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TOTAL ACCRUALS AS A MEASURE OF EARNINGS QUALITY: SOME EVIDENCE FROM UKRAINE

ЗАГАЛЬНІ НАРАХУВАННЯ ЯК ОЦІНКА ЯКОСТІ ПРИБУТКУ: НА ПРИКЛАДІ ДЕЯКИХ ДАНИХ З УКРАЇНИ

In this paper we investigate the quality of earnings of companies that are listed on the Ukrainian Stock Exchange between 2005 and 2011 years. To assess the quality of earnings, we used a simple method, based on the levels of total accruals. We hypothesized that higher level of total accruals is associated with low quality earnings. Given the limitations of this approach, we found no convincing examples of manipulating earnings, but our results show that in 2008 the possibility to manipulate earnings is significant.

Keywords: *quality of earnings, total accruals, financial statements, manipulation.*

У статті ми досліджуємо якість прибутку компаній, які котуються на Українській фондовій біржі в період між 2005 і 2011 роками. Для оцінки якості прибутку ми використали простий метод, що ґрунтується на рівні загального нарахування (total accruals). Ми припустили, що більш високий рівень (total accruals) пов'язаний з низькою якістю прибутку. Беручи до уваги обмеженість цього підходу, ми не знайшли переконливих прикладів маніпулювання прибутком, але наші результати показують, що в 2008 році ймовірність маніпулювання прибутком є значною.

Ключові слова: *якість прибутку, загальне нарахування, фінансова звітність, маніпулювання.*

I. INTRODUCTION

A major motivation for accounting research is providing evidence on how earnings are useful to a wide range of users in making economic decisions. Of particular interest over the last decade has been the issue of the quality of accounting reports, particularly the quality of earnings.

Earnings quality (EQ) continues to be a popular topic in accounting research mostly because it is an important aspect of evaluating an entity's financial condition, yet investors, creditors, and other financial statement users often overlook it. Earnings quality refers to the ability of reported earnings to reflect the company's true earnings, as well as the usefulness of reported earnings to predict future earnings. Earnings quality also refers to the stability, persistence, and lack of variability in reported earnings [Bellovary et. al, 2005]. Consequently there is no common definition of this term in the literature. As mentioned above Authors in theirs research use a wide range of expressions to describe the same phenomenon or its different aspects and use a wide range of technics and models to test the quality of earnings.

Francis et al. (2004) identify seven measures of earnings quality (which they refer to as earnings attributes) that have been widely used in accounting research. They characterize the seven earnings attributes as either "accounting-based" or "market-based" depending on the underlying assumptions about the function of financial reporting, and they note that these assumptions will, in turn, influence the way the attributes are measured. The accounting-based earnings attributes are accruals quality, persistence, predictability, and smoothness. These attributes take cash or earnings (or other measures that can be derived from these, such as accruals) as the reference construct, and are estimated using accounting data (not market data). The market-based attributes are value relevance, timeliness, and conservatism.

The choice of an earnings quality measure will depend on the research question posed (which dimension of earnings quality is implied by the research question) and the availability of data and estimation models (which measures can be estimated). Hence the aim of this study is to examine the quality of earnings in a sample of companies listed on the Ukrainian Stock Exchange by using the magnitude of total accruals. Our intent is not to develop a new model but to provide empirical evidence to those who want to employ this factor to study earnings quality.

II. EARNINGS QUALITY IN UKRAINIAN PUBLIC COMPANIES – EMPIRICAL EVIDENCE

Total accruals as a measure of earnings quality is based on the view that earnings that map more closely into cash flows are of better quality. Hence researchers decompose earnings into cash and non-cash components, and assume that cash earnings are relatively difficult to manipulate. The magnitude of non-cash component, that is total accruals (TA), is a measure of earnings quality: the higher the total accruals, the greater the likelihood that earnings quality is low.

Table 1 reports descriptive data about the components and magnitude of TA for the sample of 33 companies listed on the Ukrainian Stock Exchange and 233 firm-year observations in the years 2005-2011. The total accruals were calculated in accordance with the following equation [see Dechow at. al. (2002) for example]:

$$TA_t = Earnings_t - CFO_t$$

Where TA_t – total accruals in year t,

     CFO_t – cash flow from operations in year t.

The total accruals amount by itself is not comparable to other firms' TA or with past TA of the same firm. To achieve the comparability the accrual metric should be scaled by some factor like total assets in order to account for the fact that larger firms will naturally have larger amounts of accruals. In this research we used a TATA factor, which is calculated by dividing the accrual amounts by total assets at the beginning of the year.

