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DIVIDENDS AND EARNINGS QUALITY IN POLAND

Mieczysław Kowerski*

Abstract The purpose of this article is to show on the example of Warsaw Stock Exchange, Poland (WSE) how in emerging capital markets dividends provide information about earnings quality as measured by their persistence. In the paper the regressions models of future earnings (in years t + 1 and t + 2) were applied on current earnings (in year t), current dividends decision (in year t) and the interaction of current dividend decision and earnings proposed by D. J. Skinner and E. Soltes (2011), using pooled cross – sectional time – series data. Aset of 2263 observations coming from the companies listed on the WSE in 1995-2009 was used for the calculation. For estimating the parameters, recursive modeling was used. Specific models were estimated using the heteroskedasticity-corrected general least squares method. It was shown that on the WSE the quality of earnings depends more distinctly on a firm's dividend policy than on the developed markets.

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„Dividends Tell the Truth" (Miller, 2006, p. 33)

Introduction

Earnings are the most synthetic measure of the economic benefits achieved by actions undertaken by the company (Nowak, 2009, p. 181). That is why it is a basic measure of business activity evaluation by shareholders and potential investors. Earnings are also quite often the basis for evaluating and rewarding company managers. But the fact that it is a synthetic measure which is, in practice, the function of all business transactions (both positive and negative) occurring in an enterprise, causes a lot of problems with its unequivocal evaluation. On the other hand, delivering a financial result is a complicated process that involves decision making, and as such is one of the actions most often bordering on the side of 'creative accounting' (Wąsowski, 2010, p. 16) and may fluctuate over time. Consequently, the quality of financial results becomes an issue.

Quality earnings may be very differently understood and measured. P. Dechow, W. Ge and C. Schrand define earnings quality as follows: "Higher quality earnings provide more information about the features of a firm's financial performance that are relevant to a specific decision made by a specific decision-maker" (2010, p. 344). The same authors suggest three categories of quality earnings indicators (Dechow et al., 2010, p. 345):

1) properties of earnings,
2) investor responsiveness to earnings,
3) external indicators of earnings misstatements.

Note they propose to proxy properties of earnings by the following indicators:

1) earnings persistence,
2) abnormal accruals,
3) earnings smoothness,
4) asymmetric timeliness and timely loss recognition,
5) target beating.

* Ph. D., Mieczysław Kowerski, Mieczysław Kowerski, Zamość University of Management and Administration, Akademicka St. 4, 22-400 Zamość, Poland, mkowerski@wszia.edu.pl.

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A simple model specification estimates earnings persistence as:

$$Earnings_{t+1} = \alpha_0 + \alpha_1 Earnings_t + \varepsilon_t \quad (1)$$

In model (1) earnings are typically scaled by assets, although some researchers examine margins (scaled by sales) or scaled by the number of shares. A higher α_1 implies a more persistent earnings stream. Intuitively, the logic behind earnings persistence being a quality metric is as follows: if firm A has a more persistent earnings stream than firm B, in perpetuity, then in firm A, current earnings is a more useful summary measure of future performance. A further extension of model (1) is to determine whether other financial statement elements (or variables outside of the financial statements) are incremental over current earnings in predicting future earnings (Dechow et al., 2010, p. 352):

$$Earnings_{t+1} = \alpha_0 + \alpha_1 Earnings + \alpha_2 Financial\ \ Statements\ \ components_t + \alpha_3 Other\ \ \inf ormation_t + \varepsilon_t \quad (2)$$

These authors also suggest six groups of the determinants of earnings quality (Dechow et al., 2010, p. 379):

1) firm characteristics (most often analyzed in research are: firm performance, debt, growth and investment size),
2) financial reporting practices,
3) governance and controls,
4) auditors,
5) equity market incentives,
6) external factors (including capital requirements, political processes, and tax and non-tax regulation).

DIVIDENDS AS A TOOL FOR ASSESSING EARNINGS QUALITY FOR DEVELOPED CAPITAL MARKETS

Among the factors already mentioned which determine earnings quality a very important one is missing, as pointed out by D. J. Skinner and E. Soltes (2011), namely – the firm's dividend policies.

A wealth of literature dating back to at least the articles by J. Lintner (1956), and M. Miller and F. Modigliani (1961) points out that dividends are a way to signal good prospects for high future earnings by the management board of a company.

Later this idea took the form of signaling theory: (Bhattacharaya, 1979; Myers & Majluf, 1984; John & Williams, 1985).

