earnings management (Greenawalt & Sinkey 1988, Ma 1988). Greenawalt and Sinkey (1988) find that large bank-holding companies use loan loss provisions to smooth income with the motives of reducing risk perception, compensation and agency problems, accounting practices and regulatory constraints concerning dividend payments. Similarly, Collins et al. (1995), Bhat (1996), Hasan and Hunter (1999), Leaven and Majnoni (2002), Shrieves and Dahl (2003), Kanagaretnam et al. (2004), Anandarajan et al. (2005) find evidence that banks smooth income via loan loss provisions. On the other hand, Wetmore and Brick (1994), Beatty et al. (1995), Ahmed et al. (1998) find no relationship between loan loss provisions and income smoothing.

Some studies focus on detecting income smoothing behavior among banks while the others focus on identifying the determinants of income smoothing. Leaven and Majnoni (2002) suggest that bank managers are motivated to smooth income to meet regulatory capital requirements over the economic cycle. They argue that smoothing income reduces variations in bank's profits and possibility of negative impact on bank capital, especially during recession times. Beatty and Harris (1999) and Beatty et al. (2002) suggest that bank size, level of indebtedness, nature of control, listing on stock market, etc. are the major factors that affect income smoothing behavior. Kanagaretnam et al. (2005) suggest that banks smooth income when need for external financing arises, also they show the concern for preserving the post of a manager could be the determinants of income smoothing.

Besides earnings management concerns, banks use loan loss provisions for capital management practices. For capital management purposes, managers try to hold capital ratios at a level which do not violate the regulatory capital requirements, so they can use loan loss provisions to adjust capital ratios. Moyer (1990), Scholes et al. (1990), Beatty et al. (1995), Collins et al. (1997), Kim and Kross (1998), Ahmed et al. (1998) find banks use loan loss provisions as mechanisms for capital management.

Another motive for using loan loss provisions that has been discussed in the literature is to signal future earnings to stock market. The idea behind this argument is that the market could see the provisions as a signal of bank managers' private information about possible future earnings (Curcio & Hasan 2008). Beaver et al. (1989) suggest that loan loss provisions can remark that '*management perceives the earnings power of the bank to be sufficiently strong that it can withstand a "hit to earnings" in the form of additional loan loss provisions*'. Most of the studies related to signalling theory (Beaver 1989, Elliot et al. 1991, Griffen & Wallach 1991, Wahlen 1994, Liu & Ryan 1995, Beaver & Engel 1996,

Kanagaretnam, Lobo & Yang 2003, Ghosh 2007) show that future earnings are positively related to loan loss provisions. On the contrary, Ahmed et al. (1998) found a negative relation between loan loss provisions and stock returns.

As discussed in the introduction section, the motive for this study is to investigate whether Turkish banking sector uses loan loss provisions for income smoothing practices. We have used appropriate panel data analysis techniques to detect income smoothing behavior. We also have splitted the banking sector into different groups (public-private deposit banks, banks with domestic-foreign capital and publicly traded -banks trading in ISE 100 index-banks) to see whether different bank groups differ in practicing income smoothing behavior. In addition to income smoothing, signalling hypothesis has also been tested in this study. We have also examined the effects of global financial crisis (2007-2009) on income smoothing behavior of Turkish banking sector.

3. Hypotheses and Methodology

3.1 Research Hypotheses

Building upon research evaluated above, we assume that banks prefer smoother income, all else being equal. The main hypothesis of this study focuses on whether income smoothing is a driving factor on the loan loss provisions. Like many other studies argue, Ahmed et al. (1998) state that when earnings are too low, loan loss provisions are expected to be deliberately understated. Several prior studies hypothesize positive relation between loan loss provisions and income (before loan loss provisions). To detect the income smoothing behavior of the banks, first null hypothesis examines the relation between net income before loan loss provisions and loan loss provisions account as stated below:

H1₀: There is no relationship between the net income before loan loss provisions and the loan loss provisions (LLP) account.

