Anastasiia Tsiluiko

An Inquiry Into Associative Links Between Labor Unionization, Salary Gap and Productivity

Tutor: Dmytro Osiichuk, PhD

Anastasiia Tsiluiko – is a student of Kozminski University on the Finance and Accounting track. Started her job career as worker in the 'Citi', one of the greatest investment bank and financial services corporation. Her research topic interests is closely related to the experience got. As an employee of a global corporation, the question about productivity of global corporations appeared. The satisfaction of the workers needs by the employer created the interest to investigate trade unionization within the most capitalized companies.

Abstract

The present study inquires into associative links between Labor Unionization, Salary Gap and Productivity. It was used an unbalanced dataset of the most capitalized companies for the research to be made. One of the main purpose of trade unions creation is to lower the salary gap within the business entity. As well as provide security and stability for workers. We explained this aspect not only through empirical analysis but also relying on the review of psychological literature about the needs of workers and people in general. Our empirical analysis demonstrates the higher the trade union representation, the lower the salary gap. Such findings may be explained by 'tournament theory'. As it seems to be suitable to explain the phenomena for steep-hierarchy firms, which constitute the research sample. Finally, the employee productivity seems to be negatively associated with the trade union representation. A further inquiry into this problem seems warranted.

Keywords: trade unionization; labor unionization; trade union representation; productivity; salary gap; workers' needs.

Zapytanie o powiązania asocjacyjne między związkiem zawodowym, luką płacową a produktywnością

Niniejsze badanie dotyczy powiązań asocjacyjnych między związkiem zawodowym, luką płacową a produktywnością. Została wykorzystana przez niezrównoważoną bazę danych najbardziej skapitalizowanych firm do przeprowadzenia badań. Jednym z głównych celów tworzenia związków zawodowych jest zmniejszenie luki płacowej w przedsiębiorstwie. Oprócz zapewnienia bezpieczeństwa i stabilności pracownikom. Wyjaśniliśmy ten aspekt nie tylko poprzez analizę empiryczną, ale także opierając się na przeglądzie literatury psychologicznej na temat potrzeb pracowników i ludzi w ogóle. Nasza analiza empiryczna pokazuje, że im wyższa reprezentacja związków zawodowych, tym mniejsza różnica w wynagrodzeniach. Takie ustalenia można wyjaśnić „teorią turnieju". Właściwe wydaje się wyjaśnienie zjawiska dla firm o dużej hierarchii, które stanowią próbę badawczą. Wreszcie, wydajność pracowników wydaje się negatywnie związana z reprezentacją związków zawodowych. Dalsze dochodzenie w sprawie tego problemu wydaje się uzasadnione.

Słowa kluczowe: związek zawodowy; reprezentacja związków zawodowych; produktywność; luka płacowa; potrzeby pracowników

Introduction

Productivity is determined as a measure of how much company can produce (generate revenue) with the given assets. As noted by Fatula (2018) we measured productivity as relationship value of produced products (Total Revenue) to Number of employees (Labor Expenses, defined as wages and bonuses). Productivity determines the possible growth of the economy (Fatula, 2018).

In our paper we would like to investigate which factors may have impact on the productivity. In particular, the paper might investigate whether such drivers as unionization (trade union representation), salary gap and other factors (pointed out below) may have influence on the productivity. By A.Noe, R.Hollenbeck, Gerhart and M.Wright (2008) was stated that there are at least three reasons why unions can decrease productivity:

- Higher salaries are demanded by unionized labor, which may increase the Labor Expenses carried by the firm, and as a result decrease the level of productivity.
- Efficiency is reduced if for the same amount of work a firm employs a higher number of workers. Higher slack may be demanded by unions.
- Possible strikes that could be organized by trade unions has always negative effect on the revenue and production.

So, in order to investigate this topic deeper, we created database consisting of 1915 highest- capitalization companies observed over 10 financial years. Of course, lack of disclosed information decreased the number of observations . But still it is significant to make any conclusion based on it. It means we are going to investigate how unionization and salary gap influence the

