

BŁAŻEJ SOCHA

ORCID ID: <https://orcid.org/0000-0002-2422-6851>  
blazej.socha@uni.lodz.pl

DARIUSZ URBAN

ORCID ID: <https://orcid.org/0000-0003-0500-1830>  
dariusz.urban@uni.lodz.pl

*The Financialization of Companies Listed on the Warsaw Stock  
Exchange – the Sector Analysis*

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Finansyzacja polskich spółek giełdowych w ujęciu sektorowym

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## **Introduction**

The financialization of the economy is one of those economic phenomena that have become more and more popular among researchers in recent years. This applies both to those studies conducted internationally and those conducted on the Polish land. While in the former case it is legitimate to claim that the conducted analyses are characterized in many cases by multithreading and a high degree of detail, in the latter case of some local works in the field of financialization, it seems reasonable to say that they predominately fill the gap in the basic knowledge about this phenomenon. Indirect proof of that statement is the fact that on the basis of Polish literature, there is still

insufficient scientific exploration of the phenomenon of financialization as evidenced by the lack of terminological consensus. At the same time, terms such as “financing”, “financialization”, “finansierisation” are used simultaneously [Adamska, 2017, p. 45]. In addition, Polish authors relatively rarely undertake empirical research on the issue of financialization, which is represented by a small group of people including Remlein [2015], Lisek [2016], Krasucka [2016], or Szczepankowski [2017a; 2017b]. Not so long ago, it was pointed out in the Polish literature that the phenomenon of corporate financialization is an almost unnoticed issue in contemporary theoretical and empirical studies [Szczepankowski, 2015, p. 497]. Meanwhile, the scale of this phenomenon in many developed economies around the world seems to raise the question of to what extent financialization affects enterprises from developing countries.

The aim of this article is to show differences in the degree of financialization of groups of companies listed on the Warsaw Stock Exchange, divided according to their sectoral affiliation and the answer to the question regarding the scale of diversity and trends over the years. The choice of the Warsaw Stock Exchange results from the fact that to the best of the authors’ knowledge, no empirical work has been devoted to this issue. This paper on the methodology of indicators measuring the phenomenon of enterprise finances refers to the approach proposed by Szczepankowski [2017a] and also uses statistical tests in the empirical section.

The structure of the article is a derivative of the research goal. The first section shows what financialization is and what its manifestations are in the activities of enterprises. The second section describes the research methodology and the research sample. The third section summarizes the empirical results and offers a synthetic discussion of them. The article ends with a summary.

## **1. Financing in the context of business operations**

Financing reflects the growing asymmetry between production and exchange processes, in particular with regard to the financial component of the latter process over the last three decades. This asymmetry was revealed along with the gradual changes in the financial behaviour of non-financial enterprises, banks and households. An eloquent aspect of this transformation process has been the generation of profits through financial transactions, also in a way that is not related to the creation of added value [Lapavitsas, 2013, p.4]. In the literature, financialization refers to the growing importance of financial activity, which is a source of profits in the economy (and also the way capital accumulates), the rule of the dominance of the concept of managing shareholder value as the purpose of corporate governance, along with increasing political power and economic rentier class and the explosion of commercial activities related to the spread of new classes of financial instruments. These various definitions are not necessarily mutually exclusive [Krippner, 2011, pp. 27–28; Van der Zwan, 2014, p. 99; Styhre, 2015, pp. 4–15].

According to Ratajczak, in the case of enterprises, financialization leads to fundamental changes in the sphere of management and ownership, especially in large enterprises. Firstly, the role of institutional owners in the financial sphere is increasing, seeking profit opportunities in the short term. Secondly, emphasis is shifted in discussion and management from the perspective of stakeholders to the perspective of shareholders. Thirdly, excessive pressure in the economic and financial analysis of the company is put on the whole group of indicators referring to short-term profitability and not long-term stability of a given enterprise development [Ratajczak, 2014, p. 261].

