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Earnings Quality in the Microfinance Industry

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Earnings Quality in the Microfinance Industry

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Abstract

This study investigates the popular claim that reported earnings are invalid as a performance measure of microfinance institutions. Using earnings quality metrics from the accounting literature, we are unable to document lower earnings quality for microfinance institutions than for listed corporations. Moreover, we find that the proposed alternative in the microfinance industry to reported earnings, adjusted earnings, do generally not score higher on earnings quality metrics than do reported earnings. This first study of earnings quality in the microfinance industry suggests that reported earnings are a relevant measure of the current and future financial performance of microfinance institutions.

1. Introduction

Microfinance institutions (MFIs) supply financial services to micro-enterprises and low income families. MFIs pursue the double bottom lines of social development and financial returns, and their funding is supplied by a range of sources, from donations to commercial investments. Microfinance is thus an arena in which donors meet professional investors and it has quickly developed into a large industry. Currently, more than 3000 MFIs report their numbers to www.microfinancesummit.org and serve altogether more than 150 million people with microcredit. More than 100 international funds invest in MFIs, and microfinance is about to become an important asset class for investors, particularly those pursuing both financial and social returns (www.mixmarket.org).

Measuring the performance of MFIs has long been a controversial topic in the industry. First, measuring the social outcome of microfinance is a problem (Schreiner 2002; Hashemi 2007). Secondly, it is also frequently claimed that bottom line accounting earnings are invalid as financial performance measures because subsidies and grants may constitute a portion of the income for many MFIs (Yaron 1992; Christen et al. 1995; Schreiner 1997; Manos and Yaron 2009). Moreover, the financial information issued by the MFIs has been criticised for being scarce and inadequately standardised (Gutierrez-Nieto and Serrano-Cinca 2007). Various guidelines on how to measure financial performance have been issued in response to these claims (Bruett 2005), and subsidy adjusted earnings measures have sometimes been applied as alternative performance measures for MFIs. However, despite the claim that bottom line earnings are almost useless as a measure, and that the adjusted earnings measure constitutes a better alternative, little has been done to examine the quality and information content of the two measures.

Financial reporting trustworthiness is of vital importance to the stakeholders of the microfinance industry. For instance, lenders and donors study accounting reports in detail before contracting with an MFI. At the MIXMARKET site (www.mixmarket.org), MFIs can present their profiles to investors and others; the best grade is only given to those presenting audited and externally rated financial accounts. In this study, we set out to be the first to consider MFIs' accounting numbers in relation to earnings quality literature, and to apply earnings quality theories and statistical tests to these numbers. We examine whether the earnings quality of MFIs differ from that of publically listed companies, and we investigate whether the quality of reported earnings differs from the supposedly improved adjusted earnings measures. Our research is motivated by prior research suggesting that earnings quality is of great importance to investors (Michelson et al. 2000; Francis et al. 2003), and to all parties that use accounting measures for contracting purposes (Crabtree and Maher 2005; Francis et al. 2006). Although MFIs have important social objectives as well, we expect that donors and investors nonetheless have an interest in knowing whether MFIs' earnings accurately convey information about the current and future profitability of the MFIs.

In the accounting literature, earnings are said to be of high quality if they are representative of long term earning ability (Melumad and Nissim 2008). Our results indicate that the quality of reported earnings in the microfinance industry differs little from that of other industries. The scores on earnings attributes, such as stability and predictability, are very similar to the values reported for listed companies. We find no evidence of more widespread earnings manipulation in microfinance than in other industries, and the reported earnings that have been brought into question do appear relevant to the industry's stakeholders. Moreover, we do not find that adjusted earnings are superior to reported earnings, as far as earnings quality is

concerned. Reported earnings generally achieve at least as high scores on earnings quality metrics as do adjusted earnings.

This paper is organised as follows: Section 2 discusses the theoretical background for the paper, presents our expectations and lays out the research design of the empirical study. Section 3 describes the data sample, and Section 4 displays and discusses the empirical findings. Section 5 concludes the paper.

2. Theoretical Background, Expectations and Research Design

2.1. Earnings quality

Accounting information is used for a variety of purposes, such as equity investment, management compensation and debt contracts (Barth et al. 2001). Bottom line earnings are the financial report's summary measure of the value creation of a company or organisation. However, the information content of bottom line earnings is dependent on the so-called earnings quality. Professionals use the term "high earnings quality" to signal high reporting trustworthiness. Nonetheless, no unique definition of earnings quality exists (Ben-Hsien and Da-Hsien 2004). Earnings quality relates to how well accounting figures reflect a firm's economic state, but earnings quality can be measured based on a variety of factors. For instance, Francis et al. (2004) consider the following factors, which they refer to as earnings attributes: accrual quality, persistence, predictability, smoothness, value relevance, and timeliness and conservatism. In a similar vein, Barth et al. (2008) maintain that earnings quality is associated with less earnings management, more timely loss recognition and higher value relevance of earnings and book values of equity. We will define the earnings attributes applied in this study later in this section, but for now we turn to Melumad and Nissim (2008) who offer a more specific interpretation of the general concept of earnings quality. Melumad

and Nissim (2008) simply contend that ‘earnings are of high quality if they are representative of long term earning ability’ (p. 91).

Prior accounting research has documented that earnings quality matters to stock investors (Michelson et al. 2000; Francis et al. 2004). Collectively, an abundance of research suggests that earnings are the foremost measure of company performance (Dechow 1994; Graham et al. 2005; Subramanyam and Venkatachalam 2007). Francis et al. (2004) conclude that the companies with the least favourable values on the various earnings attributes experience larger cost of capital than those with the most favourable values. Their finding is explained by information risk. Accounting earnings can be viewed as the allocation of cash flows to reporting periods, and earnings figures reduce investors’ information risk if they reflect the current and future cash flow generating capabilities of a firm.