To determine whether the changes in the amount of the loan loss provisions account is driven by income smoothing behavior or the other factors such as macroeconomic factors and variables related to loans quality and amount, many other factors have been examined.

Growth rate of total loans of banks are thought to be positively related to associated risk that this growth in loans have potential to decrease quality of loan portfolios. A cautious bank should therefore has positive relation between its loan loss provisions and total loans and similarly nonperforming loans accounts (Greenawalt & Sinkey 1988, Beaver & Engel 1996, Leaven & Majnoni 2002, Fonseca & Gonzalez 2008, Kanagaretnam et al. 2010, Cheng et al. 2011). Also there is a strong relation between loan charge-offs and loan loss provisions that managers expecting more charge-offs will need a larger loan loss provisions. Above models which include total loans and nonperforming loans also include the loan charge-off variables (Beaver & Engel 1996, Kim & Kross 1998, Kanagaretnam et al. 2010, Beck & Narayanmoorthy 2013). Null hypotheses related to amount and quality of bank's loan portfolio are as stated below:

H2_{0a}: There is no relationship between total loans and the loan loss provisions account.

H2_{0b}: There is no relationship between nonperforming loans and the loan loss provisions account.

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H2_{0c}: There is no relationship between loan charge-offs and the loan loss provisions account.

H2_{0d}: There is no relationship between loan loss provisions_t and the loan loss provisions_{t-1}. In general when the economy improves, managers lower provisions for loan losses as higher proportion of loans can be collected under good economic conditions (Hansen 2015). As an indicator of general economic environment, inflation and interest rate have a negative impact on loan loss provisions. Higher inflation and higher interest rates decrease the purchasing power of consumers and their ability to pay back their loans, so managers tend to increase loan loss provisions (Rivard et al. 2003). On the contrary, higher GDP improves borrowers ability to pay as managers lower provisions on loan losses (Leaven & Majnoni 2002). Null hypotheses related to macroeconomic factors are as stated below:

H3_{0a}: There is no relationship between inflation and the loan loss provisions account.

H3_{0b}: There is no relationship between interest rate and the loan loss provisions account.

H3_{0c}: There is no relationship between gross domestic product and the loan loss provisions account.

In addition to above hypotheses, signalling hypothesis has also been tested to see if the bank managers use loan loss provisions to signal future positive changes in earnings. In the context of signalling hypothesis, a positive relation between loan loss provisions of current period and income of subsequent period is expected. The positive association between these two can be interpreted as the stock market could perceive the loan loss provisions as a signalling tool which reveal bank managers' private information about future earnings (Curcio & Hasan 2008). The null hypothesis about signalling behavior is as stated below:

H4₀: There is no relationship between current period loan loss provisions and one-year-ahead income before loan loss provisions.

3.2 Data, Variables and Model Specification

The sample for this study consists of 28 banks operating in Turkish banking sector for seven years (2005-2011) in the form of quarterly periods. The banks included in the study are public deposit banks, private deposit banks and foreign capital deposit banks. Because of their different operation and profit seeking policies, development, investment and participation banks are not included in study.

Financial statements such as balance sheets, income statements and financial statement footnotes have been examined on quarterly basis and these data have been obtained from the database of Banking Regulation and Supervision Agency of Turkey. Total sample consists of 775 bank-year observations as some banks have missing period values.

Variables included in the study have been observed under three groups. Based on prior research on income smoothing hypothesis, usually the relation between loan loss provisions and income before loan loss provisions is examined. While dependent variable is loan loss provisions account independent variables used in the model are specified according to the objective of the research. In this study, a model which has similar variables to those of Greenawalt and Sinkey's (1988) model has been used. Differently from their study, we did not analyze regional differences in banking industry as Turkish

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banking sector is not as big as their US sample. However we make analyses including different bank groups (according to capital compositions, public-private-foreign-domestic, etc.) to see whether there is a difference among these banks related to income smoothing behavior. Greenawalt and Sinkey (1988) formulated the loan loss provisions as a function of an income variable, a proxy for the external factors affecting the quality of the bank's loan portfolio (macroeconomic factors, loan defaults in the bank's area) and many other control variables (loan volume, loan policy, loan mix, historical loan-loss experience) likely to affect the change in loan loss provisions. By observing the strength of the relations between the loan loss provisions and other included independent variables we could understand whether changes in loan loss provisions account is result of income smoothing behavior or the other factors.

