

## **Reliability of graphs disclosed in annual reports of banks**

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In order to meet the diverse information demands of investors (Cascino et al., 2014; Arnold et al., 2009; Cohen et al., 2011), companies have increased the length of the front-end of the annual report which often includes numerous graphs (Beattie et al., 2008). As this part of the report is not audited, it can be easily used for impression management purposes. Previous empirical evidence indicates that companies tend to create impressions by improper construction of graphs (e.g. Beattie and Jones, 1992, 1999; Mather et al., 1996; Beattie et al., 2008). Despite the important role that the quality of banks' disclosures plays in the avoidance of banking crises (Tadesse, 2006), this issue has not been previously covered in the context of banks. Therefore, the objective of this paper is to investigate the level of distortion in graphs disclosed in Central and Eastern European (hereafter CEE) commercial banks' annual reports and identify its determinants.

The analysis covers 2112 graphs disclosed in annual reports of 33 commercial banks from 7 Central and Eastern European countries during 2006-2013. The violations of graph construction principles are determined and measurement distortions calculated based on graph discrepancy index and relative graph discrepancy index. Regression models with random effects are used to analyse bank and country-specific determinants of graph distortions.

Sampled banks exhibit rather high graph distortion levels with 33.7% of graphs violating at least one graph construction principle. Material measurement distortions are present in 13 to 21% of graphs with favourable measurement distortions being more common than unfavourable ones. These results corroborate the findings of previous studies covering other sectors and support the presence of impression management.

The regression models reveal that in line with expectations, higher distortion levels are observed during crisis years, especially in the context of activity and financial indicator graphs. The change in graphed variable has rather weak impact on the level of distortions with the expected negative association being present only for profit and deposit indicator graphs. Contrary to expectations, banks distort graphs more when their performance is good. This indicates that banks use graph distortions not for concealing information, but for emphasizing positive outcomes. In terms of other bank-specific indicators larger banks tend to have lower and banks with more concentrated ownership structure higher levels of graph distortion.