The measures of earnings quality can be categorised into accounting-based attributes and market-based attributes, respectively. If considering the attributes investigated by Francis et al. (2004), then accrual quality, persistence, predictability and smoothness can be labelled accounting based attributes, whereas value relevance and timeliness are the market based earnings attributes. The metrics can nonetheless be expected to be highly related. For instance, earnings attributes such as persistence and predictability are often a prerequisite for value relevance. If earnings lack persistence and predictability, it is very unlikely that earnings numbers will be particularly useful in valuation (cf. Beisland 2011).

Melumad and Nissim (2008) argue that practitioners seem to equate earnings quality with earnings persistence, possibly due to the extensive use of multiple-based valuation, such as the price-to-earnings ratio. This claim is indirectly supported by Francis et al. (2004), who

report that the largest cost of equity effects are observed for the accounting based attributes of earnings quality. Favourable economic effects of smooth earnings are also documented by Francis et al. (2003), Michelson et al. (2000), and Crabtree and Maher (2005). All these studies contribute to explaining managers' 'obsession' with stable earnings; in a survey by Graham et al. (2005), 96.9 per cent of all CFOs prefer stable earnings, with a surprising 78 per cent willing to give up company value for this stability. Note, however, that earnings quality is not only relevant in company valuation; earnings quality is also of interest to those who use financial reports for contracting purposes (e.g., manager compensations). Schipper and Vincent (2003) state that contracting decisions based on low quality earnings in general will induce unintended welfare transfers.

2.2 Earnings quality in the microfinance industry

Most research on earnings quality has been conducted on publicly listed companies (Dechow and Dichev 2002; Francis et al. 2004; Barth et al. 2008; Dichev and Tang 2009). As far as we know, no prior studies have analysed the earnings quality of MFIs as measured with the earnings quality metrics developed in the accounting literature. However, several stakeholders have interest in and study in detail the financial numbers reported by the MFI. For example, debt holders in the microfinance industry normally demand quarterly or monthly reporting of earnings, boards use financial reports to monitor management and negotiate CEO compensation, and employees, donors, and others are informed about the MFI's situation through financial numbers. Financial reports make up the core of MFI information at the MIXMARKET site, the most important matching website for MFIs, funders, service providers and networks. Earnings quality is thus also important in the microfinance industry.

Earnings quality is a more complicated measure for MFIs than for private corporations. The main goal of a private corporation is to maximise shareholder wealth. An MFI typically has multiple sets of goals, of which several are related to so-called social performance. Zeller and Meyer (2002) argue that the performance of MFIs should be assessed according to the following three attributes: financial sustainability, outreach to the poor and the welfare impact of microfinance. Financial sustainability can be seen as a prerequisite for the two latter purposes, as the MFI, by definition, will cease to exist if not financial sustainable. Thus, regardless of the multidimensional goals of MFIs, there is a considerable need for trustworthy financial performance and sustainability measures.

Prospective investors in exchange listed companies typically have access to large amounts of financial performance information that they can investigate before making a decision about whether or not to invest in a company. However, MFIs are mostly financed through loans and grants, and the lenders and donors often have limited knowledge about the companies that they want to invest in. Decisions are often based on rather scarce and poorly standardised financial information (Gutierrez-Nieto and Serrano-Cinka 2007). Moreover, due to the fact that traditional profitability metrics ignore subsidies and grants received by many MFIs and overlook their opportunity costs, it is often claimed that standard accounting measures of profitability are invalid for assessing the financial sustainability of MFIs (Yaron 1992; Christen et al. 1995; Manos and Yaron 2009). This acknowledgement has led to the establishment of adjusted earnings measures for the microfinance industry. The adjusted earnings measures have facilitated the computation of adjusted return on equity and adjusted return on assets.¹

¹ Note also that the Subsidy Dependence Index and the Financial Self Sufficiency Index are often applied when the financial sustainability of MFIs is evaluated. These indices or ratios are not monetary amounts and are not typically easy to interpret for people unfamiliar with the concepts.

The adjusted earnings measures are typically estimated by MFI rating agencies. These rating agencies conduct so-called ‘global risk assessments’ of MFIs, and profitability measures are important components when assigning grades to MFIs (Reille et al. 2002). The MFIs ratings are more comprehensive than traditional credit risk ratings and are an assessment of the overall activities of the MFI. The rating agencies conduct the following three types of adjustment to bottom-line earnings: adjustment for inflation, adjustment for subsidies and adjustment for loan provisions and write-offs (see www.ratingfund.org for more details). Manos and Yaron (2009) describe these adjustments, ‘The adjustment for inflation is to account for the fact that inflation decreases the value of net monetary assets. The adjustment for subsidies is to account for three types of subsidies: concessionary borrowings; cash donations; and in-kind subsidies. The adjustment for loan loss provisions and write-offs is to account for variation in the recognition of delinquencies and writing off of bad loans.’ (p. 5). Bruett (2005) states that the adjustments are made to reflect the true performance of MFIs, to measure the MFIs’ ability to maintain their level of operations over the long term, and to enable benchmarking across a wide range of institutions.

The purpose of this study is two-fold. First, we want to examine how bottom-line earnings score on traditional measures of earnings quality, the same measures that are applied when private equity and exchange-listed corporations are analysed. Without a thorough examination of the earnings quality of MFIs, it may be premature to abandon bottom line earnings as a conveyor of important performance information in the microfinance industry. Second, we want to investigate whether the MFIs’ scoring on the earnings quality measures improves if adjusted earnings measures are applied instead of the reported ones. The microfinance literature seems to implicitly assume that the adjusted earnings are somewhat ‘better’ than the unadjusted ones, but little has been done to examine whether this is actually the case.