The basis of this theory is the information asymmetry between the management board and the minority shareholders. Minority shareholders usually do not have the same information as management and majority shareholders. Complete information, especially about a company's future (regarding, for example technologies and production processes), is not provided by studying the company accounts. Therefore, a dividend may be a way to provide minority shareholders and potential investors with information about the company's situation and its future profits. New or increased dividends are a positive signal about the company's financial situation, whereas their cancellation or reduction is a negative signal.

According to J. Lintner (1956, p. 97) dividend policy is one of a company's primary financial decisions. Lintner conducted very detailed interviews with the boards of 28 targeted companies. For those companies, he collected financial data between the years 1947-1953 (196 observations). These interviews show that according to management dividends are very important for shareholders. Note that shareholders are not so much interested in a constant level of paid dividends, but in a relatively fixed percentage pay-out. The belief that the market puts a premium on stability or gradual growth was strong enough so that most managers sought to avoid making changes in their dividend rates which might have had to be reversed within a year or so (Lintner, 1956, p. 99). In addition, managers reduce dividend rates very reluctantly.†

The results of the interviews carried out by J. Lintner concerning the dividend policy lead to the conclusion that management will decide not to pay dividends until they believe that they will be able to pay them in the future so that in the future they will able to

† Sometimes, in order to 'defend' the existing payout ratio, they pay a dividend although the company has recorded a loss (DeAngelo et al., 2008, p.130).

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achieve adequate (permanent) earnings. Lintner's conclusions have been confirmed by (Brav, Graham, Harvey, & Michaely, 2005) recently.

It can therefore be hypothesized that dividends provide information about earnings quality measured by their persistence.

Recent accounting scandals seem to confirm the above hypothesis. Although it is relatively easy for management to 'fix' current profits and 'paint' a company's situation, it is much more expensive to pay dividends in order to inform minority shareholders and potential future shareholders of the good financial situation of the company and its high level of profits when that level is a result of 'creative accounting'. Management may decide on this operation occasionally, especially when that profit is not a result of actual company performance, but accounting interventions improving this result only for a short period (e.g., through 'appropriate' booking of liabilities at the end of the reporting period).

Skinner and Soltes (2011, p. 14) in order to investigate the relationship between dividend policy and earnings quality, suggested earnings linear models in years t + 1 and t + 2 determined by a decision to pay dividends in year t, the rate of assets return in year t and variable product describing interaction of the decision to pay dividends in year t and return on assets in year t. Note that earnings in year t, t + 1 and t + 2 were related to the assets at the end of year t – 1:

$$\left(E_{it+1}/TA_{it-1}\right) = \alpha_0 + \alpha_1 D_{it} + \alpha_2\left(E_{it}/TA_{it-1}\right) + \alpha_3 D_{it}\cdot\left(E_{it}/TA_{it-1}\right) + \varepsilon_{it} \quad (3)$$

and

$$\left(E_{it+2}/TA_{it-1}\right) = \alpha_0 + \alpha_1 D_{it} + \alpha_2\left(E_{it}/TA_{it-1}\right) + \alpha_3 D_{it}\cdot\left(E_{it}/TA_{it-1}\right) + \varepsilon_{it} \quad (4)$$

where

E_{it}/TA_{it-1} — firm's earnings in year t to total assets in the end of year t – 1 and in % (return on assets),
E_{it+1}/TA_{it-1} — firm's earnings in year t +1 in relation to total assets in the end of year t – 1 in %,
E_{it+2}/TA_{it-1} — firm's earnings in year t +2 in relation to total assets in the end of year t – 1 in %,
D_{it} — an indicator variable set to 1 if a dividend is paid by firm and in year t and 0 otherwise,
$D_{it}\cdot(E_{it}/TA_{it-1})$ — interaction between D_{it} and E_{it}/TA_{it-1}.

If we assume that variable E_{it}/TA_{it-1} is a measure of total assets profitability, then variable $D_{it}(E_{it}/TA_{it-1})$ is profitability of companies paying dividends in year t. Thus, the authors believe that earnings quality is determined by their earnings persistence. Hence, the above models can be called earnings persistence models. Model (3) indicates how persistent are earnings achieved by companies in year t in the following year $(t + 1)$, while the model (4) indicates how persistent are earnings achieved by companies in year t two years later $(t + 2)$.