First group of independent variable in our model is chosen for detecting income smoothing behavior. To test the income smoothing hypothesis in the banking sector, relation between loan loss provisions and income before loan loss provisions should be examined. Association between these two variables is expected to be positive.

Second group of independent variables are variables related to amount and quality of banks' loan portfolios. These variables are total loans (Wetmore & Brick 1994, Lobo & Yang 2001, Rivard et al. 2003, Fonseca & Gonzalez 2007, Taktak et al. 2010), nonperforming loans (Greenawalt & Sinkey 1988, Lobo & Yang 2001), loan charge-offs (Wetmore & Brick 1994, Kanagaretnam et al. 2003) and loan loss provisions of the previous period (Kanagaretnam et al. 2003, Fonseca & Gonzalez 2007, Taktak et al. 2010). Because these variables show deterioration in loan quality, positive relation between loan loss provisions and these variables is expected. And the last group of independent variables consist of macroeconomic factors such as inflation (consumer price index-CPI) (Rivard et al. 2003), interest rate (overnight interest rate) (Ghosh 2007) and gross domestic product (GDP) (Fonseca & Gonzalez 2007, Curcio & Hasan 2008, Hong & Xu 2009). Of these macroeconomic variables, interest rate and inflation are expected to be in positive relation with loan loss provisions, as increase in inflation or interest rate could weaken the borrowers' ability of payment. However, increase in gross domestic product may increase the ability of payment, negative relation with this variable and loan loss provisions is expected. By looking at the signs and the strengths of relations between loan loss provisions and the independent variables, we can judge the major factors affecting the loan loss provisions. Also it should be noted that all these variables except macroeconomic variables have been normalized by total assets to eliminate the effect of size differences among the sample banks.

In addition to income smoothing hypothesis, signalling hypothesis has also been tested in this study. To test the signalling hypothesis our dependent variable is one-year-ahead net income before loan loss provisions loan and independent variables are loan loss provisions, charge-offs and nonperforming loans of current period and the (Wahlen 1994).

Finally the model examined in this study as a function is as follows:

Loan Loss Provisions_t = f (Net Income Before Loan Loss Provisions_t, Total Loans_t, Loan Charge-Offs_t, Nonperforming Loans_t, Loan Loss Provisions_{t-1}, One-Year-Ahead Net Income Before Loan Loss Provisions_{t+1}, Consumer Price Index_t, Interest Rate_t, Gross Domestic Product_t)

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To estimate the models used for income smoothing hypothesis, there are wide variety of estimation techniques. Some of them are generalized-least-squares or ordinary-least-squares estimation techniques (Greenawalt & Sinkey 1988, Kanagaretnam et al. 2005), static and dynamic regression models (Hong & Xu 2009), error components models (Wetmore & Brick 1994), simultaneous equation models (Kim & Kross 1998, Shrieves & Dahl 2003), panel regression models (Ahmed et al. 1999, Lobo & Yang 2001, Fonseca & Gonzalez 2007, Ghosh 2007, Curcio & Hasan 2008). Results of income smoothing studies vary from each other extensively due to different statistical techniques. Therefore, it is very important to use the right methodology to test the income smoothing hypothesis. In our study differently from study of Greenawalt and Sinkey (1988) we use panel regression analysis as our sample size is relatively small and because of the fact that panel regression analyses give strong and significant results even in small samples (Baltagi 2005).