2.3 Expectations

The relatively large proportion of non-profit institutions in the microfinance industry distinguishes these organisations from ordinary private corporations. In principle, the large number of non-profit organisations may lead to earnings quality differing from what is observed for exchange listed companies. However, it is not obvious *ex ante* whether the profit maximising companies or the non-profit organisations provide the highest earnings quality. The ‘demand’ hypothesis (see discussion in Givoly et al. 2010) states that the quality of earnings is a function of the demand for high quality earnings. One may argue that the stakeholders of profit maximising organisations demand a higher earnings quality than do those of non-profit organisations, and that the former group of organisations thus has a higher earnings quality than the latter.

On the other hand, one can argue that under the ‘opportunistic behaviour’ hypothesis, earnings quality may be lower in profit maximising organisations due to higher incentives for CEOs to manipulate earnings in these organisations. Prior research suggests a widespread belief that the bottom line earnings of MFIs do not provide an accurate reflection of their financial position, and that alternative performance measures need to be applied (Yaron 1992; Christen et al. 1995; Schreiner 1997; Manos and Yaron 2009). Thus, it appears that the demand hypothesis dominates the opportunistic behaviour hypothesis. Moreover, the large percentage of grants and subsidies disturbs the correct measurement of financial performance in the industry, and this fact has led to the development of adjusted earnings measures.

Overall, based on the many claims that financial reporting for MFIs is not trustworthy, we expect the earnings quality in the microfinance industry to be inferior to that of ordinary

exchange listed corporations. Further, we expect that the adjustments made to earnings numbers to improve their information content will increase the measured earnings quality of the microfinance industry.

2.4 Research methodology

Earnings quality research seeks to identify whether reported earnings are representative of the long term earning ability of a company or organisation (cf. Melumad and Nissim, 2008). Earnings quality is assessed through scores on several earnings attributes. Based on Francis et al. (2004), we apply the following accounting based measures of earnings quality in this study: smoothness, persistence, and predictability. Following Barth et al. (2008), we also include in the study measures of earnings management and timely loss recognition. We focus the analysis on the accounting based attributes of earnings, since the providers of microfinance typically are not listed. The typical external or market based measure of accounting usefulness, the value relevance of accounting information, cannot be studied for non-listed companies.² Nevertheless, we do provide one proxy for market based earnings quality; we analyse the degree to which the earnings numbers are related to the MFI ratings (the global risk assessments). The MFI ratings are a broad measure of MFI performance. If the MFI earnings are related to these global risk assessments, one can conclude that the earnings are relevant and useful for the MFI's stakeholders, and, hence, earnings are of high quality.

In the following we define all earnings quality metrics applied in this study and outline their test methodology.

² Note, however, that prior research has documented that value relevance is closely related to accounting attributes such as earnings persistence and predictability (Kormendi and Lipe 1987; Beisland 2011).

Smoothness

Earnings smoothness is earnings stability. The more stable earnings are, the higher the earnings quality. The standard deviation of earnings scaled by total assets is used as our metric of earnings smoothness (Dichev and Tang 2009). Note that earnings smoothness may also be an indication of earnings management, see discussion in sub-section 4.4.

Persistence

Persistence measures the degree to which future earnings equal current earnings. Persistence is measured as the slope coefficient from a regression of current earnings on lagged earnings (Francis et al. 2004). Following the much cited study of Sloan (1996), we apply OLS and estimate the following regression:

$$\text{Earn}_{i,t} = \beta_0 + \beta_1 * \text{Earn}_{i,t-1} + \varepsilon \quad (1)$$

Earn is net earnings scaled by end-of-year total assets (Barth et al. 2008) for MFI i in year t .

Predictability

Predictability is defined as the ability of earnings to predict themselves. Possible measures of predictability include the explanatory power or the square root of the error variance from regression specification (1) (Francis et al. 2004). To make the study comparable to previous research, we apply the adjusted R^2 from the regression as our metric of predictability. Note the distinction between smoothness, persistence and predictability; smoothness measures earnings stability, persistence measures the degree to which future earnings equal current earnings, and predictability measures the proportion of the variance in future earnings one is able to explain using current earnings.

Earnings management

Accounting numbers may be prepared in a manner that reduces how informative and useful they are. Schipper (1989) defines earnings management as purposeful intervention in the external financial reporting process with the intent of obtaining private gain. Earnings management reduces the financial reports' ability to correctly reflect the underlying economics of a corporation. Thus, the higher the earnings management, the lower the earnings quality. Following Barth et al. (2008), we apply the standard deviation of the change in net earnings scaled by total assets as our metric for earnings management. The standard deviation of the change in earnings can also be seen as a proxy for earnings smoothness, and, hence, we complement the analysis with another measure of earnings management. Prior research has suggested an overrepresentation of small positive earnings (Hayn 1995) and this is seen as evidence that companies often manage earnings towards a target, in this case zero, to avoid reporting a loss (Barth et al. 2008; Melumad and Nissim 2008). Thus, the proportion of small profits is our second indicator variable for earnings management. Small profits are defined as scaled earnings in the interval 0 to 0.01

Timely loss recognition

One characteristic of high quality earnings is that losses are recognised as they incur rather than being deferred to future periods (Barth et al. 2008). Thus, we expect that higher quality earnings exhibit a higher frequency of large losses. A large loss is defined as scaled earnings smaller than -0.2.