In this regression, coefficient α_2 measures the persistence of earnings of all firms (irrespective if the firm pays a dividend or not). Under the hypothesis that dividends are informative about the quality of reported earnings, it is expected that the coefficient on earnings will be larger for dividend-paying firms, indicating that their earnings are more persistent $(\alpha_3 > 0)$. The sum of the coefficients α_2 and α_3 informs us about the earnings persistence of companies paying dividends (Skinner & Soltes, 2011, p. 14).

Skinner and Soltes analyzed a sample including all non-utility, non-financial domestic firms quoted on the NYSE, AMEX, and NASDAQ from 1974 to 2005. Altogether, they gathered a total of 123,728 observations (Skinner & Soltes 2011, p. 10). They estimated all regressions using the ordinary least squares method with two-way robust standard errors (clustered by firm and time), to account for cross-sectional and time series dependence. Models were estimated separately for the three sub-periods: 1974-1983, 1984-1994 and 1994-2005.

In models describing earnings persistence in year t + 1 (model 3) values of estimated coefficients α_2 oscillated around 0.8 (respectively: 0.781, 0.812, 0.835) and were significant at the 0.01 level, which, according to the authors, means that the profits are fairly persistent. Furthermore, these parameters confirm the results of R. G. Sloan's study (1996), who received the value of the coefficient α_2 = 0.84. There is evidence of a modest increase in persistence over time, with the coefficient on earnings increasing from 0.78 in the earlier sub-period (1974 through 1983) to 0.84 in the most recent sub-period (1994 through 2005). Coefficients on a variable which is the product of a decision of dividend paying and earnings in relation to the value of assets ($D_{it}(E_{it}/TA_{it-1})$) are positive and statistically significant in all three sub-periods (respectively: 0.031, 0.080 and 0.064). It means that profits are more persistent for dividend payers. Since 1984, the sum of α_2 and α_3 coefficients for dividend payers has been around 0.90. Also, similar results are provided by models describing earnings persistence achieved in year t in two years later (model 4). However, coefficient values on variables describing earnings α_2 are a little lower than in the previous models. In this case, the sum of coefficients on the variables describing earnings for dividend payers in the period 1994–2005 is 0.730 + 0.099 = 0.829 (Skinner & Soltes, 2011, p. 15). It is worth emphasizing that the estimated models are characterized by a high degree of explanation. Adjusted coefficients of determination (Adj. R^2) values for earnings persistence models of year t + 1 range from 0.63 to 0.70, and for earnings persistence models for year t + 2 are slightly worse, ranging from 0.43 to 0.54.

The estimation results have shown that dividend payers have higher persistence (and thus quality) of earnings than those not paying dividends, and this relationship does not depend on the level of dividends paid.

METHODS PROPOSED FOR ASSESSING EARNINGS QUALITY OF COMPANIES LISTED ON THE WARSAW STOCK EXCHANGE

Data

The Warsaw Stock Exchange (WSE) is the most dynamically growing market in Central and Eastern Europe (Warsaw Stock Exchange, Wiener Börse, Prague Stock Exchange, Budapest Stock Exchange, Bucharest Stock Exchange, Bulgarian Stock Exchange). The WSE is the regional leader in terms of key market ratios such as the value of equities trading, the number of domestic and foreign companies, the number of IPOs and since 2009 capitalization, which in the end of 2009 was 105 billion euro and in the end of 2010 142 billion euro. The GDP share of capitalization of domestic companies leapt from 31% in the end of 2009 to 38% in the end of 2010. At the end of 2009 the WSE Main List comprised 397 companies (354 domestic and 25 foreign) and at the end of 2010 the number of quoted firms increased to 400 (373 domestic and 27 foreign)‡.

The database of all domestic companies listed on the Warsaw Stock Exchange from 1995 to 2009§ was a starting point for the calculation. It must be considered that only the companies whose shares were listed on the stock exchange throughout the entire year were taken into account. From the set of domestic companies, national investment funds were excluded due to their different method of financial reporting. Some companies were removed, which, in fact, were recorded throughout the year but were excluded from the stock exchanges in the first half of the next year.** Moreover, companies with negative equity values and companies with zero net revenues from sales of products, services, goods and materials (not engaged in any operating activities in a certain year) were excluded from the calculation.

With the development of the stock exchange, the number of companies admitted to the study each year increased. In 1995, the study included 44 companies, while in 2008, 293 companies. In this way, cross-section datasets for 14 years were obtained. Every year, this set consists of different numbers of observations and can be analyzed for each year separately. Also, annual data from all years can be combined and a set of pooled cross-sectional time-series data can be obtained. In total, this set consists of 2263 observations (companies – years). It should be emphasized that in this pooled set each observation ought to be treated as a separate entity.