4. Empirical Results

Panel regression analysis of the model used in this study has been done by using EViews 6 statistical programme. Descriptive statistics for the variables used in the study are presented in Table 1. The mean (standard deviation) value of loan loss provisions is 3% (10%). The mean (standard deviation) value of total loans is 43% (22%). The mean (standard deviation) value of nonperforming loans is 4% (10%). The mean (standard deviation) value of loan charge-offs is 0,4% (2%). And the mean (standard deviation) value of income before loan loss provisions is 1,7% (1,6%). Because high standard deviation or variance values mean high variability, relatively small value of the standard deviation of income before loan loss provisions can be interpreted as smoothness of income.

Table 1: Descriptive Statistics

Variables	Mean	Median	Maximum	Minimum	Standard Deviation	# of Obs.
Loan Charge-Offs	0,004	0,0000	0,486	0,0000	0,029	775
CPI	0,021	0,017	0,057	-0,003	0,014	775
Interest Rate	0,019	0,014	0,599	-0,364	0,202	775
GDP	0,011	0,015	0,027	-0,035	0,015	775
Income Before LLP	0,017	0,015	0,125	-0,075	0,017	775
LLP	0,034	0,014	0,783	0,000	0,104	775
Total Loans	0,431	0,487	0,861	0,000	0,222	775
Nonperforming Loans	0,040	0,019	0,927	0,000	0,110	775

Before estimating the models and aiming at preventing spurious regressions, all variables submitted to Levin, Lin and Chu's (2002) panel unit root tests. According to the unit root test results, all variables in the model except interest rate (interest rate is stationary at first difference, $p= 0.01$) do not have unit roots. In order to assess the risk of high multicollinearity, the variance inflation factor (VIF) test and Pearson's cross-correlation matrix were performed. Kennedy (1998) states that the risk of multicollinearity is considered as an important problem when the VIF is greater than 10 or when the cross-

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correlation coefficients among the regressors are greater than 0.8. Neither of the parameters used in the study is extrapolated, meaning that there is no evidence of high multicollinearity. As a last step to prepare data to regression analyses, we deflated all variables with total assets to control possible size effects among banks.

As explained previously, Hausman Test Statistics is used to determine which panel analysis (random or fixed) is appropriate for the study. Under the null hypothesis of existence of random effects, according to Hausman Test Statistics null hypothesis is rejected at 5% level of significance that means panel fixed effects model (cross-section and period) is suitable for our model.

Table 2: Hausman Test Statistics

Test Summary	Chi ² Statistics	Chi ² Degrees of Freedom	P Value
Cross-Section Random	242,172443	8	0,0000*
Period Random	24,391094	8	0,0020*

*,** Indicates statistical significance at 5% level.

Empirical results are summarized in Table 3. Results show evidence of income smoothing in Turkish banking sector. Income before LLP has positive coefficient (23,53%) and the relation between income before LLP and LLP is significant at 5% level ($p = 0.0367$). Based on regression results, it is possible to say with considerable confidence that loan loss provisions are affected by earnings. In addition to income before LLP, loan charge-offs ($p = 0.0000$) and nonperforming loans ($p = 0.0000$) are significant at 5% level. Coefficient for the nonperforming loans is positive as expected, but coefficient for the loan charge-offs is negative and this direction of relation is not expected. Loan charge-offs show uncollected loans removed from bank's balance sheet and increase in this variable causes an increase in the loan loss provisions as a precaution against losses. Negative relation between this variable and LLP can be result of bank managers' optimism about cleaning off the bad debts from loan portfolio. Also it should be noted that, although results support income smoothing hypothesis, the explanatory power of nonperforming loans on loan loss provisions is higher than explanatory power of net income before loan loss provisions. This result reveals that the variable which affects the changes in loan loss provisions is mostly nonperforming loans, not the net income.