Rating relevance

Global risk assessments (the MFI ratings) are frequently applied by investors, donors and other stakeholders when evaluating the overall performance of an MFI. The global risk assessments measure a combination of creditworthiness, trustworthiness and excellence in microfinance and are claimed to be much wider than traditional credit rating (www.ratinginitiative.org). We interpret a positive association between the earnings and the ratings as a measure of earnings usefulness, and thus, earnings quality. Prior research has suggested that the MFI ratings are a function of several variables. We follow Gutiérrez-Nieto and Serrano-Cinkas (2007) and assume that the rating of the MFIs is a function of size, profitability, efficiency, risk, and social performance. Thus, the two alternative earnings numbers' 'rating relevance' is analysed through the following regression:

$$RATE = \beta_0 + \beta_1 PROF + \beta_2 SIZE + \beta_3 EFF + \beta_4 Risk + \beta_5 SocPer + \beta_6 CONTROL + \varepsilon \quad (2)$$

where RATE is the rating grade, PROF is a measure of the MFI's profitability, SIZE is MFI size, EFF is a measure of the MFI's efficiency, Risk is a measure of the MFI's risk, and SocPer is a measure of the MFI's social performance. CONTROL is a vector of control variables. The specific variables chosen to proxy for the determinants are discussed in subsection 4.6.

Table 1 summarises the proxy variables used to measure earnings quality in this study. Table 1 also provides a short definition of each proxy variable and explains briefly how they are to be measured.

[Table 1 about here]

3. Data Sample

The dataset has been constructed using reports from the providers of the global risk assessments, the rating agencies. The rating reports are made public at www.ratingfund2.org. Reports made by the following five rating agencies are included: MicroRate, Microfinanza, Planet Rating, Crisil and M-Cril. All data are hand collected. The methodologies applied by the rating agencies have been compared and no major differences relevant for this study have been found in how they assess MFIs. All the five agencies are approved official rating agencies by the Rating Fund of the Consultative Group to Assist the Poor (C-GAP).

The fact that MFIs in the sample are rated means a certain selection bias; the data is skewed towards the better performing MFIs. We consider this an advantage in our comparative analysis as it filters out much background ‘noise’ like very small MFIs or development programmes without the intention to apply microfinance in a business-like manner. However, we cannot rule out the possibility that MFIs that report to rating agencies take a special care in the preparation of their reports. Therefore, their data may be of better quality than those of other MFIs, and, hence our findings may not be generalizable to non-rated MFIs. An interesting extension of our study could be to check if our conclusions on rated MFIs also hold for the unrated ones.

The rating reports making up the database are from 1998 to 2008, with the vast majority being from the last four years. As required, all numbers in the dataset have been annualised and converted to US\$ using prevailing official exchange rates. The rating agencies differ in the information they make available in the reports. Thus, a different N on different variables and in different years is reported. The dataset consists of 378 MFIs and 1294 firm year observations. The MFIs are from 73 countries, see Table 2 for more details.

[Table 2 about here]

4. Empirical Findings

In this section, we present the empirical results for the six earnings quality metrics outlined in Section 2. The earnings quality measures have been computed both for reported, bottom-line earnings as well as for the adjusted earnings estimated by the MFI rating agencies. We compare our findings to earnings quality measures found in studies from ordinary, mostly listed, companies. Highlighting that there is no established “normal” level of earnings quality, the comparison provide some *indications* as to whether the results from the microfinance industry differ substantially from those from prior research on other industries.

4.1. Smoothness

We start the analysis by examining earnings smoothness as measured by the standard deviation of earnings.³ We follow Barth et al. (2008) and scale all earnings numbers by end-of-year total assets.⁴ Table 3 presents the analysis. Several distributional characteristics other than the standard deviation are presented in the table. Mean earnings for the total sample of MFIs is 0.5 per cent of total assets. The smoothness, measured by the standard deviation of earnings, is 0.112. The standard deviation for the adjusted earnings is 0.111. Thus, there appears to be no difference in earnings smoothness between the two earnings metrics. The results may not be directly comparable, as the results on the adjusted earnings are based on a

³ In general, several of the earnings quality metrics can be estimated on a firm level (Francis et al. 2004) or from pooled samples (Barth et al. 2008). Due to a low number of observations for each MFI, we estimate the metrics for the sample as a whole. Under pooled estimation, one assumes that the metrics are drawn from the same distribution (Barth et al. 2008). Both approaches are valid, but the interpretations of the two approaches are somewhat different. If using firm-specific estimation, one presents for instance earnings smoothness metrics for a representative entity in the sample. If pooled estimation is applied, one presents metrics for the sample as a whole. It is important to apply studies using similar approaches when results are to be compared; thus, note that our study and all our benchmark studies have computed the earnings quality metrics identically.

⁴ Some studies apply the mean of total assets (Dichev and Tang 2009). We have repeated all tests using mean total assets as the scaling factor, but this change does not affect any conclusions.

smaller sample than the results on the reported earnings. If the analysis is repeated on a constant sample, the standard deviation of reported earnings is only 0.090 (not tabulated) and there is a statistically significant difference (on a five per cent level) to the standard deviation of the adjusted earnings. This strengthens the conclusion that adjusted earnings do not appear to be smoother than reported earnings.

[Table 3 about here]

In Table 3 we compare our findings with earnings smoothness found in other studies. Dechow and Dichev (2002) analyse the role of accruals estimation errors for earnings quality; Dichev and Tang (2009) investigate earnings volatility and earnings predictability; Barth et al. (2001) study cash flow predictions; Dechow and Ge (2006) examine earnings and cash flow predictability with a particular focus on the role of special items. Similar to our analysis, all studies apply earnings scaled by total assets in the analyses. Table 3 shows that the standard deviation varies from 0.066 (Dichev and Tang 2009) to 0.199 (Dechow and Ge 2006). Thus, the earnings smoothness of MFIs falls within the range suggested by the benchmarks. Hence, we can conclude that the smoothness of earnings in the microfinance industry does not seem to deviate considerably from that of other industries.