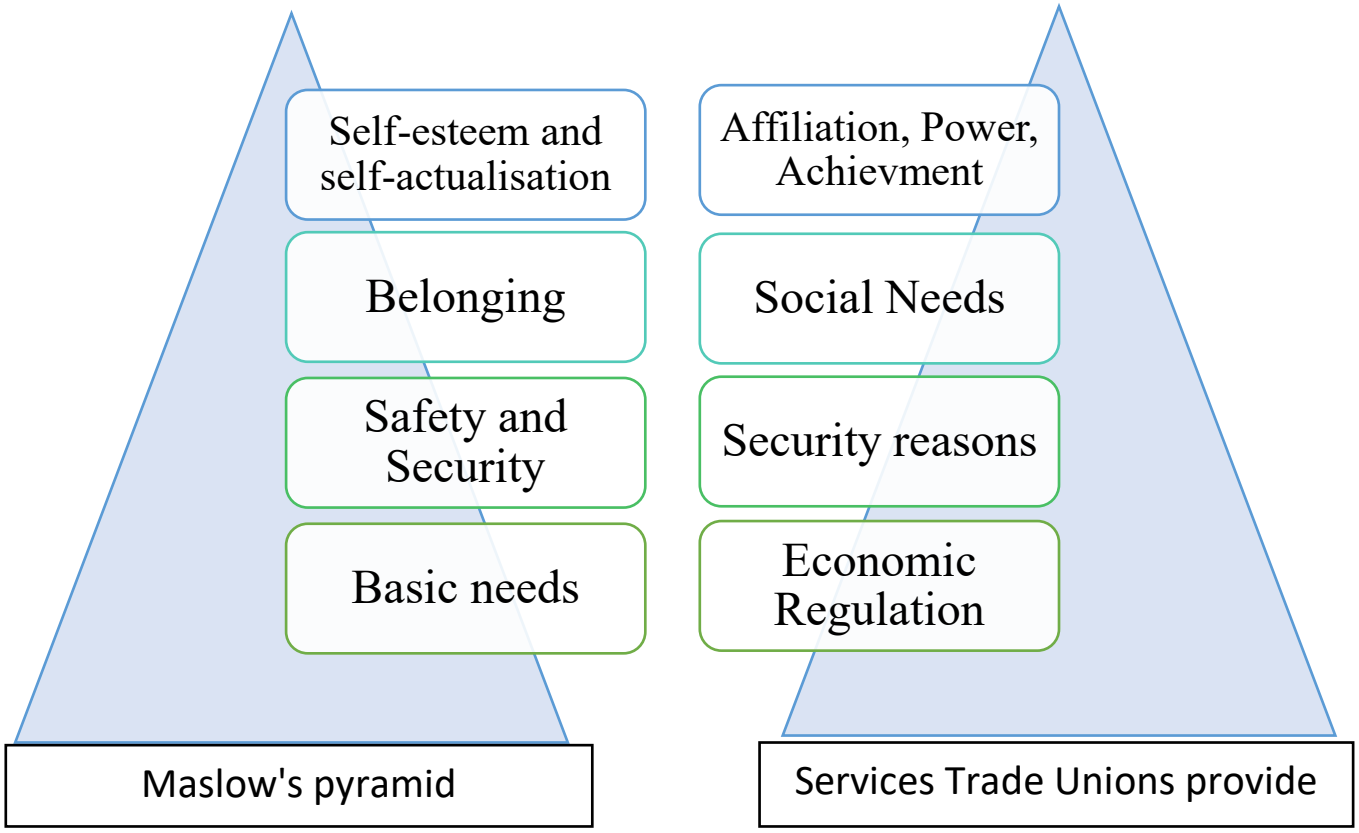
productivity in such companies. Companies' response to such determinants as unionization, salary gap and other factors are different (sometimes opposite) based on the size of firms observed. (de Pinto, Lingens, 2019).

The article is divided in three main parts. In the overview the paper overviews why firms may need unions, why it is important for them and what the trade unions services' provided. Our first Hypothesis is that trade unionization is negatively associated with the salary gap. At the same time, trade union representation may be negatively associated with the productivity, because higher wages may increase the labor expenses. The higher the labor expenses the lower the ratio. In order to make the labor market equal the government in high developed countries make law that in the future would decrease the labor union representation (de Pinto, Lingens, 2019). Second assumption is whether such intention of the governments are already find a response in the high productivity firms. With the high productivity the trade union representation decreases.

Overview

First and foremost we would like to highlight the nature of unions and to point out the reason of the employee's willingness have it within their company. We are going to reveal their expectations while organizing it. Moreover, we would like to indicate the reason of decreasing the unionization in the most developed countries through the last decades

As it was pointed out by R.Crawshaw, Budhar and Davis (2014) the theory of the psychological contract by Argyris, Levinson and Schein in 1960 suggests that the expectations that employer can not satisfy can be satisfied by trade unions. We can also refer not only to psychological contract theory but also to Maslow's pyramid of human basic needs (Maslow's Hierarchy of needs). The below graph shows us how the trade unions' services provided can be linked to Maslow's Hierarchy of needs. We can clearly observe that belonging to the union trade within job satisfies the workers' needs. So, even if the psychological contract of the employee is not met by managers and organization in order to create opportunity for fulfillment the human needs, workers were willing to organize unions.



Source: own elaboration. Services trade union provide based on Zulkiflee Daud and Shahrom Tumin (2013); Maslow's pyramid based on Jack Ori (2019).

It is a known fact that the main purpose of the majority of firms is to maximize shareholder value. Nevertheless, recent decades contributed to a tendency for firms to concentrate not only on the well-being of the shareholders but also on other stakeholders. Moreover, this idea is highly supported by the governments, international organizations and public opinion. In general, the future perspectives of growth based on this tendency has firms and businesses policies which take care about stakeholders as well.

As Kerr (2017) said that human resources are the most important productive asset of any successful business. This statement provokes to think about workers and their well-being. Unionizations now is an inevitable part of a lot of companies. The workers started to organize themselves in order to have influence on the companies' policy and of course on their salaries. In this way, workers are able to feel themselves more secure, in terms of financial standing, morale, which in turn increases their satisfaction from working for the company. 'Unionization enables employees to play a more

influential role in refraining managers from undertaking risky investment projects. The high concerns of unionized employees about downside risks also motivate them to urge the implementation of conservative information disclosure polices so that they are able to take protective actions upon receiving bad news in a timely manner, leading to lowered crash risk' (Chen, Y. Tong, Wang and Zhang, 2017, page 776).

Önday (2016) in the research points out that the trend of unionization of companies depends on various factors such as: regions, countries, sectors, political systems, history. It was pointed out that the main characteristics of companies' unionization in Europe were concentration not only on better working conditions or higher salaries but also on the civil, political, and social rights (Önday, 2016). While the main characteristic of unionized companies located in the USA was concentration on the groups: full-time workers, female, male, etc (Önday, 2016). At the same time Morissette, Schellenberg, and Johnson (2005) found out that unionization rates were differentiated with years for the commercial sector and public sector. The main factors they highlighted were: gender, age, education, occupation, and earnings (Morissette, Schellenberg and Johnson, 2005). For the groups observed from 1981 to 2004 year the greater decline in unionization rate was faced by 'Men in blue-collar jobs (construction trades, transportation and equipment operation, and occupations unique to processing, manufacturing, and primary industry)'. (Morissette, Schellenberg and Johnson, 2005, page 8). The general trend observed by Morissette, Schellenberg, and Johnson (2005) was a decline of unionization, which was traced even in the 1990s years in the forestry, mining, and construction industries.