In empirical research, the subject of which are the enterprises from economies of developing countries, it is pointed out that the various aspects of financialization are related to the investment activity of non-financial enterprises. The following points are being proven: shifting in the investment portfolio of these entities towards financial assets, replacing or even pushing out investments in kind by financial investments, increasing the level of corporate debt and the scale of buy-back of own shares and increasing the share of financial profits and payments from non-financial enterprises to financial markets. The indicated changes in the behaviour of enterprises are accompanied by a decline in capital accumulation, despite its growing profitability, which leads to a peculiar puzzle regarding the relationship between investments and profits in which a smaller portion of profits is reinvested in the company's material capital. This situation may reflect the ongoing reorientation of shareholders, in which non-financial enterprises increasingly focus on financial activity ratios at the expense of the company's growth and investment activities [Tori, Onaran, 2018, pp. 1–24; Davis, 2017a, pp. 1333–1334; Davis, 2017b, pp. 2–3].

These results lead to the question of whether and to what extent trends observed in developed markets may be replicated by companies from developing countries, or to what extent financialization is evident in the activities of non-financial enterprises from emerging economies. The aim of the empirical study is to show differences in the degree of financialization of groups of companies listed on the Warsaw Stock Exchange, divided according to their sectoral affiliation and the answer to the question of the scale of diversity and trends over the years.

## **2. Test sample and test methodology**

The public companies included in the WIG index as of March 30, 2018, constituted the research sample. Companies from the financial industry were excluded from the study, due to the purpose of the study. In the case of these entities, financial transactions are often the core of their operating activity. The study excludes entities that reported negative equity in individual balance sheet years and those for which the Thomson Reuters Eikon database did not contain data. For the enterprises included in the study, the following indicators were calculated based on the methodology

proposed by Szczepankowski [2017a, pp. 287–302] for the assessment of the degree of financialization of enterprises in investment activity and financial activity for 2011–2017. The data come from the financial statements of companies published in the Eikon database (data standardized by Thomson Reuters). Table 1 shows the information capacity of indicators and the method of estimation.

Table 1. Indicators of the degree of corporate finances

Area	Indicator	Standardized quantities used for estimation
Investment area (INV)	INV1	$[\text{Long-term Investments} - \text{Affiliate Companies} + \text{Long-term Investments} - \text{Other} + \text{Note Receivable} - \text{Long-term} + \text{Other Long-term Assets}] / \text{Fixed Assets}$
	INV2	$[\text{Total Current Assets} - \text{Total Inventory} - \text{Accounts Receivable} - \text{Trade Net} - \text{Prepaid Expenses}] / \text{Total Current Assets}$
	INV3	$[\text{Interest Income (Non-Operating)} + \text{Investment Income (Non-Operating)} - \text{Foreign Currency Gains}] / \text{Total Revenue}$
	INV4	$[\text{Purchase of Investments} + \text{Acquisition of Business}] / [\text{Purchase of Investments} + \text{Acquisition of Business} + \text{Capital Expenditures}]$
	INV5	$[\text{Sale of Business} + \text{Sale/Maturity of Investment}] / [\text{Sale of Business} + \text{Sale/Maturity of Investment} + \text{Sale of Fixed Assets}]$
Financial area (FIN)	FIN1	$[\text{Long-Term Debt} + \text{Other Long-Term Liabilities} + \text{Notes Payable/Short-Term Debt} + \text{Other Current Liabilities}] / [\text{Liabilities} + \text{Equity}]$
	FIN2	$[\text{Long-Term Debt} + \text{Notes Payable/Short-Term Debt}] / \text{Liabilities}$
	FIN3	$[\text{Interest Expense (Non-Operating)} + \text{Investment Expense (Non-Operating)}] / \text{Total Expense}$
	FIN4	$[\text{Debt Reduction} + \text{Cash Interest}] / \text{Financing Cash Flow Out}$
	FIN5	$\text{Debt Issued} / \text{Financing Cash Flow In}$

Source: Authors' own study based on Szczepankowski [2017a, pp. 287–302].