4.2. Persistence

Earnings persistence is evaluated through the slope coefficient in a regression of current on lagged earnings, as seen in the discussion in Section 2. The results from the regression are displayed in Table 4. The size of the slope coefficient is 0.567 for reported earnings. This ‘persistence coefficient’ for adjusted earnings is 0.512. Hence, adjusted earnings appear to be less persistent than reported earnings, meaning that the earnings quality as measured by

earnings persistence is higher for reported than adjusted earnings. This conclusion is not affected if a constant sample is applied for both reported and adjusted earnings. The difference is, however, not statistically significant. Table 4 introduces a much cited earnings prediction and value relevance study of Sloan (1996) and an earnings persistence study of Francis and Smith (2005), in addition to the formerly presented articles of Dichev and Tang (2009) and Dechow and Ge (2006).⁵ We see that all the four benchmark studies report higher persistence coefficients than our study, ranging from 0.563 (Dichev & Tang 2009) to 0.841 (Sloan 1996). Thus, the earnings persistence seems to be lower in the microfinance industry than in other industries.

[Table 4 about here]

4.3. Predictability

The explanatory power, the adjusted R^2 , from the regression analysis of Table 4 is applied as our metric for earnings predictability. The adjusted R^2 is 56.73 per cent for reported earnings, compared to only 39.48 per cent for adjusted earnings. The difference is significant as measured with the Cramer (1987) test. The conclusion does not change if a constant sample is applied, and once again we note that reported earnings score higher on an earnings quality measure than adjusted earnings. The adjusted R^2 of the benchmark studies ranges from 33.69 per cent (Dechow and Ge 2006) to 69.43 per cent (Sloan, 1996). The results from the reported earnings of the microfinance sample are in the upper part of this range, suggesting that earnings predictability is not lower for MFIs than for other companies.

4.4. Earnings management

⁵ The benchmarks are not constant throughout our analyses, simply because none of the cited studies include all of the earnings attributes that we study.

We apply two measures for earnings management; the standard deviation of the change in (scaled) earnings and the proportion of small positive earnings. The results on the earnings management metrics are reported in Table 5. We note that the reported MFI earnings have a mean change of 0.020. The standard deviation of the change is 0.069. The standard deviation of the change in adjusted earnings is 0.076. The difference is significant. A smaller variance of the change in net income is interpreted as evidence of earnings management. If a constant sample is applied, the standard deviation of reported earnings falls to 0.056. Hence, our first earnings management analysis suggests that earnings management is more widespread for reported than for adjusted earnings. Results from the study of Barth et al. (2008) and Lang et al. (2006) are applied as benchmarks. Barth et al. (2008) investigate the accounting quality of firms that apply International Accounting Standards (IAS) in 21 different countries. They also present results from a matched sample of firms that apply non-US domestic accounting standards. Lang et al. (2006) analyse earnings management by comparing US firms' earnings with reconciled earnings for cross listed non-US firms. The benchmarks range from 0.06 to 0.17, and, again, the results from the microfinance industry do not seem to be dramatically different from that of other industries, at least not when the international samples of Barth et al. (2008) are considered.

[Table 5 about here]

The proportion of small positive earnings is another indicator of earnings management. High proportions signal widespread earnings management (Barth et al. 2008). Table 5 shows the proportion of firms reporting small profits, defined as scaled earnings in the interval 0 to 0.01. 9.7 per cent of the MFIs report earnings within this range (9.5 per cent if a constant sample is applied). The small profit proportion is 7.4 per cent for adjusted earnings. Thus, our two

earnings management proxies provide consistent results; both proxies suggest that reported earnings are more contaminated by earnings management than are adjusted earnings. This should come as no surprise as adjusted earnings are prepared by outsiders, the rating agencies, who presumably have no incentives to manipulate their estimated numbers. For both reported and adjusted earnings, the proportion of small profits is higher than in the Lang et al. (2006) study, but considerably lower than in the samples studied by Barth et al. (2008). Based on the analysis of Table 5 we cannot conclude that earnings management is more widespread in MFIs than in other companies.

4.5. Timely loss recognition

Table 5 also lays out the proportion of large negative earnings, defined as earnings scaled by total assets less than -0.2. A higher frequency of large losses is interpreted as evidence of more timely loss recognition. 3.9 per cent of the MFIs in our sample report a large loss, whereas the large loss proportion is 5.1 per cent for adjusted earnings. However, average earnings are 3.2 percentage points higher for reported earnings than for adjusted earnings. Hence, it is not surprising that reported earnings are also higher in the lowest part of the earnings distribution; the whole earnings distribution of reported earnings is shifted to the right compared to the earnings distribution of adjusted earnings. The loss proportions are higher than the benchmark samples in three out of four of our cases. The metric for timely loss recognition does not suggest that MFIs display untimely loss recognition.

4.6. Rating relevance

The value relevance of earnings is considered to be an important aspect of earnings quality (Francis et al. 2004; Barth et al. 2008). The MFIs are not exchange listed, but we apply the earnings numbers' association with the global risk assessments, namely the MFI ratings, as

our proxy for value relevance. The global risk assessments measures the degree to which MFIs are able to fulfil their multiple sets of goals, and financial performance and sustainability are a vital aspect of the MFIs evaluated by the rating (Gutiérrez-Nieto and Serrano-Cinka 2007; Beisland and Mersland 2011). Hence, the earnings-rating association will assess the degree to which bottom line earnings reflect the financial performance grade embedded in the MFI ranking, and thus measure the relevance of earnings to investors and donors. We apply the regression specification outlined in section 2 when testing the rating relevance. The rating grade, *RATE*, takes values between 0 and 1. The higher the number is, the better the rating. The distance between each grade is equal to one divided by the total number of grades that the agency applies. CRISIL has the lowest number of grades, an eight-point scale ranging from mfR8 to mfR1, whereas Planet has the highest number of grades, an eleven-point scale ranging from e to a+. *EARN* is our profitability measure, and it is either reported or adjusted earnings scaled by the end of period total assets. We use the log of total assets, *LN(ASSETS)*, as the size variable in the regressions. Operating expenses relative to total loan portfolio, *OEX_PORTF*, is the efficiency measures. Risk is measured as the Portfolio at Risk>30, *PAR30* and the social performance indicator is the GDP-adjusted average outstanding loan amount (*AVG_LOAN_PPP*). This selection of proxy variables is based on the study of Gutiérrez-Nieto and Serrano-Cinka (2007)