Based on de Pinto and Lingens studies (2019) unionization of the firms has an influence not only on the single firms but on the market as a whole. Due to the fact that some firms are unionized, it means they have higher costs. Usually firm covers this costs with higher wages and at the same time higher prices on products (de Pinto and Lingens 2019). This fact means that another firm can enter the market and offer lower prices just because it is not unionized (at the same time this firm offers lower wages as well). Moreover, in some firms the costs of unionization is covered by the salaries. Consequently, higher productivity firms had to pay higher wages.(de Pinto and Lingens 2019)

Based on the logic above it seems that the unionization should prevent high salary gap within the firm. At the same time we should understand that unionization and increase in salaries of average workers has no straight relationship, because it does not prevent management board from undertaking highly risky projects to have chance to increase the performance of the company for some time. As their salaries and bonuses are based on the performance company.

Today's principles of sustainable business development may help to exclude inequality. Public and governments try to oppose high salary gaps in the firms. For instance: in order to ensure the UK will be attractive place for investments, government of UK imposed new law regarding explanation of the UK firms on high salary gaps between regular workers and CEO. In this way they want to ensure that companies in the UK have the ability to the sustainable growth as they believe it may attract investors. As a result of it the UK listed companies will report and justify their salary gaps in 2020 (Clark and Duncan, 2018). Such regulatory framework demonstrates us that not only public opinion has an influence on this issue, but governments want also to ensure the future growth of the markets and economy in the whole by taking interests of the stakeholders into account.

From the perspective of management board we want to highlight several perceptions. On the one hand, indicates that labor unions' risk-averse nature and rent-capturing power may discourage firm's managers from undertaking high-risk projects (Chen, Y. Tong, Wang, Zhang, 2017). It means that managers may not take highly risky projects in order to increase the performance of the company and to get more bonuses from the remuneration committee or may not change the way of accounting in a particular year. Because in this case labor unions would demand higher salaries in order to lower the salary gap. At the same time it protects shareholders, because managers can use different accounting strategy only to persuade shareholders that companies performance is good to have bonuses for managers which in reality cannot be truth. From another point of view, we cannot omit fact that the required changes of the accounting standards by the government can improve or aggregate the view of the company (higher numbers on the balance sheet). Labor unions may omit the fact that the improvements are only due to change accounting standards (more money exists only on the paper) and not due to the real improved performance of the firm and still demand the increase of their wages. Of course, the described behavior is just a possible reaction of labor unions and management and it does not mean that in all the cases it happens like described above.

Based on the arguments above, we can realize that not always the profitability of the company and their financial reports can highlight the true value of the company. Still for the shareholders and stakeholders perspective we would like to propose analysis of productivity ratio. By the nature of this term we understand as how much the company can produce with usage the lower amount of assets (labor expenses). For our analysis we determine productivity as revenue reported by the firm winsorized divided by total labor expenses (salaries, bonuses, costs of trainings).

Research Hypothesis

The following research hypothesis is tested in the present paper:

H1: Labor unionization is negatively associated with intra-firm salary gap

H2: Labor unionization is negatively associated with productivity in the high capitalized companies.

Higher unionization (representatives of employees) may be associated with greater wages for rank-and-file employees, which increases the labor expenses (salaries and benefits). So, the higher the unionization the lower the salary gap. The tournament theory was supported by Yang, Yang and Su (2015). It was indicated that the steeper the hierarchy of the company the higher the salary gap. Based on the fact that we have the most capitalized companies we can predict that majority of them have steep hierarchical structure of the organization. It may possible imply a relatively higher salary gap in those companies.

Table 1. Descriptive statistics

Variable	Mean	Std. Dev.	Min	Max
TR_To_TA_w	0,7671	0,5671	0,0437	2,9777
LN_TotalAssets	24,0653	2,5038	7,5704	33,4737
LN_SalaryGap	4,2007	1,5751	-7,1252	12,8103
LN_Productivity	3,1118	1,4123	-2,8524	12,0547
LabourExpenses_w	0,0306	0,0736	0,0001	0,5724
Voluntary_Turnover_of_Employees_w	0,3390	1,8259	0,1608	65,5400
Involuntary_Turnover_of_Employees_w	0,1553	0,9747	0,0871	45,2000
Trade_Union_Representation_w	12,5743	26,3166	0,3816	100,0000
Net_Employment_Creation_w	4,0212	14,4255	-33,4441	97,6361
TotalDebt_To_TotalAssets_w	0,0246	0,0908	0,0001	1,1400

Source: own elaboration.

Table 1 presents descriptive statistics of the variables that will be used in regressions to test our hypothesis. For our analysis we took around two thousand companies with the greatest size. Among

observed company there was Apple company. As we know Apple is a designer manufacturer and marketer of software, media products and personal computers with its headquarter in California (USA). Among the most capitalized companies mainly companies with high-technologies specialization were observed. That served as the reason to increase the number of observed companies, as our primary goal was to concentrate on the size of the companies, not on industry, country, or region of operating activity. The data taken for the companies were the last ten financial years. All of our variables are either winsorized or taken as a natural logarithm. In this way we are able to eliminate outliers and bring the variables' distribution closer to normal. As we took 1915 large-cap firms, we should indicate that between first and the last firm taken the value of total assets were more than 20 times bigger. But either the division on total assets, or winzorization or natural logarithm helped us to make normal distribution of the variables above. Table 2 shows us the definition of the variables that will be used on our regressions.

At the table 1 the first ratio means how much a company can generate revenue (sales) using their assets. This ratio is also winsorized. It means we took 1 percent the lowest outliers and made them equal to the value that is exactly 1 percent outlier. The same we did with the highest 1 percent outlier. The standard deviation which measures the distance on average between actual value and mean value is not greater than Mean, which makes Mean reliable. Also taking into consideration minimum and maximum, we can make a conclusion that the variable do not have large outliers. We measured productivity as total revenue reported divided by firms reported labor expenses, in order to make this variable comparable we took natural logarithm. *e^ln(productivity)= productivity,* where *e* is mathematical constant and equals approximately to 2.718. By the definition of *ln*, the variable productivity cannot be lower or equal to zero. The minimum value of the variable LN_Productivity is negative number. It can be explained because the productivity value in this case were a fraction number (between zero and one). In the Appendix we created the graphs that clearly show us that almost all of our variables do not have large outtliers it makes our further analysis and conclusions reliable. Table 2 shows us the definition of all variables that we used in our models.