We have also analyzed whether different bank groups differentiate in income smoothing behavior. To test this, we have grouped banking sector into public-private deposit banks, banks with domestic-foreign capital and publicly traded (banks trading in ISE 100 index) banks. Results demonstrate that only banks with foreign capital show income smoothing behavior. For these banks, relation between income before LLP and LLP is positive and significant at 10% level ($p = 0.06$). Relation between income before LLP and LLP is not significant for other bank groups. In these banks, loan loss provisions is affected mostly by changes in nonperforming loans (significant positive relation at 5% level). To control size effects among banks, we deflate all variables in the analysis by total assets. According to financial markets reports of Banking Regulation and Supervision Agency of Turkey (reports between 2005-2011), banks with private capital are the most profitable and biggest (in asset size) banks in Turkish banking sector. On the other hand, banks with foreign capital are the least profitable and smallest in asset size before investment, development and participation banks. However, because our sample does not include investment, development and participation banks, banks with foreign capital are the

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smallest (in asset size) bank group in our sample. On the basis of previous research, it is argued that larger firms are more likely to smooth income than smaller firms (Albrecht 1990, Carlson & Bathala 1997). Unlikely, when splitted into different bank groups, the only income smoother banks in our sample are foreign-capital banks. This finding contradicts with studies related to firm size and income smoothing behavior, as foreign capital banks are the smallest banks (in asset size) in this study. However, to justify this relation, more tests should be done as we did not analyze size effect on income smoothing behavior of banks in this study. Results about different bank groups are in Table 4.

Table 3: Panel Regression Results

Dependent Variable: Loan Loss Provisions		
Method: Panel Least Squares		
	Panel Fixed Effect Model (Cross-Section, Period Fixed Effects)	
	R ² : 0,884471	
	P value (F Statistics): 0,0000*	
Variables	Coefficient	P value (t statistics)
Loan Charge-Offs	-0,2512	0,0000* (-4,8077)
CPI	-0,0174	0,9646 (-0,0443)
Interest Rate	0,0072	0,8030 (0,2495)
GSYH	0,2924	0,4044 (0,8342)
Income Before LLP	0,2353	0,0367* (2,0929)
Total Loans	-0,0079	0,6928 (-0,3951)
Nonperforming Loans	0,6088	0,0000* (28,8493)

*, ** Indicates statistical significance at 5% level.

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Table 4: Different Bank Groups in the Turkish Banking Sector

Dependent Variable: Loan Loss Provisions _t (LLP)										
Method: Panel Least Squares										
	Public Deposit Banks		Private Banks	Deposit	Domestic-Capital Banks		Foreign-Capital Banks		Publicly Traded Banks	
Variables	Coefficient	<i>P</i> Value	Coefficient	<i>P</i> Value	Coefficient	<i>P</i> Value	Coefficient	<i>P</i> Value	Coefficient	<i>P</i> Value
Loan Charge-Offs _t	5,833	0,491 (0,692)	0,0002	0,970 (0,039)	0,001	0,791 (0,266)	0,020	0,797 (0,257)	0,014	0,663 (-0,437)
CPI _t	-0,02	0,533 (-0,623)	0,001	0,870 (0,164)	-0,003	0,676 (-0,418)	0,172	0,316 (1,006)	-0,011	0,308 (-1,021)
Interest Rate _t	0,003	0,25 (1,161)	-0,0002	0,710 (-0,372)	0,0003	0,529 (0,630)	0,002	0,865 (0,170)	0,0005	0,520 (0,645)
GDP _t	0,000	0,989 (0,014)	0,014	0,064** (1,856)	0,010	0,196 (1,296)	0,079	0,634 (0,477)	0,019	0,067 (1,840)
Income Before LLP _t	-0,054	0,308 (-1,026)	0,006	0,480 (0,708)	-0,0003	0,9798 (-0,028)	0,209	0,069** (1,827)	0,017	0,204 (1,274)
Total Loans _t	0,01	0,004* (2,959)	-0,001	0,352 (-0,933)	0,003	0,045* (2,007)	0,021	0,045* (2,013)	0,0018	0,355 (0,927)
Nonperforming Loans _t	0,91	0,000* (26,972)	0,999	0,000* (668,1)	0,999	0,000* (577,32)	0,092	0,005* (2,834)	0,916	0,000* (54,288)

*, ** Indicates statistical significance at 5% and 10% level.