The results from the regressions are listed in Table 6. Reported earnings are a highly significant explanatory variable in the regression. Its t-value is as high as 7.22. Manos and Yaron (2009) state that ‘...standard accounting measures of profitability are invalid for assessing the performance of institutions that receive subsidies.’ (p. 5). However, despite all claims that bottom line earnings are useless for MFIs, the regression suggests that there is considerable information content in this summary accounting metric. To illustrate the

importance of profitability and financial performance for determining the MFI ratings, we note that financial performance is one of three major areas evaluated by MicroRate and M-CRIL, and one of six areas considered by Planet Rating. Our analysis suggests that bottom line earnings capture the profitability dimension well.

[Table 6 about here]

Table 6 also presents empirical results if adjusted earnings replace reported earnings in the regression analysis. We note that the regression coefficient on earnings is smaller and less significant if adjusted earnings are used. This difference between reported and adjusted earnings is even more substantial if a constant sample is applied. Once again the difference is statistically significant. Thus, our analysis does not support the claim that adjusted earnings is a more informative number than reported earnings.⁶

6. Conclusions

Reported earnings are of high quality if they reflect the long term earning ability of a company or institution (Melumad and Nissim, 2008). This study applies earnings quality metrics developed in the accounting literature to study the earnings quality of MFIs. The reported earnings of MFIs seem to be slightly less persistent than the earnings of other corporations. However, the microfinance industry's scores on earnings quality measures such as smoothness, predictability, earnings management indicators, and timely loss metrics seem

⁶ Due to the ordinal nature of the rating grade, one may claim that canonical correlations should be applied instead of standard OLS when testing the rating relevance of the earnings numbers. However, the conclusions are identical if this alternative estimation technique replaces OLS. As a second robustness check of rating relevance, we repeat the regression analysis with alternative proxies for the explanatory variables. Specifically, the log of the total loan portfolio is our alternative size proxy, and the total number of loan clients divided by total number of employees (personnel productivity) is the new efficiency measure. Risk is now measured as the total write-offs, and the social performance indicator is the average outstanding loan amount without the adjustment for the GDP-level. This alternative test does not change any conclusions. The slope coefficient remains larger on reported than on adjusted earnings.

to be comparable to those of other industries, documented in prior studies (Dechow and Dichev 2002; Francis and Smith 2005; Lang et al. 2006; Barth et al. 2008; Dichev and Tang 2009). Hence, there is reason to question the popular claim that the bottom line earnings of MFIs are irrelevant and close to useless. On the contrary, reported earnings seem to be a relevant conveyor of information on the current and future earnings generating capabilities of the entities. The proposed alternative to reported earnings, adjusted earnings, generally do not score higher on the earnings quality metrics. In fact, when earnings persistence and predictability are concerned, the results on reported earnings are superior to those on adjusted earnings. When the earnings numbers' relevance as profitability and financial sustainability indicators are tested through their statistical association with MFI ratings, the results also suggest that the information content of adjusted earnings does not exceed that of reported earnings.

We maintain that smooth, persistent, predictable earnings that are not exposed to (excessive) earnings management cannot be termed useless or invalid. This conclusion is strengthened by the finding that reported earnings are highly related to global risk assessments of MFIs, conducted by professional rating agencies and frequently applied by investors, donors, lenders and other stakeholders of the microfinance industry. We do not, however, propose that adjusted earnings measures are unnecessary for improving the financial reporting of the industry. Even if the current adjustments do not seem to outrank reported earnings as indications of future MFI performance, this study does not test whether adjusted earnings play a role if the sole purpose of the profitability measure is to compare the profitability of the MFIs with the profitability of companies in other industries, i.e., companies that do not receive subsidies and grants. An interesting extension of our study would be to analyse

whether there are earnings quality differences between the non-profit MFIs and the more commercial, profit-maximising MFIs. This issue is, nevertheless, left for future research.

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Table 1: Earnings Quality Metrics

Proxy variable	Smoothness	Persistence	Predictability	Earnings management	Timely loss recognition	Rating relevance
Description	Earnings stability	The degree to which future earnings equal current earnings	The ability of earnings to predict themselves	Purposeful intervention in the external financial reporting process with the intent of obtaining private gain	Losses are recognised as they incur rather than being deferred to future periods	The degree to which earnings are related to MFI ratings
Measurement	⌘ The standard deviation of earnings	⌘ The regression coefficient from a regression of current earnings on lagged earnings	⌘ The explanatory power from a regression of current earnings on lagged earnings	⌘ The standard deviation of the change in earnings ⌘ The proportion of small profits	⌘ The proportion of large losses	⌘ The significance level of earnings on a regression of rating grade on earnings and other explanatory variables

Table 1 defines the earnings quality metrics applied in this study, and outlines the measurement of the metrics.