The propensity to pay dividends of companies listed on the Warsaw Stock Exchange is much lower than in developed capital markets (Bartram, Brown, How & Verhoeven, 2009; DeAngelo, H., DeAngelo, L., & Skinner, 2008; von Eije & Megginson, 2008; Denis & Osobov, 2008). But on the Warsaw Stock Exchange, the characteristic for developed capital market process of 'disappearing dividends' (Fama & French, 2001) was not observed. The research results suggest the decision to equalize dividends and capital profits tax rate from 2004 and systematic CIT reduction was beneficial to increasing the share of companies paying dividends in the total number of listed companies. This allowed companies to allocate larger earnings to dividends (Kowerski, 2010).

‡ Warsaw Stock Exchange. Annual Report 2010, http://www.gpw.pl/raporty_roczne (accessed 4 February 2012).
§ Data from Notoria Service: http://ir.notoria.pl (accessed 4 February 2012).
** Such companies usually did not submit reports to Notoria Service.

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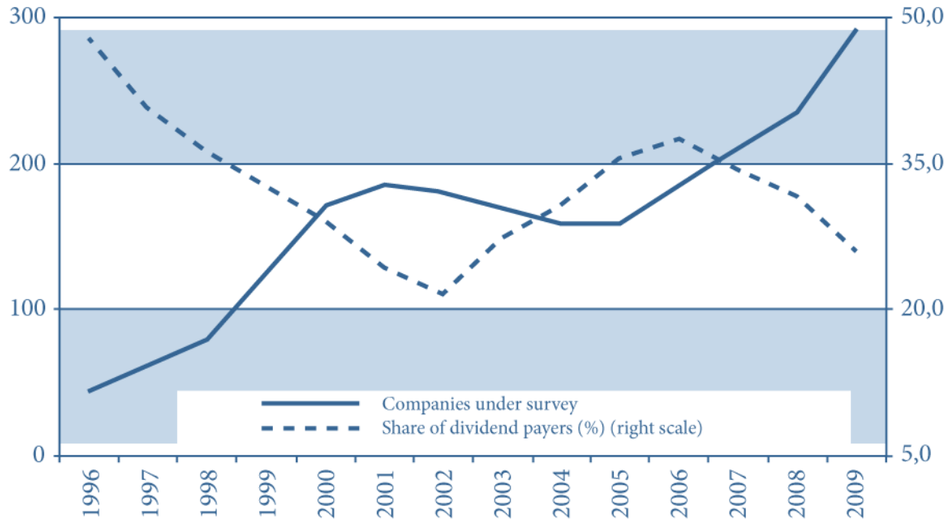
Figure 1: Changes in the number of companies under survey from 1996 to 2009 and share of dividend payers



Source: Own calculations

The dividend policy of companies listed on the Warsaw Stock Exchange has become more and more similar to the behavior of companies in developed capital markets. Dividend value, not only in current prices but also in constant prices, is growing rapidly. In 2009, the average dividend payout made by a company listed on the Warsaw Stock Exchange amounted to 84.3 million zloty and it was, in current prices, twenty six times higher while in constant prices, five times higher than the average payout in 1992. But the relation of dividends to GDP remains very low and does not exceed 1%. Also, we can observe an increase of payout concentration — a relatively small number of major companies pay increasing dividends, which represent a significant part of all payouts. Companies pay an increasing share of profits which makes the dividend payout ratio increase; the dividend yield ratio also increases.

From 1996 to 2009 shares of companies paying dividends underwent multidirectional changes. They were particularly high (above 40%) from 1996 to 1997. Then they fell to a minimum in 2002 (21.5%). From 2003 to 2006 they increased again to 37.5%. Since 2007, shares of dividend-paying companies have been falling.

Method of estimation

The method and models suggested and discussed by Skinner and Soltes in the previous chapter were used to test earnings quality of domestic companies listed on the Warsaw Stock Exchange.

According to model (3), a relation of earnings in year $t + 1$ to value of total assets at the end of year $t - 1$ is a function of dividend in year t, earnings in year t to the value of total assets at the end of year $t - 1$ and the product of two previous variables. This means that to calculate the values of dependent and independent variables it is necessary to have data about companies listed for the successive three years. In a baseline collection, not all companies met this criteria, therefore, only 1481 observations could be included in the study. According to model (4), earnings in year $t + 2$ to the value of total assets at the end of year $t - 1$ is a function of dividend in year t, earnings in year t to the value of total assets at the end of year $t - 1$ and the product of the two previous variables. Consequently, this means that to calculate the values of dependent and independent variables it is necessary to have data on companies listed for the successive four years. This limited the initial collection to 1195 observations.