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Signalling theory argues that LLPs may be used to signal financial health (Beaver et al. 1989, Wahlen 1994, Beaver & Engel 1996, Liu et al. 1997, Anandarajan et al. 2005). Wahlen (1994) claims that increase in LLP is perceived as “good news” and results in increase in income of subsequent period only when nonperforming loans and loan charge-offs are included in the analysis. Consistent with Wahlen’s (1994) signalling model, we test signalling hypothesis by regressing one year ahead income before loan loss provisions on loan loss provisions of current period, loan charge-offs and nonperforming loans. Results show that signalling hypothesis (H_4) is valid for the banks in Turkish banking sector. Increase in current period loan loss provisions results in increase in one-year-ahead net income before LLP. Result obtained from the analysis are consistent with other studies supporting signalling hypothesis (Wahlen et al. 1994, Liu et al. 1997, Lobo & Yang 2001, Kanagaretnam et al. 2003, Anandarajan et al. 2005). Only study we come across in literature that contradicts with signalling studies belongs to Ahmed et al.’s (1999). They did not find evidence of a positive relation between LLPs and one year-ahead income before loan loss provisions. According to our results, it is possible to say that bank managers use loan loss provisions to give positive signals about future earnings.

Table 5: Regression Results for Signalling Hypothesis

Dependent Variable: Income before LLP _{t+1}		
Method: Panel Least Squares		
	Panel Fixed Effects Model (Cross-Section, Period Fixed Effects)	
	R ² : 0,8869	
	P Value (F Statistics): 0,0000*	
Variables	Coefficient	P Value (t statistics)
Loan Loss Provisions _t	0,2157	0,050* (1,9469)
Loan Charge-Offs _t	-0,2786	0,000* (-5,280)
Nonperforming Loans _t	0.5862	0,000* (26,9572)

*, Indicates statistical significance at 5% level.

Also, to see the effect of the global financial crisis of 2008 on the income smoothing behavior of Turkish banking sector, we run the same analysis used to examine income smoothing behavior for 2007-2009 time period. We predict that income smoothing behavior of banks differs during the whole sample period (2005-2011) compared to the crisis period of 2007-2009. Studies related to income smoothing behavior of the banks during financial crises periods are very rare, so our results have potential to shed some light on bank managers’ propensity to manage earnings during financial crises. In their study Liu and Ryan (2006) finds that loan loss provisioning has been used to obscure income smoothing during the boom of 1990s. Similarly, Agarwal et al. (2007) find evidence that Japanese banks on average did not use loan loss provisions to smooth income during severe recession years. More recently El Sood (2012) finds that for income smoothing purposes, banks are accelerating loan loss provisions more than the crisis period of 2007-2009. According to our results (shown in Table 6), relationship between income before LLP and LLP ($p= 0.2594$) has been disappeared during crisis period of 2007-2009. Thus, income smoothing hypothesis has not been supported for our sample of Turkish Banking Sector during financial crisis of 2008. In addition

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to being the first study which examines the income smoothing behavior of Turkish banking sector, our study is also the first study that examine the effect of global crisis on Turkish banking sector from earnings management perspective. We can say increasing financial discipline and restructuring process during this period may have prevented the banks from earnings management purposes.

Table 6: Panel Regression Results for 2007-2009 Financial Crisis Period

Dependent Variable: Loan Loss Provisions		
Method: Panel Least Squares		
R²: 0.917806		
Variables	Coefficient	P value
Loan Charge-Offs	0.026481	0.6186
CPI	0.030780	0,8088
Interest Rate	-0.013596	0,5313
GDP	0.365976	0,0232*
Income Before LLP	0.106018	0,2594
Total Loans	-0.022226	0,0009*
Nonperforming Loans	0.967852	0,0000*

*, ** Indicates statistical significance at 5% and 10% level.