After calculating partial indices, the ratios characterizing the degree of financialization in the investment area (INV) and financial area (FIN) were calculated as the arithmetic mean of partial indicators. To verify statistically significant differences in the degree of financing of individual industries, the Kruskal–Wallis test was used, which is a non-parametric equivalent of the one-way analysis of ANOVA variance. The NAICS classification was used to classify enterprises. When the number of companies operating in a given sector was less than 5, they were classified in the remaining categories.

### 3. Results

The values of synthetic financialization ratios range from 0 to 1, where a higher value indicates a higher degree of financialization. In the investment area (Table 2), in all analysed years, the highest average values were achieved by the ratios of share of short-term financial assets in current assets (INV2) and investment inflows from financial assets in investment inflows (INV5). The lowest values were characterized

by the index illustrating the share of financial revenues in the sum of financial revenues and sales revenues (INV3). A relatively low share of long-term financial assets in non-current assets (INV1) and investment outflows from financial assets in total investment outflows can also be noticed (INV4).

Table 2. Basic statistical measures of financialization in the area of investment activity in 2011–2017

Year/Indicator	INV1	INV2	INV3	INV4	INV5	INV	
2011	N	320	320	320	320	320	
	Average	0.1163	0.3385	0.0266	0.2083	0.2857	0.1951
	Median	0.0288	0.2626	0.0036	0.0001	0.0000	0.1481
2012	N	379	379	379	379	379	
	Average	0.1419	0.3493	0.0307	0.1832	0.2436	0.1897
	Median	0.0328	0.2813	0.0042	0.0000	0.0000	0.1362
2013	N	402	402	402	402	402	
	Average	0.1397	0.3690	0.0240	0.1877	0.2353	0.1912
	Median	0.0352	0.2916	0.0027	0.0000	0.0000	0.1374
2014	N	409	409	409	409	409	
	Average	0.1434	0.3723	0.0220	0.1971	0.2606	0.1991
	Median	0.0334	0.2895	0.0026	0.0003	0.0000	0.1605
2015	N	412	412	412	412	412	
	Average	0.1425	0.3748	0.0196	0.1813	0.2175	0.1871
	Median	0.0336	0.3131	0.0018	0.0000	0.0000	0.1447
2016	N	424	424	424	424	424	
	Average	0.1467	0.3896	0.0231	0.1617	0.2099	0.1862
	Median	0.0373	0.3112	0.0015	0.0000	0.0000	0.1384
2017	N	265	265	265	265	265	
	Average	0.1114	0.4208	0.0210	0.2016	0.2567	0.2023
	Median	0.0250	0.3599	0.0012	0.0000	0.0000	0.1489

Source: Authors' own study.

The general financialization degree in the investment area (INV) increased over the analysed period, but the increase was not significant. It is worth mentioning that the median value of the indices is lower than the arithmetic average. This suggests that the financialization rate of the majority of companies included in the sample is lower than results from the arithmetic mean and the distribution of the examined features is right-sided asymmetric. The trend is mostly marked in investment income and expenditure indicators, which were zero in more than half of the enterprises. These results may indicate that enterprises maintain a relatively high level of cash on hand and in bank accounts and short-term securities. The relatively high average value of the INV5 index and the median at level 0 indicates that the proceeds from the financial part of the investment activity are characteristic only for a small part of the surveyed enterprises. In turn, the majority of the surveyed companies did not conduct this type of investment activity.

In terms of financial area of financialization (Table 3), the highest average values were characterized by the ratios of the share of loans and borrowings in total

liabilities (FIN2) and financial inflows from debt in financial inflows (FIN5). On average, the lowest level of financialization can be observed in the relationship of financial costs to total costs.