Table 2: Data Sample

Country	Banks	Non Bank Fin. Inst.	Non-Gov. Organ.	Cooperatives/ Credit Un.	State Banks	Total Obs.	%
Albania	0	12	0	0	0	12	0.9 %
Argentina	0	4	0	0	0	4	0.3 %
Armenia	0	4	6	0	0	10	0.8 %
Azerbaijan	0	22	0	0	0	22	1.7 %
Bangladesh	0	0	1	2	0	3	0.2 %
Benin	0	8	12	6	0	26	2.0 %
Bolivia	0	4	51	0	3	58	4.5 %
Bosnia Hercegovina	0	0	41	0	0	41	3.2 %
Brazil	0	4	40	3	0	47	3.6 %
Bulgaria	0	4	0	4	0	8	0.6 %
Burkina Faso	0	4	0	9	0	13	1.0 %
Burundi	0	0	0	3	0	3	0.2 %
Cambodia	0	21	2	0	0	23	1.8 %
Cameroon	1	8	0	3	6	18	1.4 %
Chad	0	0	0	3	0	3	0.2 %
Chile	4	0	0	4	0	8	0.6 %
China	0	0	4	0	0	4	0.3 %
Colombia	0	0	24	0	0	24	1.9 %
Croatia	0	0	4	0	0	4	0.3 %
Dominican Republic	0	0	12	0	4	16	1.2 %
DRC - Kinshasa	0	0	0	4	0	4	0.3 %
East Timor	0	1	0	0	0	1	0.1 %
Ecuador	0	0	30	31	0	61	4.7 %
Egypt	0	0	17	0	0	17	1.3 %
El-Salvador	0	8	6	0	0	14	1.1 %
Ethiopia	4	40	0	0	0	44	3.4 %
Gambia	0	0	4	0	0	4	0.3 %
Georgia	0	0	16	0	0	16	1.2 %
Ghana	0	0	10	0	0	10	0.8 %
Guatemala	0	0	19	0	0	19	1.5 %
Guinee	0	3	0	0	0	3	0.2 %
Haiti	0	0	6	0	0	6	0.5 %
Honduras	0	3	18	8	0	29	2.2 %
India	1	4	56	8	3	72	5.6 %
Indonesia	1	0	1	0	0	2	0.2 %
Jordan	0	10	0	0	0	10	0.8 %
Kazakhstan	0	11	0	0	0	11	0.9 %
Kenya	8	18	12	0	0	38	2.9 %
Kosovo	0	12	4	0	0	16	1.2 %
Kyrgyzstan	4	0	4	4	0	12	0.9 %
Madagascar	0	4	0	3	0	7	0.5 %
Malawi	0	4	0	0	0	4	0.3 %
Mali	0	0	7	4	0	11	0.9 %
Mexico	4	15	36	4	4	63	4.9 %
Moldova	0	8	0	0	0	8	0.6 %
Mongolia	4	3	0	0	0	7	0.5 %
Montenegro	3	0	4	0	0	7	0.5 %
Morocco	0	0	25	0	0	25	1.9 %
Mozambique	3	0	0	0	0	3	0.2 %
Nepal	5	0	6	0	0	11	0.9 %
Nicaragua	0	8	32	2	0	42	3.2 %
Niger	0	2	0	3	0	5	0.4 %
Nigeria	3	0	9	0	0	12	0.9 %
Pakistan	0	0	1	0	0	1	0.1 %
Paraguay	0	4	0	0	0	4	0.3 %
Peru	11	36	54	12	0	113	8.7 %
Philippines	0	0	15	1	0	16	1.2 %
Rep of CongoBrazz	0	0	3	0	0	3	0.2 %
Romania	0	3	0	0	0	3	0.2 %
Russia	0	0	15	37	3	55	4.3 %
Rwanda	0	9	0	4	0	13	1.0 %
Senegal	0	4	0	27	0	31	2.4 %
Serbia	0	0	4	0	0	4	0.3 %
South Africa	4	0	4	0	4	12	0.9 %
Sri Lanka	0	0	1	0	0	1	0.1 %
Tajikistan	1	2	14	0	0	17	1.3 %
Tanzania	4	0	12	0	0	16	1.2 %
Togo	0	0	3	6	0	9	0.7 %
Trinidad and Tobago	0	2	0	0	0	2	0.2 %
Tunisia	0	0	3	0	0	3	0.2 %
Uganda	5	23	14	0	0	42	3.2 %
Vietnam	0	0	4	0	0	4	0.3 %
Zambia	0	4	0	0	0	4	0.3 %
Total	70	336	666	195	27	1294	100.0 %

Table 2 displays the distribution of the firm year observations with respect to country and MFI type. The data sample of the study consists of 378 MFIs from 73 countries, in total 1,294 firm year observations. The observations are from the period 1998 to 2008 with the vast majority being from the last four years. The sample is hand collected from rating reports from the five microfinance rating agencies MicroRate, Microfinanza, Planet Rating, Crisil and M-Cril. The rating reports are available on www.ratingfund.org. The MFIs are categorised into the following 5 groups: banks, non-bank financial institutions, non-governmental organisations, cooperatives/credit unions, and state banks.

Table 3: Earnings Quality as Measured by Earnings Smoothness

	Mean	St. Dev.	Q1	Median	Q3	n
Reported earnings	0.005	0.112	-0.014	0.020	0.058	1,294
Adjusted earnings	-0.027	0.111	-0.056	-0.006	0.032	631
Dechow and Dichev (2002)	0.030	0.113	0.009	0.042	0.081	15,234
Dichev and Tang (2009)	0.031	0.066	-	-	-	22,113
Barth et al. (2001)	0.040	0.080	-	0.040	-	10,164
Dechow and Ge (2006)	-0.031	0.199	-0.051	0.028	0.071	63,875

Table 3 displays the mean, standard deviation, first quartile (Q1), median, third quartile (Q3) and number of observations (n) of earnings scaled by end of period assets. The standard deviation of scaled earnings is applied as a proxy variable for earnings smoothness (shaded column). Two earnings measures are studied. Reported earnings are the net annual earnings as they appear on the income statement. Adjusted earnings are computed by the MFI rating agencies and applied when the ratings are assigned. Compared to reported earnings, the following three types of adjustments are typically made: adjustments for inflation, adjustments for subsidies and adjustments for loan provisions and write-offs (see www.ratingfund.org for more details). The results are compared to the findings of four benchmark studies. Dechow and Dichev (2002) analyse the role of accruals estimation errors for earnings quality, Dichev and Tang (2009) investigate earnings volatility and earnings predictability, Barth, Cram, and Nelson (2001) study cash flow predictions, whereas Dechow and Ge (2006) examine earnings and cash flow predictability with a particular focus on the role of special items. All studies apply earnings scaled by total assets in the analyses.

