CAN INCREASING DIVIDENDS BE A SYMPTOM OF THE FINANCIALIZATION OF THE POLISH ECONOMY?

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Abstract

Because operationally financialization may be detected by the increase of interest, dividends, or capital gains, the paper tries to answer the question as to whether the increased dividend payments observed in Poland can be a symptom of financialization. Analysis of basic tendencies of changes in propensities to pay dividends, values, structures and payout ratios of companies quoted in the years 1992–2014 on the Warsaw Stock Exchange tend towards the conclusion that the increase of dividend payouts at this time is not a sign of financialization of the economy. But because most of the phenomena connected with the dividend policy of the companies quoted on the WSE show similar tendencies to those of the developed equity markets, this may be a symptom of the financialization of the Polish economy in the future.

Introduction

Financialization characterizes a situation where capitalism is affected by a dominance of the financial sector relative to the production sector. "This dominance may be detected in various observations, such as neo-liberal economic policy, the ascendancy of shareholder value, rising levels of corporate and household debt, wage stagnation and income polarization, rising global imbalances, and increasingly volatile and fragile financial markets" (Nölke, 2012, p. 1). More operationally, this dominance may be detected by the increase of interest, dividends, or capital gains (Krippner 2005, p. 174).

The subject of this work is one of the indicators of financialization, which is the increase of dividend payouts.

The value of paid dividends is steadily rising worldwide. As the research carried out by Henderson Global Investor (2016) showed in 2012 it exceeded $1 trillion ($ 1012), in 2015 it was already $1,15 trillion. The amount of dividends paid out is rising in Poland as well. Yet, the Polish financial market launched in the early 1990s "from scratch", which is why it is difficult to establish – based only on one indicator, the high dynamics of paid dividends – if it is a symptom of high financialization of the economy or a sign of developing a "healthy" market economy. This is why in this work changes in dividend policy of public companies have been thoroughly analysed. What is more, observed tendencies have been compared to those which appear in developed equity markets. Changes in propensities to pay dividends, values, structures and payout ratios throughout the timeframe of 1992–2014 have been analysed. What has also been investigated is the dependence of changes in propensity to pay dividends and the payout ratios in correlation with the economic situation.

Low but rising propensity to pay dividends

As of the end of 2014, amongst the 641 companies ever listed on the Warsaw Stock Exchange (WSE), 390 (60,84%) of them, amongst them 31 foreign firms, have paid dividends at least once[1].

The fraction of companies paying dividends which may be a measure of payout propensity has undergone multidirectional changes. In the beginning era of the Polish stock exchange and a small number of large enterprises, a high but variable number of companies paying dividends has been observed. In the early 21st century this amount fell. In 2002 only 18,5% of companies quoted at the end of this year paid dividends. Since 2003 a rise of payouts was observed again. It was disturbed by drops in 2007 and 2010. Since 2011 over 30% of companies quoted on the WSE have been paying dividends and in 2014 this propensity was 36,7%.

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[1]   In 2007 it was 47,79% (Kowerski, 2008, p. 655).

Figure 1: Changes in the number of companies paying dividends on the WSE throughout 1992–2014
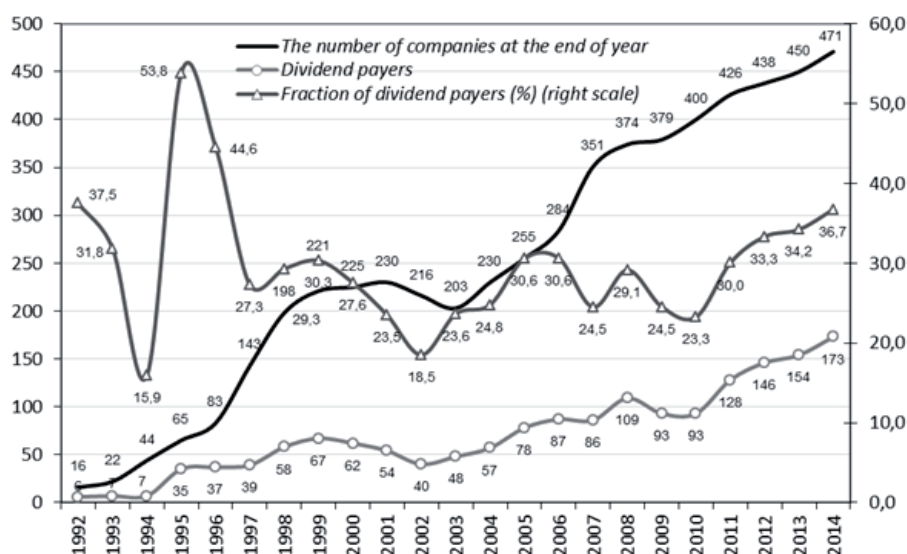
Source: Own calculations based on the data from the stock Fact Books of 1992–2015 published by WSE

While discussing the changes in tendencies of dividend payouts it has to be noted that, excluding its start in, volatile period, a phenomenon of "drastically disappearing dividends", which worried many researchers of developed equity markets on the WSE, has not been observed. Fama and French (2001) showed that the fraction of American industrial companies paying dividends dropped drastically in the second half of the 20th century – from over more than 80% through 66,5% in 1978 to 20,8% in 1999. The research of Farre-Mens and others (2014) indicated that 2002 was the last year of the drop of the fraction of companies paying dividends in the US; in 2012 it was 35% and it was the highest since 1985[2].

The phenomenon of the drop in propensity to pay dividends is typical for many developed equity markets. Hail and others (2014), using data of 32531 companies with the value of assets over 10 mln $ from 49 countries (222 766 observations), showed a drop of the fraction of dividend payers from 77,7% in 1993 to 55,6% in 2008. At the same time in Poland a slight increase of propensity to pay dividends was observed, but in the group of the countries researched by Hail and others (2014) Poland had still the lowest propensity. Similar results were obtained by Bertram and others (2007).

The propensity to pay dividends can also be calculated as the quotient of the number of executed payouts to the number of possible payouts multiplied by 100%[3] (Kowerski, 2008, p. 656). Such a coefficient of the propensity to pay dividends will be further used in this work. In the years 1992–2014 the value of this coefficient was 31,59%. Foreign companies had a higher propensity to pay dividends (34,60%) than domestic ones (31,43%).

What is also worth mentioning is a very big and statistically significant difference between the mean number of possible dividend payouts by the companies which have paid dividends at least once and those which have never paid them ($p < 0,0001$). Dividend payers are listed on the stock exchange two times longer, which may be one of the factors proving the life cycle theory of dividends of the company (deAngelo et al., 2006). "Dividends tend to be paid by mature, established firms, plausibly reflecting a financial lifecycle in which young firms face relatively abundant investment opportunities with limited resources so that retention dominates distribution, whereas mature firms are better candidates to pay dividends because they have higher profitability and fewer attractive investment opportunities" (deAngelo et al., 2006, p. 228).

Of course, individual companies had a very different propensity to pay dividends. Out of 390 dividend payers, 107 (27,44%) paid them only once and 95 of them were listed on the stock exchange for more than a year, which means that they had the possibility to make more payouts.

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2   It is believed that one of the most important factors contributing to this rise was the 2003 act on a dividends tax cut from 35% to 15%. Amongst other works: (Chetty & Saez, 2005), (Schroeiber & Stroik, 2005, pp. 30–31), (Brav et al., 2008).