As can be seen from the table, accruals have a negative mean (median) of -0,95 % (-0,97 %) of assets at the beginning of the period, which is consistent with prior findings (see Richardson et al. (2005) for example). The average total accruals tend to be negative, mostly due to depreciation and amortization which is included in income but excluded from net operating cash flow. The negative total accruals, in combination with over 75 % of the year observations having positive earnings, suggesting that on the Ukrainian Stock Exchanged there is no evidence of strong earnings management practice to improve financial results.

Table 1

Descriptive data about the components and magnitude of TA in the years 2005-2011

MOTOR SICH	2005	2006	2007	2008	2009	2010	2011
TA	4811	38420	-4339	320372	-25404	295196	380242
TATA	0,25%	1,87%	-0,19%	10,99%	-0,72%	7,01%	6,18%
CENTRENERGO	2005	2006	2007	2008	2009	2010	2011
TA	-116262	-70345	59971	-117587	-131549	-384355	297771
TATA	-2,45%	-1,57%	1,34%	-2,64%	-2,80%	-8,77%	6,97%
ENMZ	2005	2006	2007	2008	2009	2010	2011
TA	-64062	43806	202386	396934,1	-669947	-892824	-1143708
TATA	-4,22%	2,06%	9,64%	16,00%	-12,14%	-14,65%	-8,49%
ALMK	2005	2006	2007	2008	2009	2010	2011
TA	-273740	524237	100658	108857	-2009596	-1628120	-908565
TATA	-21,16%	18,69%	1,87%	1,22%	-17,03%	-13,64%	-7,82%
DOEN	2005	2006	2007	2008	2009	2010	2011
TA	-139720	-54799	-137216	-13640	-119978	-129635	-270783
TATA	-5,03%	-2,07%	-5,45%	-0,56%	-4,53%	-4,59%	-10,26%
AZST	2005	2006	2007	2008	2009	2010	2011
TA	-756940	210907	1289840,2	1068108	35494	578254	-643650
TATA	-9,16%	2,36%	12,41%	8,35%	0,19%	1,88%	-1,71%
AVDK	2005	2006	2007	2008	2009	2010	2011
TA	391757	109900	-441031	-672844	250347	-166619	-364112
TATA	5,87%	2,08%	-6,52%	-9,11%	1,96%	-1,39%	-2,82%
UNAF	2005	2006	2007	2008	2009	2010	2011
TA	432821	-855513	-490624	514527	1250241	2828457	-1961996
TATA	5,29%	-10,62%	-5,22%	4,89%	9,66%	14,98%	-10,65%
AZOT	2005	2006	2007	2008	2009	2010	2011
TA	-46978,2	-425860,4	-8324,9	252895,2	-89891	-236855	58528
TATA	-2,92%	-24,30%	-0,48%	11,40%	-2,64%	-7,69%	1,54%
CGOK	2005	2006	2007	2008	2009	2010	2011
TA	225353	35282	137354	264598	1715868	-180773	306672
TATA	17,12%	2,09%	7,44%	12,40%	39,83%	-3,02%	4,26%
DNAZ	2005	2006	2007	2008	2009	2010	2011
TA	-551649,3	-952323,4	-1459282,2	162948,1	621310	-908653	-234705
TATA	-38,07%	-57,55%	-85,47%	8,35%	21,34%	-39,29%	-7,19%
DNON	2005	2006	2007	2008	2009	2010	2011
TA	-242542	-119938	-145434	-256977	-222255	-227810	-336997