Table 2. Definition of variables

Variable	**Definition**

TR_To_TA_w	Total Revenue taken as a percentage of firm's reported Total Assets (Total Revenue divided by Total Assets)
LN_TotalAssets	Natural logarithm of firm's reported total assets
LN_SalaryGap	Natural logarithm of salary gap (CEO's total salary (or the highest salary) divided by the average salaries and benefits)
LN_Productivity	Natural logarithm of Productivity (Revenue divided by firm's reported Labor Expenses)
LabourExpenses_w	Reported Labor Expenses taken as a percentage of firm's reported Total Assets (Labour Expenses divided by Total Assets), winsorized
Wages_Working_Condition_Contr_w	Number of controversies published in the media linked to the wages or working condition issues, winsorized
Policy_Freedom_of_Association_w	Does the company have a policy of freedom of associations?
Trade_Union_w	Number of employees represented by the trade unions members divided by the total number of employees and multiplied by 100, winsorized
Net_Employment_Creation_w	Employment growth over the last year, winsorized
TotalDebt_To_TotalAssets_w	Total Debt taken as a percentage of firm's reported Total Assets (Total Debt divided by Total Assets)

Source: own elaboration

Hypothesis 1

Table 3

	LN_Productivity		LN_Productivity	
Model No	1		2	
no. of observations	8693		2644	
Sig. F	0.0000	***	0.0000	***
R^2	0,354		0,444	
Constant	4,142	***	2,268	***
	(0.113)		(0.319)	
Trade_Union_w	-0,039	**	-0,016	**
	(0.000)		(0.001)	
LabourExpenses_w	-0,838	**	-0,602	*
	(0.128)		(0.177)	
LN_TotalAssets	0,031	**	0,072	**
	(0.005)		(0.013)	
LN_SalaryGap			0,072	**
			(0.013)	

Source: own elaboration. Notes: This table presents the results of random-effect panel model estimates. The standard errors are provided in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively.

In our first assumption we would like to investigate whether unionization (trade union representation) of the companies has a positive or negative impact on the productivity. Two models are statistically significant for the whole as their significance level is lower than 5%. 35,4% of the variation within productivity is explained by the results of the Model in Table 3.. Moreover, 44.4% of the variation within productivity is explained by Model 2. P-value (significance level) of all independent variables are of 1% (***), 5% (**) or 10%(*).

Based on Pinto and Lingens (2019) we assume that almost all of our firms are unionized due to the fact that only high productive firms are unionized as they can carry the union costs. While the low productive firms are not, because they either go bankrupt or are simply not unionized. They also pointed out that as the wage increase for the employees is accompanied with increase in prices. In our model we can observe that one increase in LN_Prodictivity will lead to the decrease in

LabourExpenses_w by 0.838.It confirms that unionized companies have higher labor expenses (higher wages offered), which lowers our productivity ratio. The higher the denominator (labor expenses), the lower the ratio (productivity)

Our second model indicates that if salary gap increase by 1 unit, the productivity growth by 0.072. Which confirm the results of Yang, Yang and Su (2015). They confirmed the tournament theory and stated that for steep-hierarchy companies, an increase in salary gap may lead to increase in productivity. It also makes sense for our case as the chosen companies has a steep-hierarchy as only medium and small companies can afford low hierarchy (or flat) structure. The research sample chosen for the present study includes only large-cap companies.

Table 4. Correlation of the variables of the Table 3

	LN_Productivity	Trade_Union_w	LabourExpenses_w	LN_TotalAssets	LN_SalaryGap
LN_Productivity	1	-,039**	-,838**	,031**	,167**
Trade_Union_w	-,039**	1	-,016*	,113**	-,092**
LabourExpenses_w	-,838**	-,016*	1	,203**	-,067**
LN_TotalAssets	,031**	,113**	,203**	1	-,041**
LN_SalaryGap	,167**	-,092**	-,067**	-,041**	1
** Correlation is significant at the 0.01 level (2-tailed).					
* Correlation is significant at the 0.05 level (2-tailed).					

Source: own elaboration

Table 4 represents us a correlation between variables used in Table 3.Based on it we can make further conclusion that if trade union representation (Trade_Union_w) in the company increase by 1 employee the salary gap will decrease by 0.092. It confirm our prior conjecture of a negative associative link between the degree of labor unionization and the level of intra-firm salary gap.

On the other hand, one of the main goal of trade unions are supported and taken by the government. Example of it is the UK government decision to demand a justification by the companies regarding salary gaps in 2019, so the results would be reported in 2020 already. Deunionization may lower wages and may improve the labor market allocation (de Pinto, Lingens; 2019). At the same time it is stated that while unionized firms offer higher wages and higher prices, there is the place to enter for the non-unionized firms which would pay lower prices for employees and offer lower prices for their customers (good for clients) (de Pinto, Lingens; 2019). So, it means that unionization helps in salary gap for one country, but allows to increase the salary gap (inequality) within the whole labor market. At the same time we should realize that for Europe the cost of labor market differs within countries. In developed countries (example: UK, Germany) there are lot of firms that are unionized and the labor

costs more than comparing to the Eastern Europe. Which means that UK companies who want to open subsidiary do it in Eastern part of Europe (Poland, Hungary) as it is cheaper. Such an intervention of the government will lead to the following conclusion. With lower salary gap a lot of companies probably would not need a lot of trade union representation, which would lower the price on goods and would make market more attractive. Such a conclusion is also consistent with Pinto, Lingens (2019) who stated that restricting unionization (based on the observation of developed countries) may be helpful in dealing with inequality and welfare within labor market.