3   The number of possible payouts is the number of years the company was listed on the stock exchange excluding the starting year. If the company paid dividends in its starting years, it has also been included.
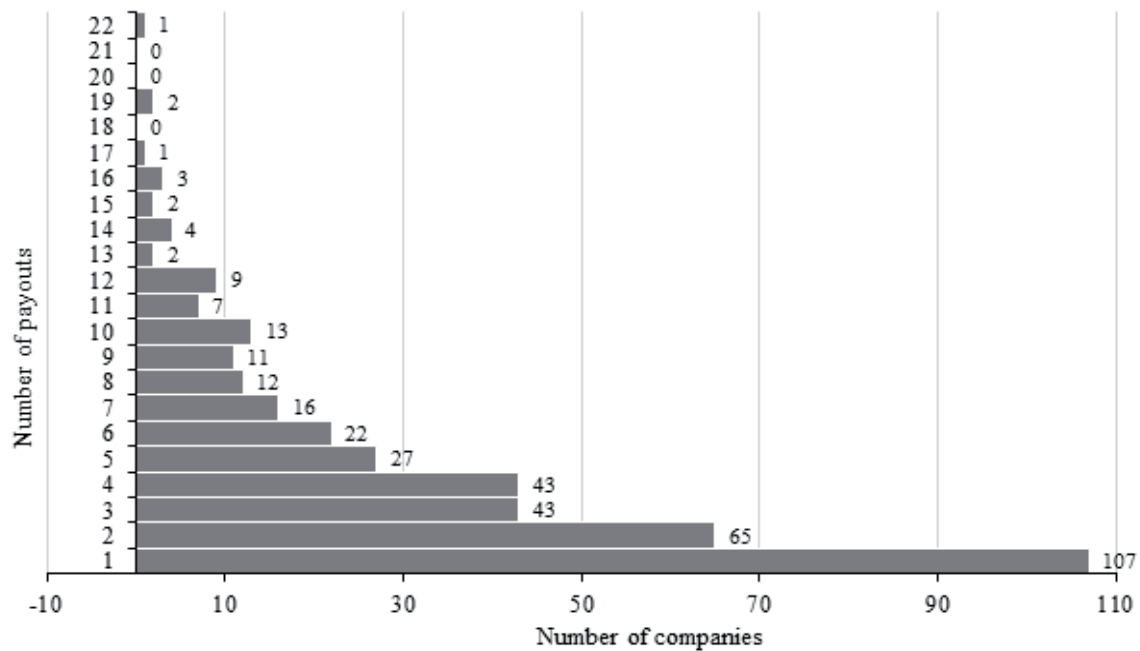
Table 1: Propensity to pay dividends by companies quoted on the WSE in the years 1992–2014

Specification	Number of companies		The maximum possible number of dividend payouts				Number of paid dividends		Propensity to pay dividends (%)		
			numbers		on average per company						
	total	domestic	total	domestic	total	domestic	total	domestic	total	domestic	foreign
Companies which have paid a dividend at least once	390	359	3798	3635	9,74	10,13	1664	1573	43,81	43,27	55,83
Companies which have never paid a dividend	251	223	1470	1370	5,86	6,14	0	0	0	0	0
Total	641	582	5268	5005	8,22	8,6	1664	1573	31,59	31,43	34,6

Source: Own calculations based on the data from the stock Fact Books of 1992–2015 published by WSE

Figure 2: Companies distribution by the number of paid dividends

Source: Own calculations based on the data from the stock Fact Books of 1992–2015 published by WSE

The most frequent dividend payers are ŻYWIEC (22 times), EFEKT and DĘBICA (19 times), APATOR (17 times) and HANDLOWY, HYDROTOR and INGBSK (16 times). However, if we compare the number of executed payouts to the number of possible payouts and take into account only those companies which had at least 5 possibilities[4] it appears that only 19 businesses always paid dividends.

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4   The number of 5 possibilities has been chosen in an arbitral way. However, it is assumed that 5 years is long enough to formulate the company's strategy of dividend policy.

**Table 2: Companies quoted at least 5 years with the highest propensity to pay dividends**

Rank	Company	Sector	The year of listing	The number of paid dividends	The maximum possible number of dividend payouts	Propensity to pay (%)
1	HYDROTOR	Electroengineering	1998	16	16	100
2	STALPROFI	Retails and Wholesale	2000	15	15	100
3	ATMGRUPA	Media	2004	11	11	100
4	SNIEZKA	Buildings materials (to 2008 Chemicals)	2003	11	11	100
5	NEUCA	Retails and Wholesale	2004	10	10	100
6	PKOBP	Banking	2004	10	10	100
7	DECORA	Buildings materials (to 2006 Chemicals)	2005	9	9	100
8	EUROCASH	Retails and Wholesale	2005	9	9	100
9	DOMDEV	Developers	2006	8	8	100
10	EUROTEL	Retails and Wholesale	2006	8	8	100
11	PULAWY	Chemicals	2005	8	8	100
12	ASSECOSLO	IT	2006	8	8	100
13	ELEKTROTI	Construction	2007	7	7	100
14	RADPOL	Plastics materials	2007	7	7	100

15	ENEA	Energy	2008	6	6	100
16	UNIBEP	Construction	2008	6	6	100
17	ASSECOSEE	IT	2009	5	5	100
18	PGE	Energy	2009	5	5	100
19	PZU	Insurance	2010	5	5	100
20	ZYWIEC	Food	1991	22	23	95,7
21	DEBICA	Automobiles	1994	19	20	95
22	APATOR	Electroengineering	1997	17	18	94,4
23	HANDLOWY	Banking	1997	16	17	94,1
24	BZWBK	Banking	2001	12	13	92,3
25	EMPERIA	Retails and Wholesale	2002	11	12	91,7
26	EFEKT	Retails and Wholesale	1993	19	21	90,5

Source: Own calculations basing on the data from the stock Fact Books of 1992–2015 published by WSE

Figure 3: Fraction of companies which have paid a dividend at least once in the years 1992–2014 by mega-sectors. Domestic companies (%)
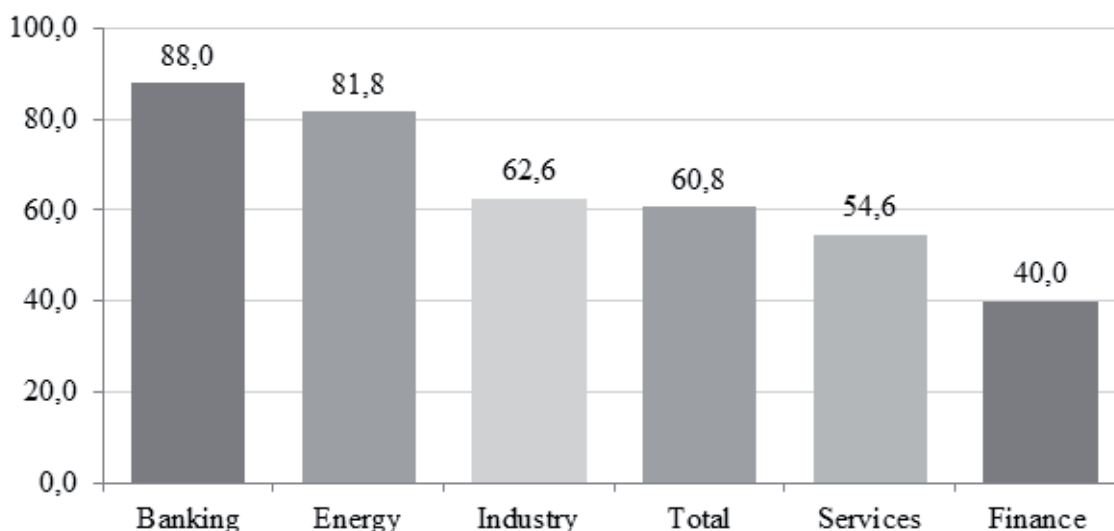
Source: Own calculations basing on the data from the stock Fact Books of 1992–2015 published by WSE

When divided into megasectors, energy companies had the highest propensity to pay dividends (60,9%). Financial corporations (with the exception of banks) had the lowest propensity.