TATA	-10,35%	-4,97%	-6,49%	-11,76%	-10,17%	-9,30%	-12,25%
DNSS	2005	2006	2007	2008	2009	2010	2011
TA	197573	10972	47500	71172	-282839	-280782	-73765
TATA	18,13%	1,00%	3,55%	3,78%	-15,12%	-14,99%	-3,19%
GLNG	2005	2006	2007	2008	2009	2010	2011
TA	17508,7	15001,6	78433,3	2416,6	-410324	-59774	-310550
TATA	4,30%	2,52%	7,25%	0,12%	-9,83%	-1,01%	-5,81%
HGAZ	2005	2006	2007	2008	2009	2010	2011
TA	-16348	-19782	-9594,2	1771	-25714	-57429	-95169
TATA	-7,04%	-9,31%	-3,67%	0,59%	-6,87%	-12,55%	-16,84%
HRTR	2005	2006	2007	2008	2009	2010	2011
TA	-53512	216677,1	495374,4	-58920,2	878075	64120	124465
TATA	-10,46%	27,03%	34,68%	-3,72%	24,68%	1,27%	3,78%
KOEN	2005	2006	2007	2008	2009	2010	2011
TA	-17831	-3892	-37453,2	-4625,9	-74541	-6522	-60408
TATA	-4,86%	-1,09%	-9,77%	-0,97%	-11,65%	-0,96%	-9,04%
KSTL	2005	2006	2007	2008	2009	2010	2011
TA	878460	-259421	1043971	732598	1043718	-19004	734916
TATA	13,47%	-3,69%	9,86%	4,91%	7,16%	-0,13%	4,20%
KVBZ	2005	2006	2007	2008	2009	2010	2011
TA	43370,7	96951,9	88106,5	151317	286362	-30163	-14805
TATA	7,81%	14,81%	10,75%	15,25%	18,90%	-1,93%	-0,72%
KVTZ	2005	2006	2007	2008	2009	2010	2011
TA	917,8	4435,8	3910,8	17961,8	-1274	-9112	-2149
TATA	2,49%	10,81%	7,95%	26,97%	-1,69%	-12,14%	-2,88%
MMKI	2005	2006	2007	2008	2009	2010	2011
TA	636110	-25832	-1154086	590425	684951	384284	1691227
TATA	8,63%	-0,29%	-9,47%	4,86%	5,21%	2,94%	10,92%
NFER	2005	2006	2007	2008	2009	2010	2011
TA	69135	35695	424683	297840	317890	4360280	-3518637
TATA	7,43%	3,78%	36,66%	17,29%	4,75%	48,76%	-25,95%
ONPZ	2005	2006	2007	2008	2009	2010	2011
TA	-35096	13818,3	-36250,2	210107,9	-586467	56209	-107088
TATA	-5,79%	2,25%	-5,40%	15,64%	-22,35%	1,45%	-4,27%
PGOK	2005	2006	2007	2008	2009	2010	2011
TA	-67675	406715	-168559	137764	-368049	-111405	628630
TATA	-4,22%	15,43%	-6,84%	4,70%	-7,91%	-2,27%	9,69%
RAZT	2005	2006	2007	2008	2009	2010	2011
TA	-13428	-58384	-25715	193036	78940	-352409	-553608
TATA	-1,80%	-8,22%	-3,45%	27,59%	6,18%	-17,93%	-16,62%
SGOK	2005	2006	2007	2008	2009	2010	2011
TA	189009	148464	367710	983239	2231740	173885	-640655
TATA	8,83%	4,89%	9,13%	18,50%	23,74%	0,96%	-3,06%
SLAV	2005	2006	2007	2008	2009	2010	2011
TA	-69725,2	-61215,3	-108830,4	-176989,2	-439896	-655195	-405711
TATA	-9,96%	-7,91%	-11,97%	-12,06%	-18,40%	-30,06%	-14,99%
SUBA	2005	2006	2007	2008	2009	2010	2011
TA	13973	39930	-46945	78924	270024	-85585	125941
TATA	4,00%	9,00%	-9,75%	13,20%	32,57%	-4,80%	6,29%
SUNI	2005	2006	2007	2008	2009	2010	2011
TA	-4438,8	-81179,1	-138960,1	-282544,5	-434574	-351533	-359093
TATA	-1,82%	-33,72%	-9,00%	-13,84%	-17,54%	-13,99%	-12,91%
TATM	2005	2006	2007	2008	2009	2010	2011
TA	-24481,7	-25556	18498,1	18606,9	143838	58236	58600
TATA	-2,73%	-2,80%	1,87%	1,73%	10,36%	3,99%	3,50%

UTLM	2005	2006	2007	2008	2009	2010	2011
TA	-1739598,7	-1956641,1	-1304448,1	-1392320,5	-2468054	-1685532	-1656037
TATA	-17,23%	-15,96%	-11,23%	-10,97%	-19,95%	-14,35%	-15,81%
ZATR	2005	2006	2007	2008	2009	2010	2011
TA	23825	125453,9	36452,5	109098,2	-136216	875653	-1016275
TATA	6,05%	21,93%	5,30%	4,41%	-3,70%	21,50%	-28,00%
ZPST	2005	2006	2007	2008	2009	2010	2011
TA	509041	32219	-478420	-192548	422442	-467489	116928
TATA	11,33%	0,62%	-7,85%	-2,66%	3,93%	-4,75%	1,12%

Source: Own elaboration based on data from company's financial statements (www.smida.gov.ua).