Hypothesis 2

Table 5

Dependent variable	LN_Productivity	
Model No	3	
no. of observations	8693	
Sig. F	0.0000	**
R^2	0,003	
Constant	2,173	**
	(0.008)	
Wages_Working_Condition_Contr_w	-0,012	
	(0.157)	
Policy_Freedom_of_Association_w	-0,027	**
	(0.002)	
Freedom_of_Association_Controversies_w	-0,015	
	(0.097)	
Trade_Union_w	-0,029	**
	(0.000)	
**. Correlation is significant at the 0.01 level (2-tailed).		

Source: own elaboration

It is generally assumed that there is a negative effect on the productivity of the firms if there are controversies within the firm regarding working conditions, wages and freedom of association policy. Based on the Table 5, we can clearly see that such independent variables are not really significant in

our case. It can be explained because of the size of the chosen companies. If the productivity ratio would increase by 1, trade union representation would decrease by 0.029. It can be explained that in a high developed countries government implemented labor market reforms (example: UK law mentioned earlier in overview) and because of that the general tendency is to decrease the number of trade union representators. 'A primary motivation for implementing these policies is the notion that with higher costs, workers refrain from forming a union.' As it was previously mentioned for that firms which are unionized the labor expenses tend to be higher, which lead to the higher prices on their products. As a result there is a place for companies which are not unionized, so they can offer lower prices and at the same time lower wages. Taking into account the whole labor market such situation would increase the inequality of salaries. 'Deunionization then lowers wages and improves the labor market allocation and hence welfare' (Pinto, Lingens, 2019, page 50). At the same time they also concluded that in the long run on the market there would be fewer unionized firms and more nonunionized firm (cannot afford unionization because of low productivity), which actually makes the salary gap within the market lower (Pinto, Lingens, 2019).

It is also needed to mention the psychological contract by Argyris, Levinson and Schein revealed in 1960. Based on this theory we can assume that within high productive firms the employer meet the expectation of the employee. It can be also translated to the lack of policy freedom of association within the company. If the employer meet the expectation seems no need for a lot of association within the company (R.Crawshaw, Budhar and Davis 2014).

Conclusion

In our paper, we tried to explain the union importance from the perspective of employee, employer management. We used not only purely economic and mathematical way to explain but included also psychology theory which allowed us to show the need for trade unions in the basic and understandable way.

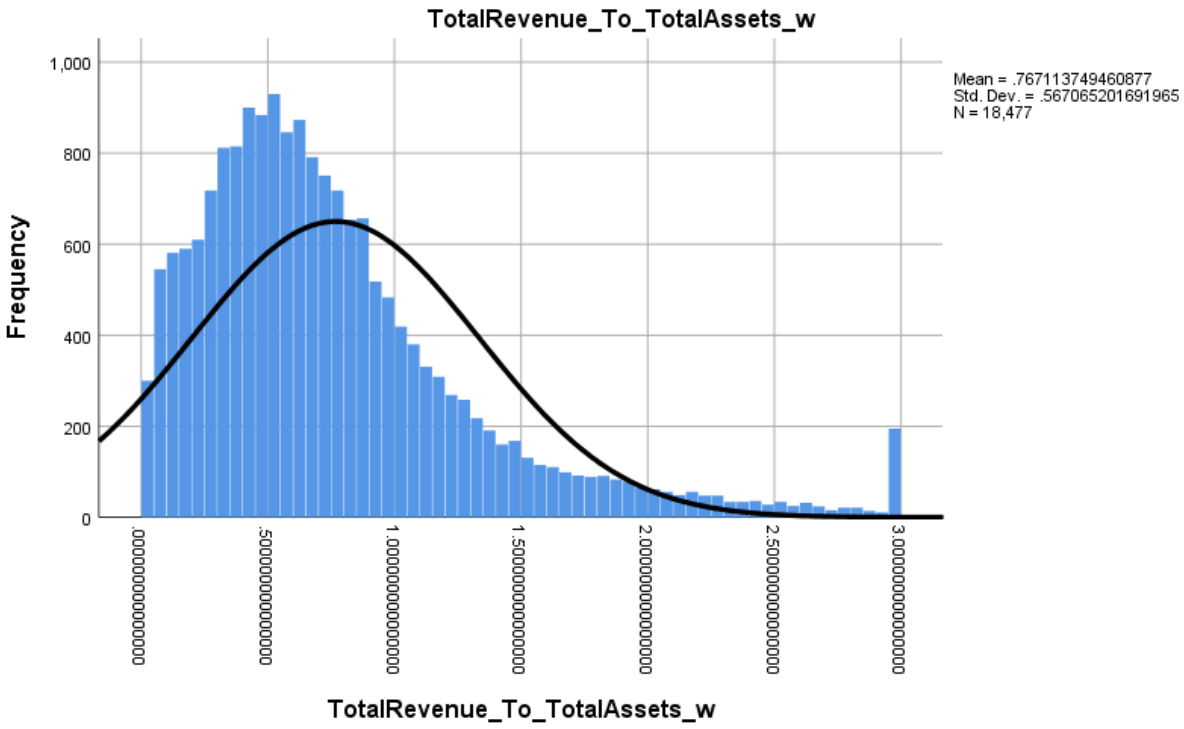
The results from the first model are the following: intra-firm salary gap is negatively associated with the level of labor unionization. From the point of view of the whole market, the more unionized firms on the market, the more space for firms with lower prices and competitive wages which means increase the salary inequality within the labor market. In the steep-hierarchy firms there is a positive correlation between salary gap and productivity. Our results are also consistent with Lee-Wen Yang and others (2015). Lee-Wen Yang and others (2015) pointed out such a conclusion only for audit