HIGHER PROPENSITY TO PAY DIVIDENDS DURING A GOOD ECONOMIC SITUATION

In the past research of indicators determining decisions of paying dividends by public companies more importance and more attention was given to the microeconomic variables describing the economic and financial situation of a given company[5] than to macroeconomic conditions. One of the few exceptions is a publication by Marcus and Martin Jacob (2010), who analysed 16518 companies in 25 countries over the years 1990–2008 (including those in Poland since 1992). The authors showed a positive influence of the GDP growth rate on the dividend decisions. Also, earlier research of the author had presented a significant influence of the macroeconomic situation measured by the GDP growth rate and the PLN exchange rate to the dollar on the dividend decisions of the companies listed on the WSE (Kowerski, 2011).

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5   Amongst other seminal works (Lintner, 1956), (Fama & French, 2001), (deAngelo et al., 2006), (Denis & Osobov, 2008), (von Eije & Megginson, 2008), (deAngelo et al., 2008).

Figure 4: Propensity to pay dividends by mega-sectors in the years 1992–2014. Domestic companies (%)

Source: Own calculations based on the data from the stock Fact Books of 1992–2015 published by WSE

In this work, the author presents the outcome of analysing the dependence between the propensity to pay a dividend measured by the fraction of the dividend payers in the year t to the total number of companies listed in the end of the year t[6] and the economic situation measured with the arithmetic mean of the GDP growth rate in the years $t–1$ and t. This stems from the assumption that the decision of paying the dividend in the year t will be based on the economic situation in the last fiscal year, when the profit was "generated" together with the situation in the current year, when the dividend decision is being made. Due to the very small number of companies listed in the first years of the stock exchange, which could distort the result, it has been decided that the research would cover those enterprises which made dividend payout decisions in the years 1995–2014.

To investigate the relation between the dividend decisions of the domestic companies listed on the WSE and the economic situation of Poland, a logit model of changes in the proportion of companies paying dividends in the total amount of the companies listed throughout the following years has been adopted.

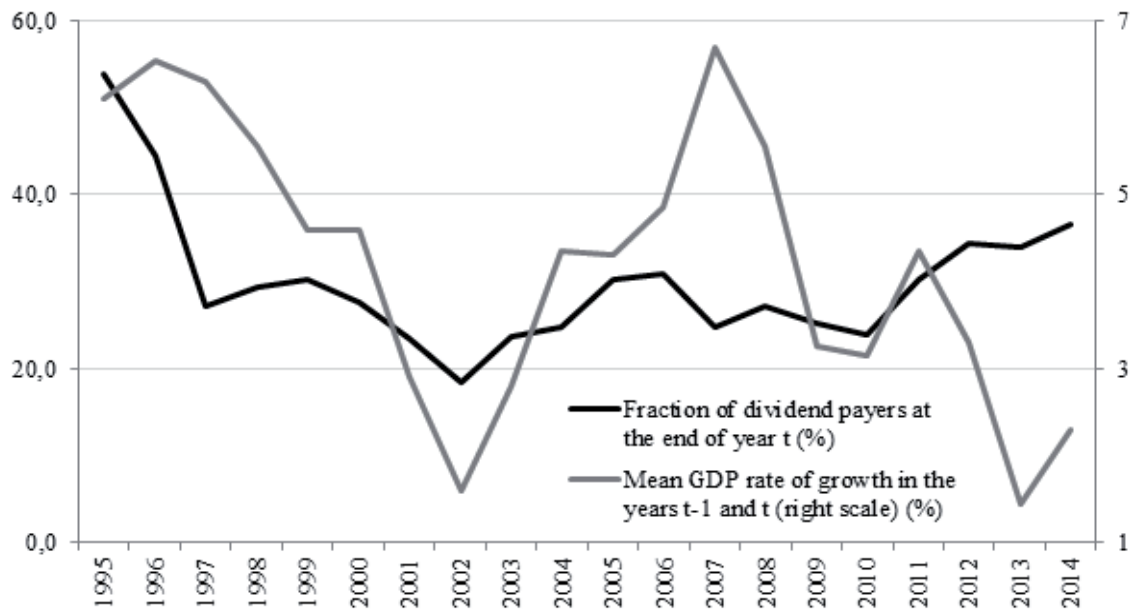$$LogitY_t = \alpha_0 + \alpha_1 SrPKB_{t-1,t} + \sum_{j=1}^{k} Z_{j,t-1,t} + \varepsilon_t$$
where:

Y_t - the proportion of companies paying dividends in the year t,

$LogitY_t = \ln \dfrac{Y_t}{1-Y_t}$ - logit of the Y variable, which us a natural logarithm of odds ratio [Maddala, 2006, pp.

372–373],

$SrPKB_{t-1,t}$ - arithmetic mean of the GDP growth rate in the years $t–1$ and t,

$Z_{1t-1,t}, Z_{2t-1,t}, ...Z_{kt-1,t}$ - macroeconomic control variables of the year $t–1$ or (and) t,

ε_t - random disturbance,

$t = 1,2,.......n$ - number of years.

Because of the heteroskedasticity of random disturbances of the linear logit model, in order to estimate structural coefficients the weighted least square method is used [Jajuga, 1990, pp. 229–230].

In the presented research for control variables have been used:

WIG_{t-1} - rate of return of WIG (a WSE index) in the end of the year $t–1$ (%)

WIG_t - rate of return of WIG in the end of the year t (%)

DYR_t - dividend yield ratio in the end of the year t (%)

$PROP_t$ - the proportion of dividend payers in the total amount of companies listed in the end of year t

INF_{t-1} - the inflation rate of the year $t–1$ (%)

INF_t - the inflation rate of the year t (%)

UNE_t - the number of unemployed in the end of the year t (thousands)

CAP_t - the relations of capitalisation in the end of the year t to the GDP of the year t (%)

USD_t - the average annual exchange rate of the dollar in the year t (PLN).

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6   Using such a way of calculating means that a company which paid a dividend in the year t and in the same year has been excluded from the stock exchange was not included in the denominator of the quotient. However, because of few such case, this should not distort the conducted inference.

Figure 5: Changes of the fraction of dividend payers in the year *t* and mean GDP rate of growth in the years *t–1* and *t* throughout 1995-2014. Domestic companies

Source: Own calculations

The model of the highest coefficient of determination (0,9197), with all significant coefficients on the level of 0,05 was the one in which apart from the mean GDP growth rate two time variables (*t* and t^2), the rate of return of WIG in the year *t–1* and the number of unemployed of the year *t* have been included. The positive sign of the coefficient on the $SrPKB_{t-1,t}$ supports the hypothesis on the higher propensity to pay dividends in the times of a good economic situation. The quadratic form with the positive sign of a coefficient on the square time variable t^2 in the model means that the propensity to pay dividends was initially falling and after reaching its minimum for the $t=11,75$ in 2006 started to rise. The negative sign of the coefficient on the return rate of a stock index in the end of the year before the year of the payout could mean that companies by paying a dividend try to compensate their shareholders for incurred financial losses.