5. Conclusion

This paper examines the association between net income before loan loss provisions and loan loss provisions within the frame of income smoothing and signalling hypotheses. We have used panel data base of banks operating in Turkey for 2005-2011 time period. According to the results, we find that banks in the sample use loan loss provisions to smooth income over time. Although the results support income smoothing hypothesis, the relation between nonperforming loans and loan loss provisions is much more stronger. This result suggests the validity of income smoothing hypothesis but also reveals the fact that banks in the sample of Turkish banking sector give more importance to their banks' loan portfolios quality rather than net income before LLP when determining loan loss provisions. Our findings are similar to most of the literature that support income smoothing hypothesis (Greenawalt & Sinkey 1988, Ma 1988, Bhat 1996, Collins et al. 1997, Hasan & Hunter 1999, Leaven & Majnoni 2002, Shrieves & Dahl 2003, Kanagaretnam et al. 2004, Anandarajan et al. 2005). However, our results about Turkish banking sector differs from cross country study of Fonseca and Gonzalez (2008). In their study, they find insignificant results for income smoothing behavior of Turkish banking sector. We think it stems from differences in sample attributes. Their data consists of 40 different countries for 1995-2002 time period and there are only 10 banks operating in Turkey in their sample. However, our study consists of Turkish banking sector as a whole for 2005-2011 time span. Thus, we think our study has more relevant and detailed conclusions about Turkish banking sector. Besides, they use

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consolidated financial statement of banks in their study. Unlikely, we use unconsolidated financial statements to analyze data which is related to banks only.

We have also analyzed whether different bank groups in the Turkish banking sector differentiate in income smoothing behavior. According to the results, banks with foreign capital show income smoothing behavior. For the other banks loan loss provisions are mostly determined by nonperforming loans. This situation contradicts with income smoothing hypothesis. It is the managerial discretion on provisions that leads way to earnings management practices and nonperforming loans are significant in explaining nondiscretionary portion of provisions (Beaver & Engel 1996).

For the signalling hypothesis, results confirm that banks use loan loss provisions as a tool to give signals about future earnings. As supported in the literature, investors interpret increases in unexpected portion of loan loss provisions as “good news” about future changes in income (Beaver 1989, Elliot et al. 1991, Griffen & Wallach 1991, Wahlen 1994, Liu & Ryan 1995, Beaver & Engel 1996, Kanagaretnam, Lobo & Yang 2003, Ghosh 2007). Only study we come across in literature that contradicts with signalling studies belongs to Ahmed et al.’s (1999).

One of the most distinctive feature of this study is to analyze the effect of the most recent financial crisis on the income smoothing behavior on banking sector of an emerging market. Income smoothing hypothesis has not been supported for the Turkish Banking Sector during the global financial crisis of 2008. Our finding is similar to EL Sood’s (2012) study which argue that the association between loan loss provisions and income is less pronounced during the financial crisis period than during the pre-crisis period for income smoothing purposes. Similarly, Hansen (2015) find evidence that discretionary loan loss reserves decrease during the financial crisis of 2008 and then bounce back after the crisis.

There has been a continuing dispute in the evidence presented for the income smoothing hypothesis. Results of this study are in favor of income smoothing and signalling behavior by banking sector via loan loss provisions. Furthermore, as a difference from other studies we have analysed the most recent financial crisis in the context of income smoothing hypothesis and find no evidence of income smoothing during financial crisis. As we mentioned before, unlike big samples of US and European research, our study focuses only on Turkey as an emerging market. By doing this research, we try to enhance our knowledge about earnings management field and take one step further in literature by reducing the research gap related to emerging markets.

This study has several limitations. First, our sample size is small relative to other studies. While working with small data enables us more detailed conclusions, generalisability of results is low. Second it does not include capital management aspect of loan loss provisioning. Taking capital management and related BASEL regulations into account can result in more advanced conclusions. Third, it includes effects of financial crisis of 2008 on income smoothing behavior, but Turkey had experienced a severe financial crisis in 2001 that should also be studied in order to gain more relevant and valid knowledge about effects of financial crises. Besides these limitations, due to modelling concerns related to discretionary behavior embedded in earnings management studies, tests examining the validity of models should be addressed in future research.

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