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In both sets of data, there are single outlier observations of a dependent variable. Observations of this type can significantly change the final result of the analysis, and their disregard can be fatal. The simplest but quite effective method of 'coping' with outliers is to remove them from the collection of data under consideration, which increases the robustness of the estimated coefficients. Estimators obtained in this way are called 'robust estimators' and estimated models that can be called 'robust regression' denote a set of estimation techniques which are less sensitive than the ordinary least squares to the effect of possible influential observations (Baldauf & Santos Silva, 2009, p. 2).

In the present study, observations for which dependent variable values were lower than –100% or higher than 100%, were removed. As a result, the output set of observations for model 3 was reduced to 1468, while for model 4 to 1174.

It must be emphasized that the method used for selection of companies in the models (3) and (4), especially for robust estimation, can cause a sample selection bias (Heckman, 1976), with companies of a slightly better economic and financial situation. Firms with negative equity and those that were not listed or did not meet any of the criteria for creating the output database respectively by three or four successive years were removed from samples. On the other hand, the situation of companies excluded from the calculation usually so considerably deviates from the vast majority of companies included in samples that their presence not only would not help to explain changes in earnings quality but also could darken the depiction of the phenomenon.[††]

Because of the fact that the number of observations in particular years are different and still there is no information as to what time period (how many years) observations should be selected, recursive modeling was used consisting of estimating consecutive models of with increasingly shorter series emerging by removing the oldest data every year (Charemza & Deadman, 1997, p. 62-65).

The best method for estimating coefficients of models (3) and (4) proved to be a heteroskedasticity-corrected general least squares method.

THE RESULTS OF THE ESTIMATION OF EARNINGS PERSISTENCE MODELS OF COMPANIES LISTED ON THE WARSAW STOCK EXCHANGE

In 10 models of earnings persistence in the following year, using recursive modeling and starting from the initial set of observations (1481 observations from 1997 to 2008), coefficients on variable D_t were negative and statistically insignificant. A detailed analysis of results leads to the conclusion that a catalysis effect occurred (Hellwig, 1977) which caused the lack of coincidence of coefficients on Dt variable (Hellwig, 1976).[‡‡] Correlation coefficients between E_t+1/TA_{t-1} and D_t variables are positive, and coefficients on D_t variable are negative.

†† In the case of companies with negative equities, some indicators incorrectly inform about the situation of the company. For example, when such a company records a negative earning (which is very probable) then the rate of return on equity is positive — which could indicate a good financial situation.

‡‡ Coefficient αi fulfills the coincidence rule when sign αi = sign ri, where ri is correlation coefficient between dependent variable and i-th independent variable.

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Table 1: The results of estimation of earnings persistence models in year $t + 1$ with heteroskedasticity-corrected general least squares method

Observation years of E_{t+1}/TA_{t-1} variable	Number of observations	Constant		E_t/TA_{t-1}		$D_t(E_t/TA_{t-1})$		R^2	Adjusted R^2	Test of significance of R		$\alpha_2 + \alpha_3$
		coefficient α_0	*p* value	coefficient α_2	*p* value	coefficient α_3	*p* value			F Statistic	*p* value	
1997-2008	1468	0.6061	0.05544	0.5009	< 0.00001	0.3562	<0.00001	0.1981	0.1970	181.0	5.82E-71	0.857
1998-2008	1426	0.5259	0.10477	0.5069	< 0.00001	0.3594	<0.00001	0.1983	0.1971	175.9	5.27E-69	0.866
1999-2008	1367	0.6341	0.05277	0.4944	< 0.00001	0.3716	<0.00001	0.2003	0.1992	170.9	6.01E-67	0.866
2000-2008	1295	0.7683	0.02286	0.4500	< 0.00001	0.4069	<0.00001	0.1860	0.1847	147.6	1.84E-58	0.857
2001-2008	1185	0.9451	0.0061	0.4396	< 0.00001	0.4154	<0.00001	0.1856	0.1842	134.7	2.00E-53	0.855
2002-2008	1039	1.4338	0.00016	0.4664	< 0.00001	0.4162	<0.00001	0.2015	0.2000	130.7	2.38E-51	0.883
2003-2008	890	2.3058	<0.00001	0.4308	< 0.00001	0.3740	0.00002	0.1856	0.1838	101.1	2.79E-40	0.805
2004-2008	746	2.3969	<0.00001	0.4738	< 0.00001	0.3203	0.00026	0.1969	0.1947	91.1	4.23E-36	0.794
2005-2008	600	2.4024	0.00003	0.4498	< 0.00001	0.3002	0.00115	0.1837	0.1810	67.2	4.81E-27	0.750
2006-2008	461	2.4810	0.00059	0.4393	< 0.00001	0.3674	0.00050	0.1841	0.1806	51.7	5.74E-21	0.807
2007-2008	323	1.2964	0.11224	0.4666	< 0.00001	0.3073	0.01230	0.1974	0.1924	39.4	5.20E-16	0.774