Table 3: Estimation results of the logit model of the fraction of dividend payers in the years 1995–2014. Weighted least squares method

Specification		Coefficient value	P value
Constant		−1,6305	<0,0001
Variables	*t*	−0,2528	<0,0001
	t^2	0,0108	<0,0001
	$SrPKB_{t-1,t}$	0,2163	<0,0001
	WIG_{t-1}	−0,0031	0,0002
	UNE_t	0,0004	<0,0001
F statistic (5 ; 14)		32,06	<0,0001
First order autocorrelation coefficient			−0,1237
Durbin-Watson Statistic (d (d'))		2,22 (1,78)	dl=0,79
			du=1,99

Test for normality of residual. Null hypothesis: error is normally distributed	0,64	0,7248
Test statistic: Chi-square		
Determination coefficient R2		0,9197
Adjusted determination coefficient Adj. R2		0,891

Remark: HAC standard errors, bandwidth 2 (Bartlett kernel)
Source: Own calculations with GRETL (Cottrell & Lucchetti, 2015)

Fast growth of the value of paid dividends

Rapid growth of the WSE resulted in a similarly fast growth of net profits in the absolute values and, as a consequence, very fast growth of paid dividends values.

These values[7] in constant prices of 2014[8] rose from 115,1 million PLN in 1992 to 22089,6 million PLN in 2014, which was 1,3% of the GDP. The highest value of the dividends took place in 2012 (22676,4 million PLN – 1,4% GDP). It
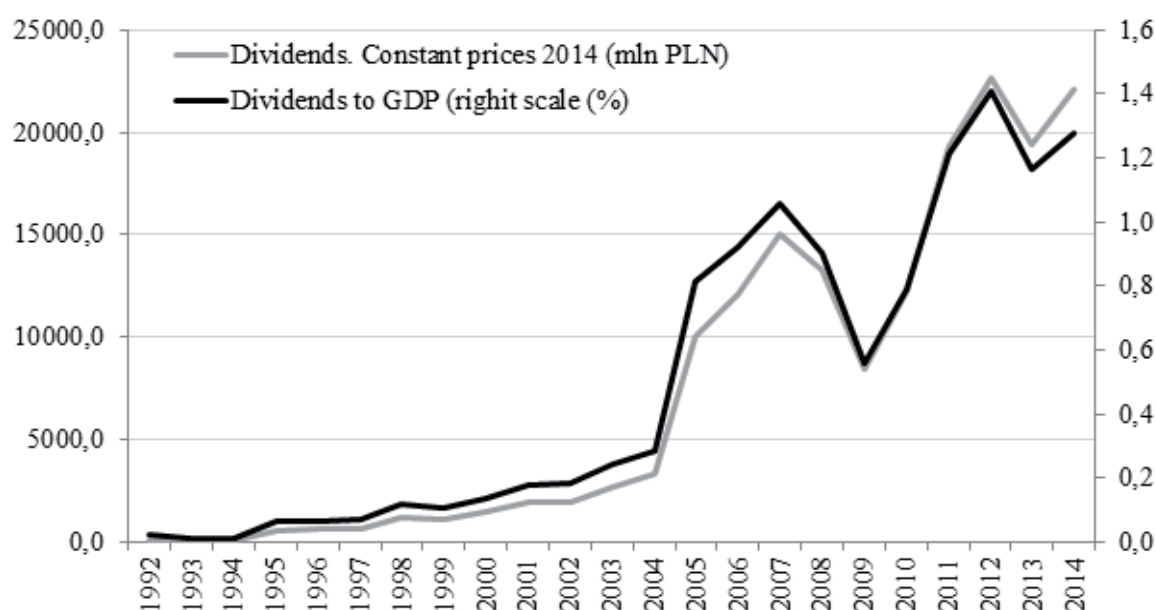
must be, however, noted that the dividend-GDP relation in Poland is still a 0,4 percentage point lower than the world average and almost ten times lower than in Hong Kong, which takes the first place and more than three times lower than in Switzerland and Great Britain, taking the two subsequent places (Kowerski, 2015).

The changes of the values of paid dividends were not uniform. Their increase was somewhat small in the years 1992–2004 (the yearly average growth rate in the constant prices of 2014 was 29,6%). In 2005 the value of dividend payout rose three times in comparison with the last year, and in the years 2006–2007 it rose a further 50,8%. During the following two years the value of payouts drastically dropped (of 44,1%). Since 2010 it had been rising to a record level in 2012. Then, in 2013 it decreased by 14,4% and in 2014 almost reached the level of 2012.

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[7] In this work non-cash dividends were not taken into account. One of these, for example, was transferring its gas network subsystem to the state by PGNiG as a dividend.
[8] In order to ensure the comparability of paid dividends over time, similarly to DeAngelo, DeAngelo and Skinner (2008, pp. 139–140) for American companies, Denis and Osobov (2008, p. 75) for companies from selected developed equity markets or von Eije and Megginson (2008) for the "old EU" companies, the values of dividends were converted into 2014 prices, using the consumer price index (CPI).

Figure 6: Value of paid dividends and relation of the dividend to GDP in the years 1992–2014 on the WSE

Source: Own calculations on the resolutions of annual general meetings of shareholders published by
http://www.bankier.pl

Altogether, the domestic companies listed on the WSE during the timeframe of 1992–2014 paid out dividends of 170257,1 million PLN value (in 2014 prices). More than one third of this was dividends paid out by banks. However, the amount of bank payouts is declining[9].
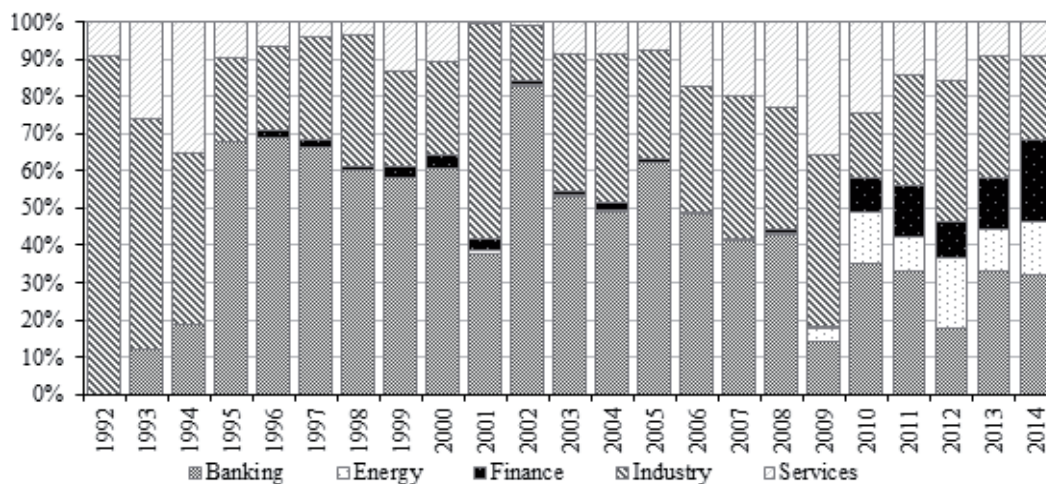
Only slightly smaller is the amount of payouts made by industrial companies. Over the last years the amount of payouts made by other financial companies and energy companies is increasing.