Note that, in spite of the negative mean and median accruals, over 47 % of the observations have positive, income-increasing accruals, and 16,5 % of them present positive total accruals higher than 10 % of assets. Additionally, year over year analysis (see table 2) shows that in 2008 over 72 % of the observations have positive, income-increasing accruals. In combination with fact that at the beginning of global financial crisis of 2008 over 93 % of the year observations having positive earnings, suggesting that in 2008 the likelihood of *earnings manipulation is significant.*

Table 2

Descriptive Statistics

	2005	2006	2007	2008	2009	2010	2011	Total
Positive Earnings (PE)	25	29	31	31	24	14	19	173
Negative Earnings (NE)	8	4	2	2	9	19	14	58
Percentage of PE	76%	88%	94%	94%	73%	42%	58%	75%
Percentage of NE	24%	12%	6%	6%	27%	58%	42%	25%
Positive TA	15	18	15	24	16	10	11	109
Negative TA	18	15	18	9	17	23	22	122
Percentage of PTA	45%	55%	45%	73%	48%	30%	33%	47%
Percentage of NTA	55%	45%	55%	27%	52%	70%	67%	53%
PTA greater than or equal to 10 %	4	6	4	12	8	3	1	38
Percentage of PTA greater than or equal to 10 %	12%	18%	12%	36%	24%	9%	3%	16%

Source: Own elaboration.

III. CONCLUSIONS

The procedure employed in this research to aggregate total accruals as an earnings quality factor relies on the assumption, that firms managing earnings can inflate revenues or understate expenses but cannot inflate cash flows. Based on the method applied in this research we didn't find conclusive evidence for earnings manipulation in the companies listed on the Ukrainian Stock Exchange but our results suggest that in 2008 the likelihood of *earnings manipulations* is *significant*. However, using the raw accrual amounts as a proxy for earnings management to evaluate earnings quality has a lot of limitations. Firstly, firms can have a higher positive level of total accruals for legitimate business reasons, such as sales growth. Secondly, it is generally the case that fast-growing firms will have a high level of positive total accruals. Rapid increase in assets (such as accounts receivable, inventory and PP&E) will naturally drive accruals at a higher rate than in a company with declining growth. High-growth firms will typically experience larger (and positive) changes in sales, higher capital expenditures, higher cost of goods sold and lower cash flow from operations (but higher cash flow from financing). To eliminate this limitations researchers decompose total accruals (TA) into discretionary or abnormal accruals (DA) and non-discretionary or normal accruals (NDA). The estimated DA is a measure of earnings quality. Unfortunately, the discretionary accruals cannot be observed directly from financial statements. They have to be estimated using some kind of a model. Most of the models estimate a firm's nondiscretionary accruals from the firm's past accruals levels during periods when systematic earnings management is assumed (Jones, 1991). The alternative is to use a cross-sectional approach where a firm's normal level of accruals in a period is given by a comparable firm's accruals in the same pe-

riod (Defond and Jiambavlo, 1994). Both in the time-series and cross-sectional approach, the problem is that accruals vary with changes in business circumstances. The more recent models try to control for these changes with parameters that supposedly adjust the expected accruals to the change in circumstances.

References

1. Bellovary, J. L. Giacomino, D. E. Akers, *M. D., 2005 Earnings Quality*: *It's Time to Measure and Report*. The CPA Journal 75, Issue : 11, pp. 32–37.
2. Dechow, P. M. Dichev, I. D. 2002. The quality of accruals and earnings: the role of accrual estimation errors. The Accounting Review 77, pp. 35–59.
3. Defond M. L. Jiambalvo, J., 1994. Debt covenant effects and the manipulation of accruals. Journal of Accounting and Economics 17(1) : pp. 145–176.
4. Francis, J., Lafond, R., Olsson, P. M., Schipper, K., 2004. Costs of equity and earnings attributes. The Accounting Review 79 (October) : pp. 967–1010.
5. Jones J. J., 1991. Earning management during import relief investigation. Journal of Accounting Research 29 (2) : pp. 193–228.
6. Richardson, S., Sloan, R., Soliman, M., and Tuna, I. 2005. Accrual reliability, earnings persistence and stock prices. Journal of Accounting & Economics 39, pp. 437–485.

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