Table 3. Basic statistical measures of financialization in the area of financial activity in 2011–2017

Year/Indicator	FIN1	FIN2	FIN3	FIN4	FIN5	FIN	
2011	N	320	320	320	320	320	
	Average	0.2459	0.6480	0.0229	0.4528	0.5862	0.3912
	Median	0.2319	0.7804	0.0098	0.5000	1.0000	0.4131
2012	N	379	379	379	379	379	
	Average	0.2590	0.6259	0.0338	0.4248	0.6105	0.3908
	Median	0.2427	0.7696	0.0108	0.4925	1.0000	0.4241
2013	N	402	402	402	402	402	
	Average	0.2659	0.6276	0.0291	0.4026	0.6118	0.3874
	Median	0.2481	0.7467	0.0097	0.4724	1.0000	0.4197
2014	N	409	409	409	409	409	
	Average	0.2695	0.6229	0.0330	0.3961	0.6014	0.3846
	Median	0.2520	0.7509	0.0097	0.4366	1.0000	0.4146
2015	N	412	412	412	412	412	
	Average	0.2873	0.6203	0.0309	0.3678	0.6144	0.3841
	Median	0.2629	0.7611	0.0077	0.3595	1.0000	0.4294
2016	N	424	424	424	424	424	
	Average	0.2828	0.6322	0.0282	0.3750	0.6223	0.3881
	Median	0.2606	0.7568	0.0074	0.4382	1.0000	0.4149
2017	N	265	265	265	265	265	
	Average	0.2730	0.5173	0.0433	0.3032	0.5077	0.3289
	Median	0.2504	0.6408	0.0074	0.2124	0.8449	0.3533

Source: Authors' own study.

The median value for the FIN5 index suggests that more than half of the entities in six of seven analysed periods have received financial inflows only from taking loans, borrowings or issuing debt securities. The general financialization degree in the financial area (FIN) in the analysed period is stable, and its values are lower than the ratio in the investment area. The low share of total debt in liabilities was one of the reasons for the relatively low share of financial costs in total costs. The results and their development in the examined period prove that enterprises treat financial activity in a subordinate manner to their operating activities. In the next step of the analysis, the differences in the level of financialization of enterprises from particular sectors were verified. Differences in the investment and financial area of financialization (Table 4) were demonstrated in all analysed periods for the indices INV1, INV2, INV3 and general index (INV). In the case of INV3 and INV4 indices, statistically significant differences were proven only in one of the seven analysed periods.

Table 4. Chi<sup>2</sup> values of the Kruskal–Wallis test verifying the differences in the degree of financialization in the area of investment activity in each industries in 2011–2017

Year/Indicator	INV1	INV2	INV3	INV4	INV5	INV
2011	18.883*	94.478**	36.208**	8.586	8.039	35.579**
2012	22.905**	58.724**	24.605**	14.075	21.137**	43.872**
2013	40.797**	77.489**	22.100**	11.034	13.328	67.299**
2014	37.031**	86.910**	26.968**	7.995	14.209	57.163**
2015	40.054**	71.790**	26.725**	8.061	1.362	50.394**
2016	38.833**	85.697**	20.172**	10.347	11.458	54.079**
2017	39.056**	38.624**	18.964*	17.814*	12.812	27.555**

Notes: \* – statistical significance at the level of 0.05; \*\* – statistical significance at the level of 0.01

Source: Authors' own study.

Statistically significant differences in the financial area of financialization (Table 5) in all analysed years were demonstrated for the FIN2 ratio (share of loans and borrowings in total liabilities) and the general indicator (FIN). It can be assumed that significant differences (six out of seven years) also occur in relationship to the indicator illustrating financial inflows from foreign capital in total financial inflows (FIN5). In the case of other indicators, based on the adopted research horizon, there are no grounds for finding significant differences in the values of indices achieved by enterprises from various sectors.

Table 5. Chi<sup>2</sup> values of the Kruskal–Wallis test verifying the differences in the degree of financialization in the area of financial activity in particular industries in 2011–2017

Year/Indicator	FIN1	FIN2	FIN3	FIN4	FIN5	FIN
2011	17.114*	49.370**	19.747*	19.645*	31.293**	48.275**
2012	22.655**	38.986**	14.359	16.206*	28.331**	37.919**
2013	16.683*	49.840**	14.903	11.564	30.537**	42.286**
2014	13.606	40.245**	19.809*	11.650	15.368*	29.338**
2015	11.154	41.722**	18.578*	8.396	15.200	23.650**
2016	24.294**	37.993**	34.732**	8.656	16.635*	25.833**
2017	10.684	30.034**	14.926	9.357	18.270*	30.138**

Notes: \* – statistical significance at the level of 0.05; \*\* – statistical significance at the level of 0.01

Source: Authors' own study.