Table 4: Dividends paid in the years 1992–2014 by mega-sector

Mega-sector	Value of dividends paid in the years 1992–2014. Constant prices 2014 (mln PLN)	Struktura (%)
Banking	61925,3	36,4
Energy	13457,9	7,9
Finance	14308,1	8,4
Industry	54010,6	31,7
Services	26555,1	15,6
Total	**170257,1**	**100**

Source: Own calculations on the resolutions of annual general meetings of shareholders published by http://www.bankier.pl

Figure 7: Changes in sector structure of the values of dividends paid in the years 1992–2014

Source: Own calculations

It is understandable that much of the increase of the paid dividends value stems from the increase of the number of the companies listed at the stock exchange. This is why the more appropriate measure of the changes in the dividend values is the average payout made by a company. During the timeframe of the stock exchange functioning in Warsaw the average value of the payout rose (in 2014 prices) more than seven times (from 19,2 million PLN in 1992 to 143,4 million PLN in 2014). The highest payout per company was observed in 2007 (185,5 million PLN).

The highest single dividend payout in the history of the WSE was made by KGHM in 2012: 5688 million PLN, which in 2014 prices is 5719 million PLN. The value of twenty of the biggest payouts on the WSE's history equates 33,8% of the total payout value. The twenty biggest payouts were made by six companies.

Figure 8: Changes of distributable profit and dividend per company paying dividend. Constant prices 2014 (mln PLN)
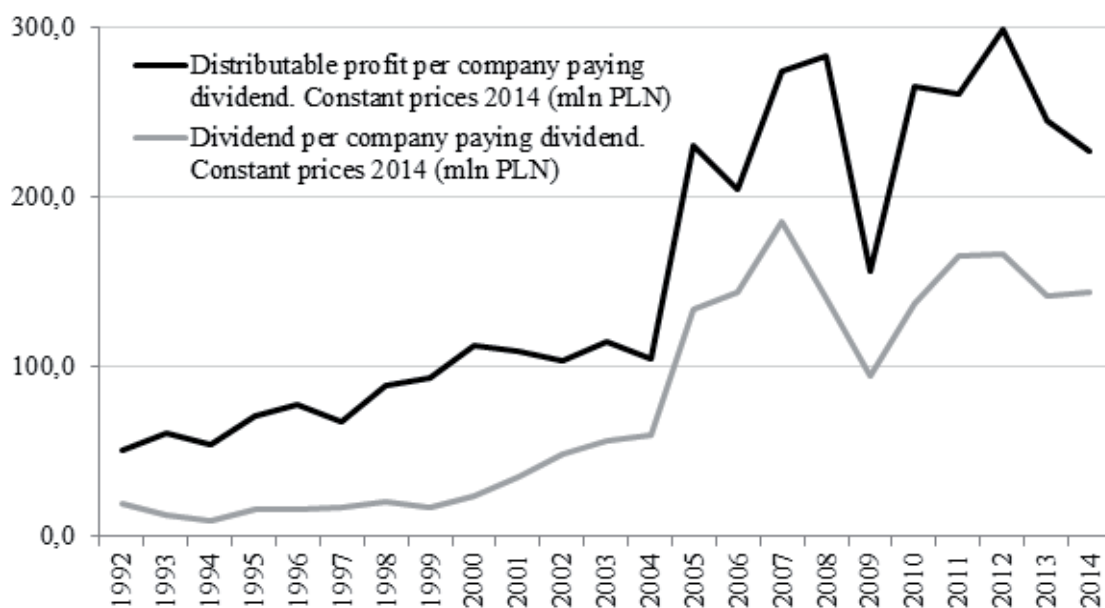
Source: Own calculations

Table 5: The highest single dividend payouts in the history of the WSE

Rank	Company	Dividend. Constant prices 2014 (mln PLN)	Dividend. Current prices 2014 (mln PLN)	Dividend to last fiscal year profit (%)	Dividend payout ratio (%)	Dividend yield ratio (%)	Sector	The year of payout
1	KGHM	5719	5668	50	50	14,9	Basic materials	2012
2	PZU	4663	4663	91,3	91,3	11,1	Insurance	2014
3	KGHM	4098,5	3394	100	100	16	Basic materials	2007
4	PGE	3452,5	3421,7	75,1	75,1	10	Energy	2012
5	KGHM	3118,1	2980	65,2	65,2	13,5	Basic materials	2011
6	PEKAO	2917,2	2517,2	125,4	82,8	7,6	Banking	2008
7	KGHM	2615,6	2336	80	80	11	Basic materials	2009
8	PEKAO	2614,2	2614,2	93,4	93,4	5,6	Banking	2014
9	PKOBP	2591,9	2375	97,7	97,7	4,4	Banking	2010
10	PKOBP	2589,7	2475	74,7	74,7	6,2	Banking	2011

11	PZU	2564,7	2564,7	99,4	99,4	6,6	Insurance	2013
12	KGHM	2475,5	2000	87,4	87,4	11,2	Basic materials	2006
13	ORANGEPL	2379,4	2053,2	244	99,2	7,8	Telecom	2008
14	ORANGEPL	2366,8	1960	185,8	97,9	6,2	Telecom	2007
15	PZU	2349,2	2245,2	63,8	63,8	8,4	Insurance	2011
16	PKOBP	2250	2250	62,6	61,7	4,6	Banking	2013
17	ORANGEPL	2243,3	2003,5	385	99,5	9,5	Telecom	2009
18	PEKAO	2202,1	2202,1	74,9	74,9	4,7	Banking	2013
19	ORANGEPL	2186,4	2003,5	59,7	59,7	9,2	Telecom	2010
20	ORANGEPL	2096,3	2003,5	195,9	99	8,7	Telecom	2011

Source: Own calculations

Increased number of companies paying dividends not only from profit for the last fiscal year

With the development of the stock exchange a phenomenon has been noted of companies more frequently paying dividends not only from their net profit of the last fiscal year, but also from their supplementary and reserve capitals. Some companies pay dividends despite incurring losses in the last year.

In the years 1992–2014 189 (12% of the total) dividend payouts coming not only from the last year's profit have been observed. 8,4% of the dividend value came from the supplementary and reserve capital. The analysis of this phenomenon over time indicates that in the years 1992–2002 such payouts consisted of only 2,2% of total amount of payouts. In the years 2003–2010 this share grew to 12,3% (with 11,9% of dividend value coming from supplementary and reserve profit). In the years 2011–2014 it grew again, to 19,1% (5,7% of dividend value coming from supplementary and reserve profit).

Initially, payouts from retained earnings were made by large companies, in which the controlling stakes were taken over by large, sectoral, foreign investors during the privatisation process. These owners could bring their dividend strategies from their "mother companies", it could be also a way of compensating for incurred expenses. Over the last years, the decisions on paying dividends from additional sources are taken more often by domestic companies, which "matured" at the stock exchange until the moment they decided that their shareholders needed to be paid larger dividends.

The phenomenon of paying dividends from sources other than net profit from the last fiscal year and paying dividends despite incurred losses appeared on the equity markets in the 20th century and becomes more evident throughout the last decades (Frankfurter & Wood, 2003, p. 32).