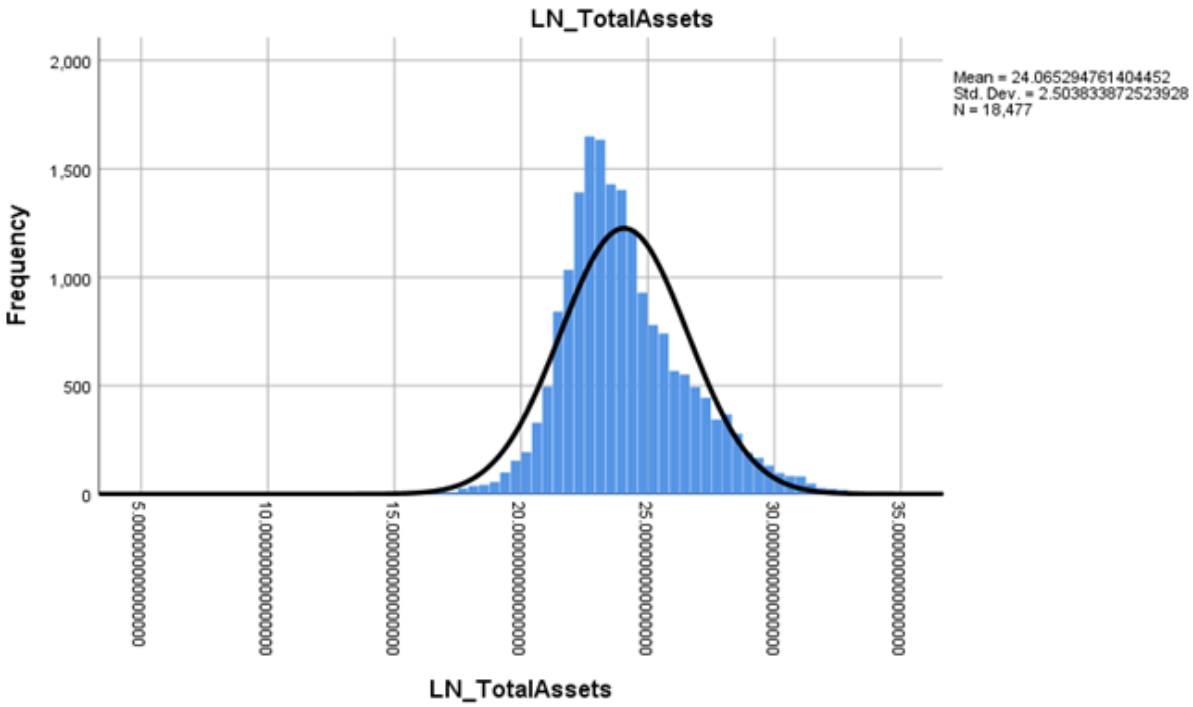
firms. We developed this idea and based on our models can state that this conclusion is also works for the most capitalized companies as well.

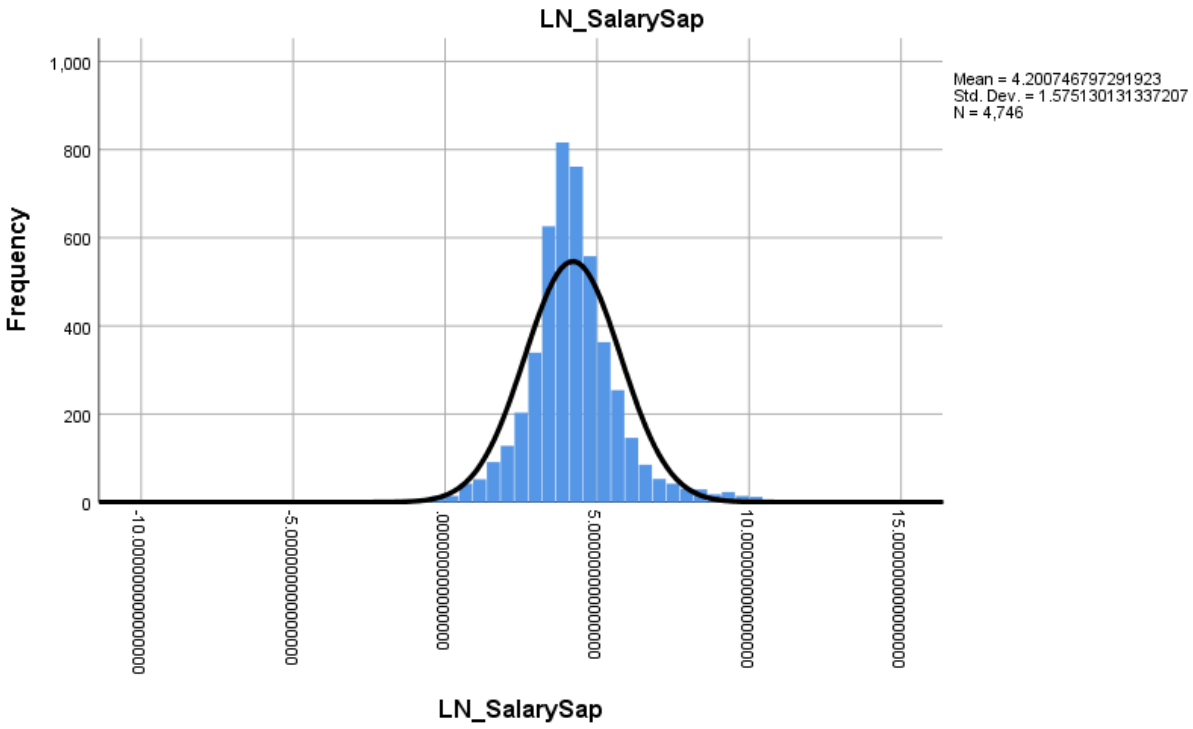
Our second hypothesis confirms that the higher trade union representation the lower the productivity. The government takes care about equality of salaries distribution within the whole market. It is why it implements laws that can economically replace unions, and as a result lower the trade unions representation, which can lower costs for the firm. This would allow unionized firms to stay competitive (in terms of their products prices) on the market. At the same time it would ensure government control and stability on the labor market which can guarantee the growth of sustainable businesses on the market.