Source: Own calculations in GRETL (Corttrell & Luchetti, 2010)

Table 2: The results of estimation of earnings persistence models in year $t + 2$ with heteroskedasticity-corrected general least squares method

Observation years of E_{t+1}/TA_{t-1} variable	Number of observations	Constant		E_t/TA_{t-1}		$D_t(E_t/TA_{t-1})$		R^2	Adjusted R^2	Test of significance of R		$\alpha_2 + \alpha_3$
		coefficient α_0	*p* value	coefficient α_2	*p* value	coefficient α_3	*p* value			F Statistic	*p* value	
1997-2008	1468	0,6061	0,05544	0,5009	<0,00001	0,3562	<0,00001	0,1981	0,1970	181,0	5,82E-71	0,857
1998-2008	1426	0,5259	0,10477	0,5069	<0,00001	0,3594	<0,00001	0,1983	0,1971	175,9	5,27E-69	0,866
1999-2008	1367	0,6341	0,05277	0,4944	<0,00001	0,3716	<0,00001	0,2003	0,1992	170,9	6,01E-67	0,866
2000-2008	1295	0,7683	0,02286	0,4500	<0,00001	0,4069	<0,00001	0,1860	0,1847	147,6	1,84E-58	0,857
2001-2008	1185	0,9451	0,0061	0,4396	<0,00001	0,4154	<0,00001	0,1856	0,1842	134,7	2,00E-53	0,855
2002-2008	1039	1,4338	0,00016	0,4664	<0,00001	0,4162	<0,00001	0,2015	0,2000	130,7	2,38E-51	0,883
2003-2008	890	2,3058	<0,00001	0,4308	<0,00001	0,3740	0,00002	0,1856	0,1838	101,1	2,79E-40	0,805
2004-2008	746	2,3969	<0,00001	0,4738	<0,00001	0,3203	0,00026	0,1969	0,1947	91,1	4,23E-36	0,794
2005-2008	600	2,4024	0,00003	0,4498	<0,00001	0,3002	0,00115	0,1837	0,1810	67,2	4,81E-27	0,750
2006-2008	461	2,4810	0,00059	0,4393	<0,00001	0,3674	0,00050	0,1841	0,1806	51,7	5,74E-21	0,807
2007-2008	323	1,2964	0,11224	0,4666	<0,00001	0,3073	0,01230	0,1974	0,1924	39,4	5,20E-16	0,774
2008	177	-1,3247	0,23739	0,3869	0,00005	0,4635	0,02673	0,1558	0,1461	16,1	3,97E-07	0,850

Source: Own calculations in GRETL (Corttrell & Luchetti, 2010)

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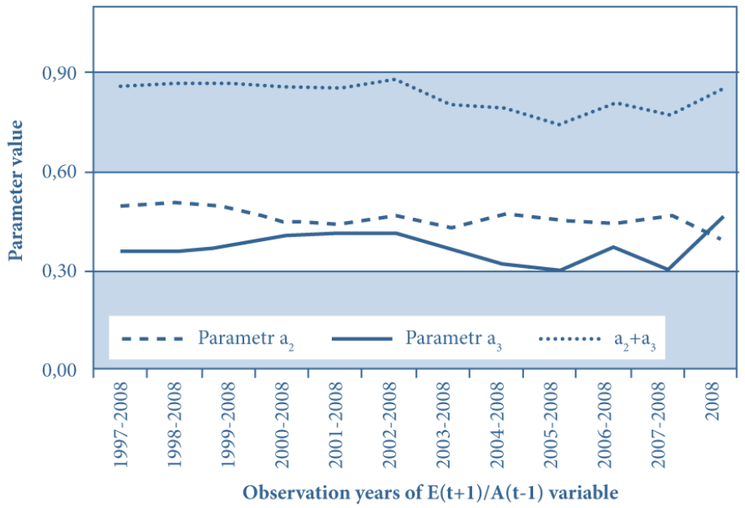
Only in the models for 2007-2008 and for 2008, parameters on the Dt variable were coincident but also statistically insignificant. Therefore, it was decided to reject the Dt variable and to estimate models of earnings persistence in the following year, dependent on the two other variables.