An explanation of the companies' behaviour, involving departing from strict binding of the payout amount with the financial result for the last fiscal year, can be found in a hypothesis formulated by Lintner as early as 1956 (p. 99). It says that the dividend policy is sticky. The belief that the market "rewards" a stable dividend yield ratio is so strong that managers are very reluctant to take decisions on increasing the yield ratio, which could be lowered in the future, but also as reluctant to lower the dividend yield ratio, which sometimes requires to pay them from the supplementary and reserve capital, and sometimes even pay dividends despite losses incurred in the last fiscal year.

Such behaviour of management can also be explained by the agency theory (Jensen & Meckling, 1976), which is based on a premise of the contradicting interests of shareholders and managers (agents) and creditors, which stems from the separation of ownership function from the control function. According to Jensen (1986) the conflict of interests grows when the company produces a significant amount of free cash. It is in the interest of shareholders that the management pays it out and not invests it in unprofitable projects or uses it for meeting their own needs.

The payouts of dividends exceeding the net profit from the last fiscal year may also be explained by a dividend theory based on the life cycle of a company. It is based on the assumption that along with the development of a company its capacity to generate money exceeds the possibility to find profitable investment ventures. The most optimal solution for such a company is to pay out its free money in dividends (Damodaran, 2007, pp. 1021–1022). Mature companies, which gathered substantial

resources in their supplementary and reserve capital pay "hearty" dividends in order to avoid the agency conflict.

In order to analyse these changes more thoroughly a logit model has been built of the fraction of companies paying dividends not only from their profit of the last fiscal year in the total number of companies paying dividends, with respect to the macroeconomic variables throughout the years 1995–2014.

Table 6: Dividends financing sources in the years 1992–2014. Domestic companies

Years	Number of payouts	The number of companies paying dividends not only from last year net profit	Fraction of companies paying dividends not only from last year net profit (%)	Dividends. Constant prices 2014 (mln PLN)	Dividends value financing sources (%)		
					last year net profit	supplementary capital created from previous years net profits	reserve capital, retained profits
1992-2002	412	9	2,2	9747	96,6	0,1	3,2
2003-2010	617	76	12,3	77055,8	88,1	6,5	5,5
2011-2014	544	104	19,1	83454,4	94,3	4,5	1,3
Total	1573	189	12	170257,1	91,6	5,1	3,3

Source: Own calculations

Table 7: Estimation results of a logit model of the fraction of companies paying dividends not only from their profit of the last fiscal year in the total number of companies paying dividends in the years 1995–2014. Weighted least squares method

Specification		Coefficient value	P value
Constant		-10,1965	<0,0001
Variables	t	1,0834	<0,0001
	t^2	-0,0299	<0,0001
	$SrPKB_{t-1,t}$	-0,3985	0,0185
	WIG_{t-1}	0,0274	0,0165
F statistic (4 ; 15)		20,96	<0,0001
First order autocorrelation coefficient			−0,6323
Durbin-Watson Statistic d (d')		3,24 (0,76)	dl= 0,90
			du= 1,83
Test for normality of residual. Null hypothesis: error is normally distributed		4,93	0,085
Test statistic: Chi-square			
Determination coefficient R^2			0,8483
Adjusted determination coefficient Adj. R^2			0,8078

Remark: HAC standard errors, bandwidth 2 (Bartlett kernel)
*Source: Own calculations with GRETL (Cottrell & Lucchetti, 2015)*

The sign of the coefficient on the arithmetic mean of the GDP growth rate in the year *t–1* and the year *t* is negative. This means that in the times of the worse economic situation companies more often choose to use additional sources for paying dividends. Moreover, companies are more eager to pay dividends not only from their profit of the last fiscal year, if the situation on the stock exchange in the last year was better. Changes in the propensity to pay dividends from the retained profits over time have an inverted U shape. The function reaches its maximum for *t* = 18,12, which happened in 2013. This means that the fraction of payouts from retained profits in the total number of payouts on the level reaching 20% is the maximum, which may be corrected only by the economic situation (a worse situation means a possibility to increase this fraction) and by the stock exchange situation (worse means lowering the fraction).

INCREASE OF DIVIDEND PAYOUTS CONCENTRATION

Over the analysed timeframe, similarly to the developed equity markets (DeAngelo, DeAngelo & Skinner, 2004, p. 433), (von Eije & Megginson, 2008, p. 354, 359–360), (Denis & Osobov, 2008, p. 75)[10], it can be observed that on the WSE the concentration of dividend payouts grows considerably. This growth may be more clearly visible if one analyses the changes in the values of the basic statistics describing the distribution of a company's dividend payouts over the subsequent years.

Figure 9: Changes of lower quartile, median and upper quartile of dividends payouts in the years 1992–2014. Constant prices 2014 (mln PLN)
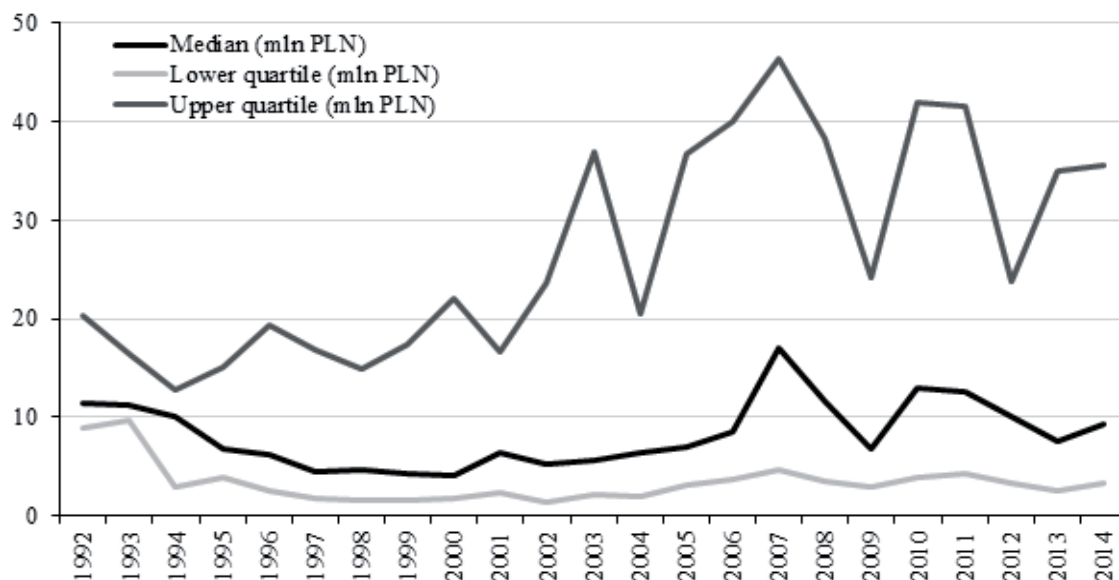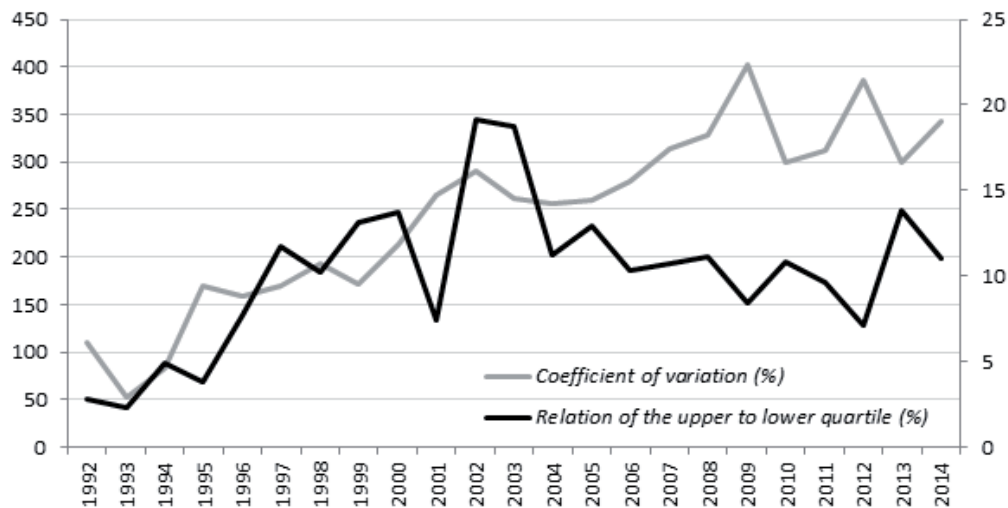