Table 4: Earnings Quality as Measured by Earnings Persistence and Predictability

	Slope coefficient	Adj. R²	n
Reported earnings	0.567***	56.73 %	916
Adjusted earnings	0.512***	39.48 %	405
Sloan (1996)	0.841***	69.43 %	40,679
Dichev and Tang (2009)	0.652***	39.80 %	79,879
Francis and Smith (2005)	0.786***	61.34 %	83,962
Dechow and Ge (2006)	0.696***	33.69 %	61,989

Table 4 presents the results from the regression $\text{Earn}_{i,t} = \beta_0 + \beta_1 \text{Earn}_{i,t-1} + \varepsilon$, where Earn is earnings scaled by end of period total assets. Two earnings measures are studied (see description in Table 3). The slope coefficient β_1 is applied as a proxy variable for earnings persistence, whereas the adjusted R^2 is our proxy variable for earnings predictability (shaded columns). The results are compared to the findings of four benchmark studies. Sloan (1996) analyses earnings predictions and value relevance, and Francis and Smith (2005) study earnings persistence. The studies of Dichev and Tang (2009) and Dechow and Ge (2006) are described in Table 3. The adjusted R^2 in the studies of Sloan (1996) and Francis and Smith (2005), as well as the t-values in the study of Dichev and Tang (2009) are not reported in the published articles, but are estimated based on the mathematical relation between the t-value and the R^2 in OLS regressions (Greene 2003). All studies apply earnings scaled by total assets in the analyses. One (*), two (**), and three (***) asterisks denote the conventional 10%, 5% and 1% significance levels, respectively.

Table 5: Earnings Quality as Measured by Earnings Management and Timely Loss

Recognition

	Change in earnings			Small profits	Large losses
	Mean	St. Dev.	n		
Reported earnings	0.020	0.069	916	9.7 %	3.9 %
Adjusted earnings	0.011	0.076	405	7.4 %	5.1 %
Barth et al. (2008) - IAS sample	0.000	0.060	1,896	13.0 %	3.0 %
Barth et al. (2008) - NIAS sample	-0.000	0.060	1,896	17.0 %	2.0 %
Lang et al. (2006) - US sample	-0.020	0.140	698	5.0 %	7.0 %
Lang et al. (2006) - Cross Listed Firms	0.000	0.170	698	8.0 %	1.0 %

Table 5 displays the mean, standard deviation, and number of observations (n) of the change in earnings scaled by end of period assets. The standard deviation of the change in scaled earnings is applied as a proxy variable for earnings management (shaded column). A second proxy variable for earnings management is the proportion of small profits, defined as earnings scaled by total assets between 0 and 0.01 (shaded column). The proportion of large losses, defined as earnings scaled by total assets smaller than -0.2, is a proxy variable for timely loss recognition (shaded column). Two earnings measures are studied (see description in Table 3). The results are compared to the findings of two benchmark studies, each reporting results from two samples. Barth et al. (2008) investigate the accounting quality of firms that apply International Accounting Standards in 21 different countries (IAS) and of a matched sample of firms that apply non-US domestic accounting standards (NIAS). Lang et al. (2006) analyse earnings management by comparing US firms' earnings with reconciled earnings for cross listed non-US firms.

Table 6: Earnings Quality as Measured by Rating Relevance

	Reported earnings		Adjusted earnings	
Variable	Coefficient	t-value	Coefficient	t-value
EARN/ASSETS	0.923***	7.22	0.785***	6.64
LN(ASSETS)	0.070***	9.73	0.065***	7.01
OEX_PORTF	-0.060	-1.34	-0.004	-0.05
PAR30	-0.363***	-4.65	0.029	0.26
AVG_LOAN_PPP	0.000	-0.52	0.000	0.13
<i>CONTROLS:</i>				
GDP_GR	-0.039	-1.40	0.339	1.46
HDI	0.146**	2.27	0.085	0.88
AGE_MFI	-0.003***	-3.17	-0.004***	-2.82
<i>Indicator var:</i>				
Year	Yes		Yes	
Region	Yes		Yes	
Agency	Yes		Yes	
Adj. R ²	57.34 %		58.23 %	
No. obs	303		183	

Table 6 analyses the relevance and information content of earnings by examining the influence of scaled earnings on microfinance ratings (shaded rows). The table reports regression coefficients, t-values, explanatory power (adj. R²), and number of observations from the following regression model:

$$RATE = \beta_0 + \beta_1 EARN + \beta_2 LN(ASSETS) + \beta_3 OEX_PORTF + \beta_4 PAR30 + \beta_5 AVG_LOAN_PPP + \beta_6 CONTROL + \varepsilon$$

RATE is the rating grade assigned to the MFI by the microfinance rating agency. The rating scales have been mathematically converted into a uniform scale. *EARN* is earnings divided by end of period total assets. Two earnings measures are studied (see description in Table 3). *LN(ASSETS)* is the log of total assets, *OEX_PORTF* is the operating expenses relative to total loan portfolio, *PAR30* is the Portfolio at Risk>30 (the relative proportion of the portfolio with more than 30 days in arrears), *AVG_LOAN_PPP* is the average outstanding loan amount adjusted for the countries' GDP-level, and *CONTROL* is a vector of control variables. *CONTROL* includes GDP-growth (*GDP_GR*), the Human Development Index (*HDI*), the number of years since the institution started microfinance activities (*AGE_MFI*) and indicator variables for years, geographical regions and rating agencies. One (*), two (**) and three (***) asterisks denote the conventional 10%, 5% and 1% significance levels, respectively.