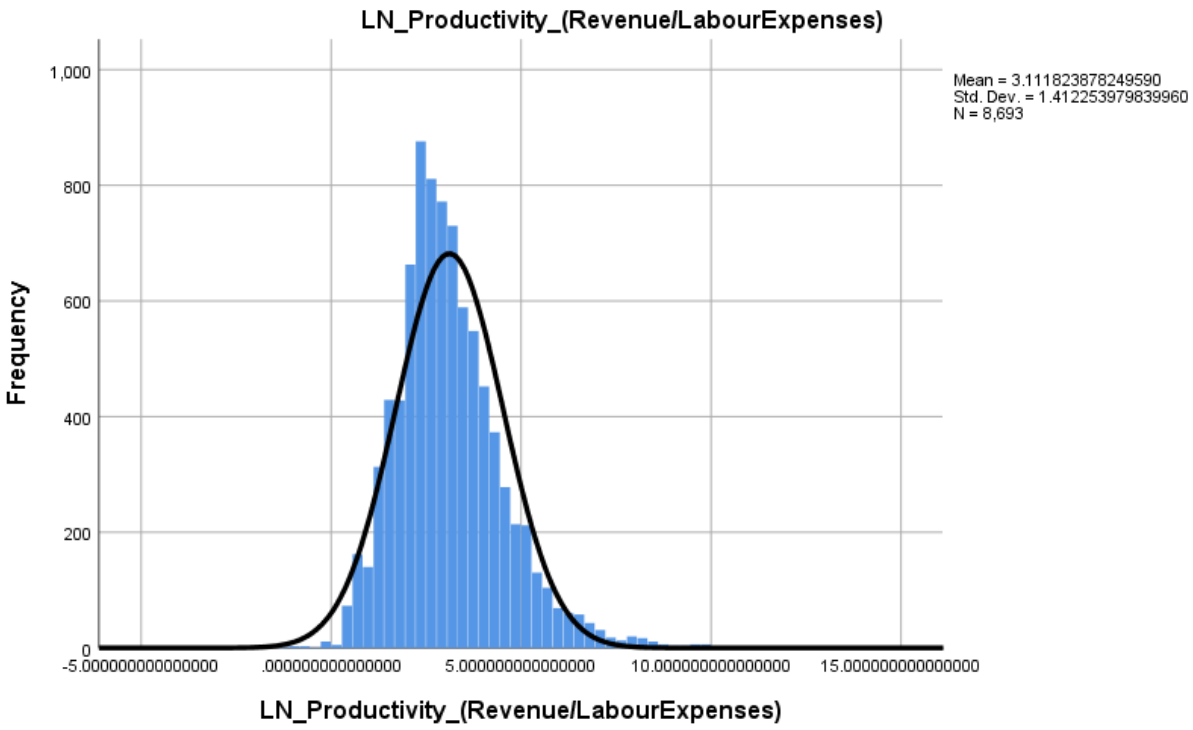
The possible way to develop our research is to re-perform our empirical analysis on a sample of small- and mid-cap companies. It might help us to understand more the influence of the labor unions on the productivity and on the labor market not only from the perspective of big size companies but also to estimate the level of influence on the labor market the medium and low size companies.

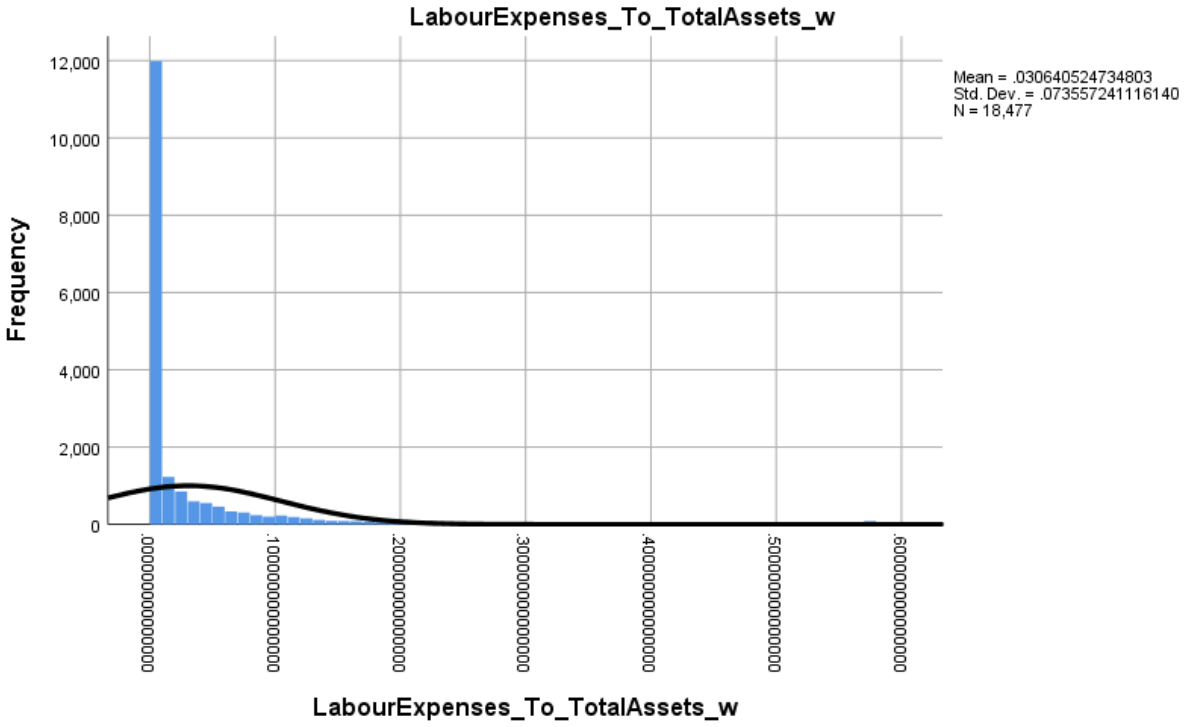
Appendix 1. Distribution of the variables