Source: Own calculations

The increase of the value of the upper quartile with the drop of the value in the lower quartile and insignificant changes of the median means that a quarter of the biggest payers pay out increasingly bigger dividends. This phenomenon is also supported by the increase of the coefficients of kurtosis and skewness; a small number of companies pay out bigger and bigger amounts. As a consequence, the coefficient of variation rises, as well as the relations of the upper quartile value to the lower quartile value.

Figure 10: Changes of the coefficient of variation and the relation of the upper to lower quartile of dividends payouts in the years 1992–2014 (%)
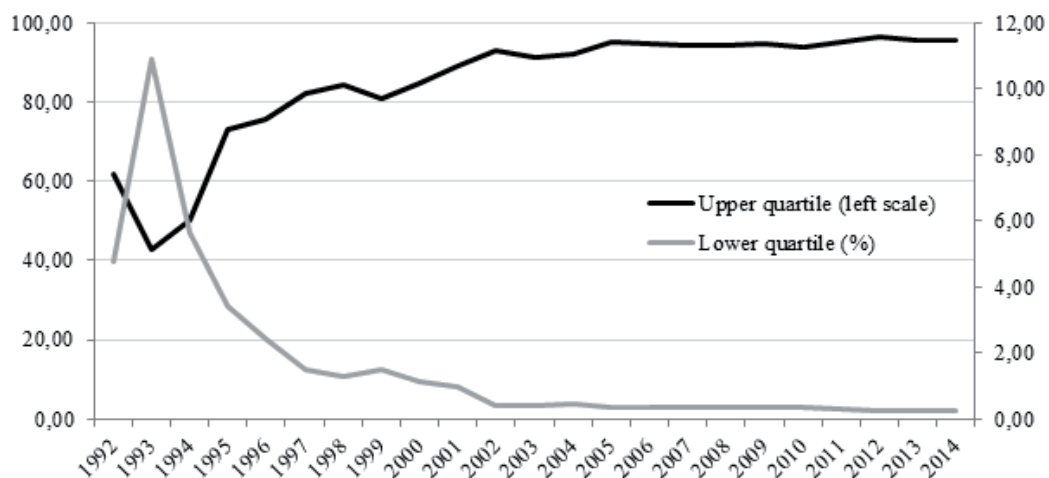

Source: Own calculations

The increase in the payout concentration is especially visible since 1994[11]. While in this year companies within the lower quartile paid out 5,63% of the total dividend amount, in 2013 it was only 0,24% and in 2014 0,27%. On the other hand, companies making up the upper quartile paid out 50,18% of the total dividend amount in 1994. In 2012 it was 96,54% and in 2014 95,56%.

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11   In the years 1992-1993 the regularities of payment distribution have been distorted by the very small number of companies listed and paying dividends.

Figure 11: Fraction of the value of dividends paid by the companies from lower and upper quartiles in the total payouts (%)

Source: Own calculations

Table 8: The biggest payers in history of the WSE

Rank.	Company	Sector	Number of payouts	Total value of company payouts. Constant prices 2014 (mln PLN)	% in total pay-outs on the WSE	Propensity (%)
1	KGHM	Basic materials	13	24615	14,5	76,5
2	PEKAO	Banking	12	19240,3	11,3	75
3	ORANGEPL	Telecom	14	17469,1	10,3	87,5
4	PKOBP	Banking	10	15777,5	9,3	100
5	PZU	Insurance	5	12559,3	7,4	100
6	PGE	Energy	5	9823,8	5,8	100
7	HANDLOWY	Banking	16	8933,1	5,2	94,1
8	BZWBK	Banking	12	4920,1	2,9	92,3
9	ZYWIEC	Food	22	4753	2,8	95,7
10	BANKBPH	Banking	12	4255,3	2,5	60
11	PKNORLEN	Oil &Gas	9	3757,6	2,2	60
12	PGNIG	Oil &Gas	8	3304,4	1,9	88,9
13	INGBSK	Banking	16	2818,9	1,7	80
14	SWIECIE	Wood & Paper	10	2330	1,4	66,7
15	MBANK	Banking	12	2232,9	1,3	54,5
Total "First 15"			176	136790,4	80,3	78,9

Source: Own calculations

The biggest payer ever has been KGHM. Throughout 17 years of being quoted on the stock exchange, the "copper company" made 13 payouts of a total value of 24615 million PLN in 2014 prices (14,5% of the amount of dividends paid by domestic companies on the WSE). The second place is taken by the PEKAO bank, which during its 16 years of being listed on the stock exchange made 12 payouts of the total amount of 19240,3 million PLN (11,3% of the amount of dividends paid by domestic companies on the WSE). During the analysed timeframe, 15 companies (4,2% of the total number of these which have paid dividends at least once) paid out 80,3% of the total value of dividend. Payments made by these companies (176) consisted of 12,2% of the total amount of payouts made by domestic companies.

The concentration of the dividend payout on the WSE is comparable to the concentration in the developed equity markets. The research of deAngelo et al. shows that at the New York stock exchanges 25 of the biggest companies make 50% of the payments in the industry.

## INCREASE OF THE DIVIDEND PAYOUT RATIO AND THE DIVIDEND YIELD RATIO

Due to the fact that more and more companies pay dividends not only from the net profit for the last fiscal year, the most commonly used definition of a dividend payout ratio as a percentage of the quotient of dividend per one share and the net profit of the last fiscal year per one share ceases to be a correct measure of assessing the dividend policy of a company[12]. This is why the author proposes a correction of the definition of dividend payout ratio. It takes into account all the sources of the dividend payout. For this purpose, a concept of distributable profit has been introduced. If the dividend is paid out only from the net profit of the last fiscal year, the distributable profit equals to this net profit. If a company, apart from (or instead of) the net profit uses other sources of financing for dividend, the distributable profit shall be the sum of the whole net profit for the last fiscal year and the supplementary capital or (and) reserve capital, which

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12   Sometimes the value of a rate defined in this way exceeds 100%. In a case of losses in the last fiscal year it is negative.

have been allocated for dividends. If a company recorded losses in the last fiscal year, the distributable profit equals other sources of financing dividends. Dividend payout ratio is a percentage of the quotient of dividend and the distributable profit. The dividend payout ratio defined in such a way takes values from 0 to 100%. It is 100% if the company pays out its whole net profit for the last fiscal year[13] or pays out a dividend despite losses. The dividend payout ratio calculated in the proposed way is smaller and at most equal to the relation of dividend to the net profit for the last fiscal year (Kowerski, 2014).