Figure 2: Changes in values of coefficients in earnings persistence models in the following year ($t + 1$) estimated by recursive modeling method



Source: Own calculations

Estimated by a recursive method, coefficients are characterized by very high stability. The model estimated on data from the years 2002 to 2008 (1039 observations) is characterized by the highest value of the adjusted determination coefficient although this value (0.2000) is much lower than in Skinner-Soltes models.§§ This model will serve for a more detailed analysis.***

Estimated in this model, coefficient α_2 is 0.467 and thus is about 0.34 lower than estimated by Skinner-Soltes coefficient α_2 for the U.S. Stock Exchanges. Furthermore, estimated coefficient α_3 is 0.416 and is many times higher than coefficient α_3 estimated by Skinner-Soltes for the U.S. Stock Exchanges.††† This means that in Warsaw, earnings of companies paying dividends are more persistent than companies not paying dividends than in New York. In Warsaw, in year t, the increase of return on total assets of the company paying the dividend by 1 percentage point caused the increase of earnings value in year $t + 1$ to the value of total assets in year $t - 1$ by 0.883 percentage points, while in the case of a company not paying dividends only by 0.416 percentage points. On the New York Stock Exchanges, the difference in favor of companies paying dividends, in the test period, did not exceed 0.08 of a percentage point.

Applying similar procedures as in the case of earnings persistence models in the following year, models of earnings persistence two years later were estimated. In this case, removing 21 outliers provided models that can be used to assess the phenomenon. As in the case of earnings persistence models in the following year, again coefficients on the D_t variable proved to

§§ On the other hand, the value of F statistic indicates the significance of the multiple correlation coefficient R (p = 3.00E-29) and thus the overall significant effect of both variables on the earnings persistence in the following year. A relatively low determination coefficient value in cross-section models and cross-time models estimated on large sets of micro data is quite common (Gruszczyński, 2002, p. 55).

*** It should be emphasized, however, that other earnings persistence models in the following year, obtained from recursive modeling, are characterized by features similar to the discussed model.

††† Of course, comparisons of results obtained for the Warsaw Stock Exchange and for New York Stock Exchanges should be treated with caution mainly because of the much smaller number of observations on WSE.

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be not coincidental. Therefore, models with two exogenous variables were estimated. The estimated models of earnings persistence two years later have much lower quality than the models of earnings persistence in the following year.‡‡‡ The highest value of the adjusted determination coefficient does not exceed 0.12. Estimated values of coefficients α_2 are significantly lower than in previous models, whereas the values of coefficients α_3 are rising as the number of observations decreases. Starting from a model estimated on data from 2001-2008, with the exception of a model estimated on data from 2005-2008, estimated coefficients of α_3 are higher than estimated coefficients of α_2. For example, in 2003-2008 the increase of return on total assets of the company paying the dividend in year t by 1 percentage point caused an increase in earnings in year $t + 2$ to the value of assets in year $t - 1$ by 0.787 percentage points, while in the case of a company not paying dividends, the increase was only about 0.324 percentage points. These results are even stronger support for the argument that companies paying dividends have higher earnings persistence quality. The impact of dividend policy on improving earnings persistence has been particularly evident in recent years.

‡‡‡ Also estimated by Skinner and Soltes models of earnings persistence two years later were characterized by slightly lower quality than earnings persistence models in the following year, still the differences were small.

Conclusions

The study has shown that it is more clearly visible on the Warsaw Stock Exchange than on developed capital markets that companies paying dividends are characterized by higher quality of earnings measured by their persistence. It could be said that Warsaw Stock Exchange is full justification for the motto of this study that 'dividends tell the truth' — in this case, about the quality of a company's profit. From the other side the results of the presented studies are biased with the small samples. So the calculations should be repeated in subsequent years with the further development of the Warsaw Stock Exchange and the increase of the number of quoted stocks (the increase of the number of observations).

The presented method of evaluation of earnings quality can be recommended to other emerging markets.

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References

Baldauf, M., & Santos Silva, J. M. C. (2009, January). On the use of robust regression in econometrics. *University of Essex Discussion Paper Series,* 664.