Regarding the statistically significant differences in the level of sector finances to the average of the Kruskal–Wallis test, it can be clearly seen that in the area of investment activity, the lowest degree of financialization occurs in the manufacturing (2011 and 2014–2017) and wholesale (2012–2013) sectors. The highest values are characteristic for the public utilities (2011–2012), administration, business support and waste management (2013), construction (2015) and professional activity and technology (2014 and 2016–2017) sectors. Retail, information and communication sectors as well as other sectors in the scope of financing the investment activity were placed in the middle of the rate.

Consistent results over the seven years analysed can be seen in the area of financial activity. In this area, the highest degree of financialization can be seen in the sectors of administration, business support and waste management (2012–2017) and manufacturing sectors (2011) and the lowest in the professional and technical (2011 and 2013–2017) and information and communication (2012) sectors.

The results suggest that the degree of financialization of Polish public companies is at a moderate level and do not dominate the operating activity. In spite of this, the analysis identified significant differences in the degree of financialization of each of the sectors. The discrepancy between the average values and medians of the analysed indicators suggests necessity and at the same time justify conducting further sectoral analyses.

### Summary

The aim of the article was to show differences in the degree of financialization of groups of companies listed on the Warsaw Stock Exchange, divided according their sectoral affiliation and the answer to the question regarding the scale of diversity and trends over the years. The results allow stating that in the group of Polish non-financial listed companies in the years 2011–2017, there were differences in the degree of their financialization, measured with the use of synthetic measures related to financial and investment areas of companies. Taking into account the average level of indicators, in the analysed period, the level of financialization of Polish listed companies remained at a relatively low level. Due to the fact that the results are, to the best of the authors' knowledge, the first of this type, they should be approached with the appropriate dose of scientific scepticism. The research in this article is of contributory nature and is the starting point for further in-depth analyses. One of the potential areas for further research may be the creation of synthetic measures in which particular variables would not have the same share. This seems to be justified by the results in the study of the differences between cross-sectoral individual measures of financialization. In addition, the classification based on NAICS used in the article and the financial information about listed companies obtained from the Thomson Reuters database (standardized data) create the opportunity to conduct further work to assess the differences in the level of finances between listed companies from different economies and then to attempt to demonstrate whether macroeconomic features, including the characteristics of the domestic capital market, are determining factors explaining the financial performance of companies listed on a given stock exchange.

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## Finansyzacja polskich spółek giełdowych w ujęciu sektorowym

W artykule poruszona jest problematyka finansyzacji przedsiębiorstw. Celem artykułu była odpowiedź na pytanie dotyczące różnic w poziomie finansyzacji grup przedsiębiorstw wyodrębnionych z uwagi na kryterium przynależności sektorowej. Analiza dotyczyła niefinansowych spółek giełdowych notowanych na GPW w Warszawie i obejmowała lata 2011–2017. W pracy wykorzystano zarówno syntetyczne mierniki finansyzacji jak i mierniki mierzące wybrane aspekty działalności finansowej i inwestycyjnej przedsiębiorstw. Uzyskane wyniki dowodzą występowania różnic sektorowych w poziomie finansyzacji badanych spółek oraz relatywnie niewielkiej roli działalności finansowej przedsiębiorstw niefinansowych w relacji do działalności operacyjnej.

### **The Financialization of Companies Listed on the Warsaw Stock Exchange – the Sector Analysis**

This paper deals with the issue of financialization of companies. The main goal of this article was to answer the question about differences in the levels of financialization between groups of companies from different sectors. The research sample consisted of Polish companies listed on the Warsaw Stock Exchange and covered the period 2011–2017. The authors used synthetic indicators of company financialization reflecting their financial and investment performance. The results prove the existence of sectoral differences in the level of finances of the surveyed companies and the relatively small role of financial activity of non-financial enterprises in relationship to the operating activity.