Figure 12: Changes of relations of the dividend to net profit for last fiscal year, dividend payout ratios, dividend yield ratios in the years 1993–2014 (%)
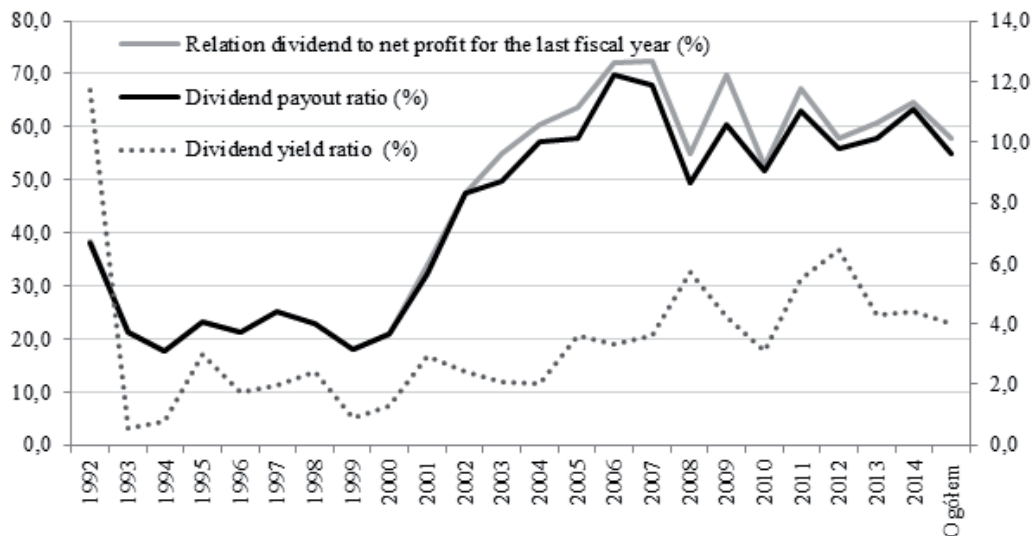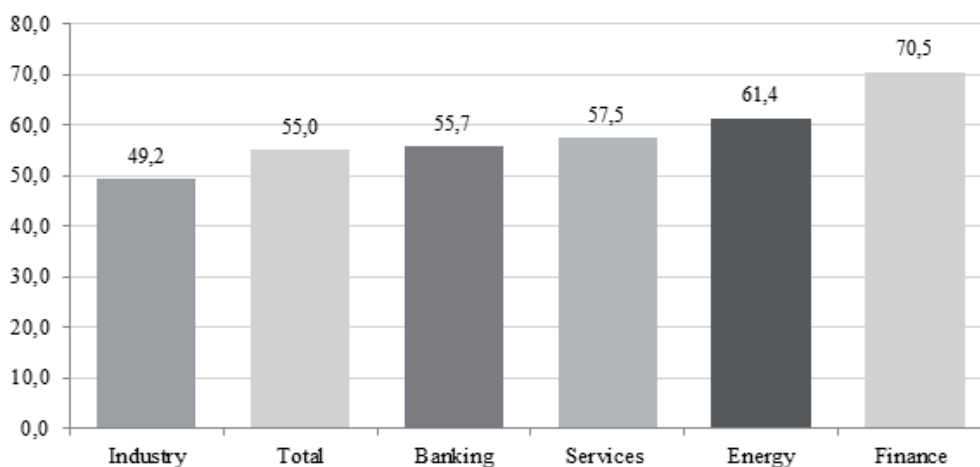

Notice:

1. The chart does not include year 1992, when the dividend rate was 16,7% but its very high value stemmed from the very small number of companies listed at the stock exchange (7).

2. The rates have been calculated only based on companies paying dividends.

Source: Own calculations

Figure 13: Dividend payout ratios by mega-sectors in the years 1992–2014

Source: Own calculations

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13   No matter if the payout is complemented with the supplementary or reserve capital or not.

The article is an effect of the project –„Financialization- impact on the economy and society"- international conference, conducted by the University of Information Technology and Management in Rzeszów with Narodowy Bank Polski under the scope of economic education programme

During the analysed timeframe, increase in the dividend payout ratio has been observed, although its pace was varied. An especially fast increase happened in the years 1999–2006, when the dividend payout ratio reached 70%. Since 2007 the ratio has slightly decreased, but it has always exceeded 50%. Dividend yield ratios have also increased, but were subject to much bigger fluctuations (the coefficient of variation in the years 1992–2014 equals 70,9%) than the dividend payout ratio 42,5%).

In the whole analysed timeframe, the dividend payout ratio was 55%. Sectoral differences are not very big. Financial companies have the biggest ratio (70%) because of PZU having paid out almost all of its profits in the years 2013–2014.

The model of the dividend payout ratio has been based on data from the years 1995–2014. The sign of coefficient on the variable describing the GDP growth rate for the year preceding the dividend decision is negative. This means that the dividend payout ratios were higher during a bad economic situation (for which companies tried to compensate their shareholders). At the same time, the increase in the dividend payout ratio occurred together with the increase in number of the companies paying dividends in the total amount of domestic companies listed on the WSE and with the improvement in the situation at the equity market in the year preceding the dividend payout decision.

The changes in the dividend payout ratio over time have the inverted U shape. The function reaches its maximum for $t = 17,56$, which happened in 2012. This means that the dividend payout ratio on the level reaching 56% is the maximum, which may be corrected only by the economic situation (a worse situation means a possibility of increase) and by the stock exchange situation (worse means a decrease).

Table 9: Estimation results of the logit model of the dividend payout ratio in the years 1995–2014. Weighted least squares method

Specification		Coefficient value	P value
Constant		-4,398	0,0002
Variables	t	0,4707	0,0003
	t^2	-0,0134	0,0019
	$PKB_{t-1,t}$	-0,0752	0,0221
	WIG_{t-1}	0,0025	0,2593
	$PROP_t$	0,0348	0,0039
F statistic (5 ; 14)		13,21	0,0001
First order autocorrelation coefficient		0,2882	
Durbin-Watson Statistic (d (d')		1,41	dl=0,79
			du=1,99
Test for normality of residual. Null hypothesis: error is normally distributed		2,92	0,2323
Test statistic: Chi-square			
Determination coefficient R2			0,8251
Adjusted determination coefficient Adj. R2			0,7626

Remark: HAC standard errors, bandwidth 2 (Bartlett kernel)
Source: Own calculations with GRETL (Cottrell & Lucchetti, 2015)

Conclusion

Although in the years 1992–2014 the value of dividends paid on the WSE increased very dynamically, still, their level and – especially –propensity to be paid is lower than on developed financial markets.

This is why the increase of dividend payouts has to be considered a sign of a quite dynamic creation of the financial market from the beginning and not as a sign of financialization of the economy. But it is worth noting that most of the phenomena connected with the dividend policy of the companies quoted on the WSE show similar tendencies to those of the developed equity markets. This may be a symptom of the financialization of the Polish economy in the future, even if the recently introduced minerals resource rent tax and the bank tax will cause the temporary decrease of dividend payments.

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