Bartram, S. M., Brown, P., How, J. C. Y., & Verhoeven P. (2009). Agency Conflicts and Corporate Payout Policies: A Global Study". Retrieved from http://ssrn.com/abstract=1068281.

Bhattacharaya, S. (1979). Imperfect Informations, Dividend Policy, and 'The Bird in the Hand' Fallacy. *Bell Journal of Economics,* 10(1), 259-270.

Brav, A., Graham, J. R., Harvey, C. R., & Michaely R. (2005, September). Payout policy in the 21st century. *Journal of Financial of Economics,* 77(3), 483-527.

Charemza, W. W., & Deadman, D. F. (1997). *New Directions in Econometric Practice* (2nd ed.). Lyme, NH: Edward Elgar.

Cottrell, A., & Lucchetti, R. „Jack". (2010). *Gretl User's Guide*. Retrieved from http://www.gnu.org/licenses-/fdl.html.

DeAngelo, H., DeAngelo, L., & Skinner D. J. (2008). Corporate Payout Policy. *Foundations and Trends® in Finance,* 3(2-3), 95–287.

Dechow, P., Ge, W., & Schrand, C. (2010, December). Understanding earnings quality: a review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics,* 50(2-3), 344–401.

Denis, D., & Osobov, I. (2008, July). Why do firms pay dividends? International evidence on the determinants of dividend policy. *Journal of Financial Economics,* 89(1), 62-82.

von Eije, H., & Megginson, W. (2008, August). Dividends and share repurchases in the European Union. *Journal of Financial Economics,* 89(2), 347-374.

Fama, E. F., & French, K. F. (2001, April). Disappearing dividends: changing firm characteristics or lower propensity to pay? *Journal of Financial Economics,* 60(1), 3-43.

Gruszczyński, M. (2002). *Modele i prognozy zmiennych jakościowych w finansach i bankowości.* Warszawa: Oficyna Wydawnicza Szkoły Głównej Handlowej w Warszawie.

Heckman, J. J. (1976). The common structure of statistical models of truncation, sample selection and a limited dependent variables and a simple estimator for such models. *Annales of Economic and Social Measurement,* 5(4), 120-137.

Hellwig, Z. (1976). Przechodniość relacji skorelowania zmiennych losowych i płynące stąd wnioski ekonometryczne. *Przegląd Statystyczny,* 23(1), 3-20.

Hellwig, Z. (1977). Efekt katalizy w modelu ekonometrycznym, jego wykrywanie i usuwanie. *Przegląd Statystyczny,* 24(2), 179-191.

John, K., & Williams, J. (1985, September). Dividends, Dilution and Taxes: A Signaling Equilibrium. *The Journal of Finance,* 40(4), 1053-1070.

Kowalewski, O., Stetsyuk, I., & Talavera, O. (2007). Do corporate governance and ownership determine dividend policy in Poland? *Bank i Kredyt,* 38(11-12), 60-86.

Kowerski, M. (2010). Wpływ opodatkowania na politykę dywidend spółek handlowych. *Ekonomista,* 3, 409-422.

Lintner, J. (1956, May). Distribution of Incomes of Corporation Among Dividends, Retained Earnings and Taxes. *American Economic Review.* 46(2), 97-113.

Miller, L. (2006). The Single Best Investment. Creating Wealth with Dividend Growth. Chicago: Independent Publishers Group.

Miller, M., & Modigliani, F. (1961, October). Dividend Policy, Growth and Valuation of Shares. *The Journal of Business,* 34(4), 411-433.

Myers, S. C., & Majluf, N. S. (1984, June). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics,* 13(2), 187-221.

Nowak, E. (2009). Wynik finansowy przedsiębiorstwa. In K. Czubakowska, W. Gabrusewicz, & E. Nowak (Eds.), *Przychody — Koszty — Wynik finansowy przedsiębiorstwa.* Warszawa: Polskie Wydawnictwo Ekonomiczne.

Skinner, D. J., & Soltes, E. (2011, March). What Do Dividends Tell Us About Earnings Quality? *Review of Accounting Studies,* 16(1), 1-28.

Sloan, R. G. (1996, July). Do Stock Prices Fully Reflect Information in Accruals and Cash Flows About Future Earnings? *The Accounting Review,* 71(3), 289-315.

Wąsowski, W. (2010). *Kreatywna rachunkowość.* Fałszowanie sprawozdań finansowych. Warszawa: Difin.