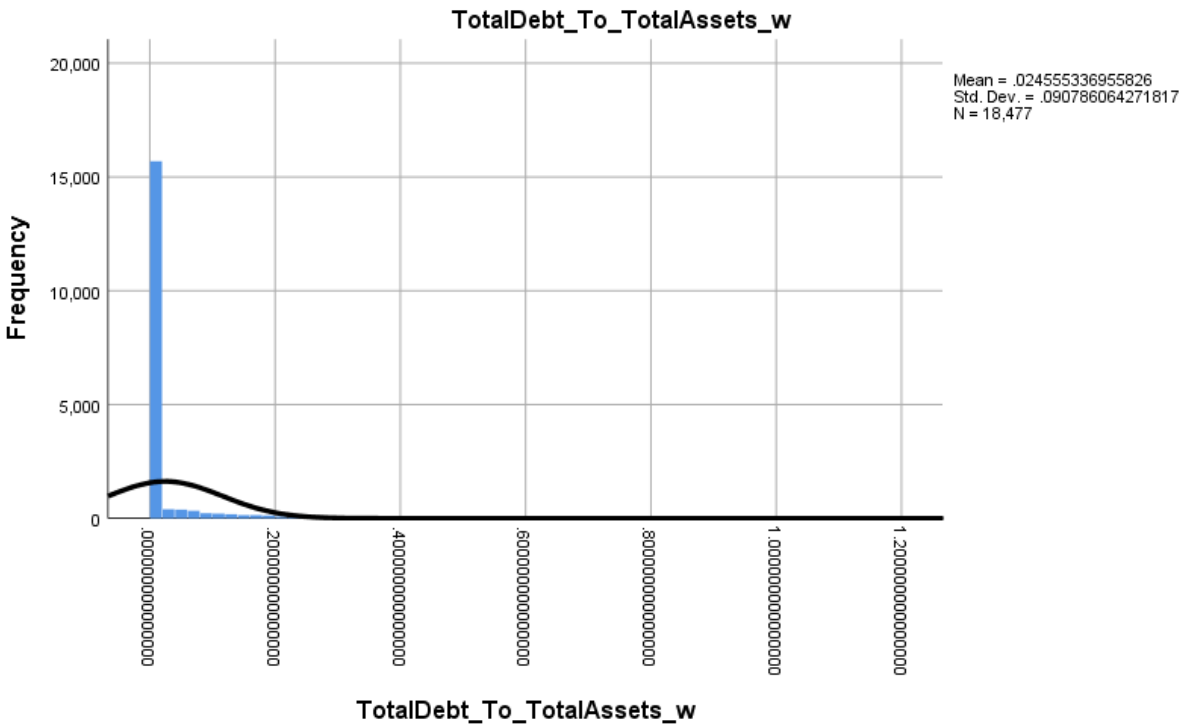



LN_TotalAssets
Mean = 24.065294761404452
Std. Dev. = 2.503833872523928
N = 18,477
Frequency
2,000
1,500
1,000
500
0
5.000000000000000
10.000000000000000
15.000000000000000
20.000000000000000
25.000000000000000
30.000000000000000
35.000000000000000
LN_TotalAssets


LN_SalarySap
Mean = 4.200746797291923
Std. Dev. = 1.575130131337207
N = 4,746
Frequency
1,000
800
600
400
200
0
-10.000000000000000
-5.000000000000000
.000000000000000
5.000000000000000
10.000000000000000
15.000000000000000
LN_SalarySap


LN_Productivity_(Revenue/LabourExpenses)
Mean = 3.111823878249590
Std. Dev. = 1.412253979839960
N = 8,693
Frequency
1,000
800
600
400
200
0
-5.000000000000000
.000000000000000
5.000000000000000
10.000000000000000
15.000000000000000
LN_Productivity_(Revenue/LabourExpenses)


LabourExpenses_To_TotalAssets_w
Mean = .030640524734803
Std. Dev. = .073557241116140
N = 18,477
Frequency
12,000
10,000
8,000
6,000
4,000
2,000
0
.000000000000000
.100000000000000
.200000000000000
.300000000000000
.400000000000000
.500000000000000
.600000000000000
LabourExpenses_To_TotalAssets_w


TotalDebt_To_TotalAssets_w
Mean = .024555336955826
Std. Dev. = .090786064271817
N = 18,477
Frequency
20,000
15,000
10,000
5,000
0
.000000000000000
.200000000000000
.400000000000000
.600000000000000
.800000000000000
1.000000000000000
1.200000000000000
TotalDebt_To_TotalAssets_w

References

Chen, J. Tong, J.Y., Wang, W. and Zhang, F. (2019). The Economic Consequences of Labor Unionization: Evidence from Stock Price Crash Risk. *Journal Bussiness of Ethics*, *157*, 775–796. http://eds.b.ebscohost.com/ DOI 10.1007/s10551-017-3686-0 (16.12.19).

Clark, G.D. and Duncan, I.J. (2018). *UK's biggest firms will have to justify pay gap between bosses and their workers*. https://www.gov.uk/government/news/uks-biggest-firms-will-have-to-justify-pay-gap-between-bosses-and-their-workers (22.12.20)

Crawshaw, J.R., Budhar, P. and Davis, A. (2014). *Human Resources Management Strategic and International Perspective*. London: Sage.

Daud, Z. and Tumin, Sh. (2013). The Relationship between Employees' Need and the Formation of Trade Union: The Malaysian Manufacturing Company's Experience. *International Journal of Business and Social Science*, *4*(13), 124–134. https://ijbssnet.com/journals/Vol_4_No_13_October_2013/15.pdf (25.12.2019).

de Pinto, M. and Lingens, J. (2019). The impact of unionization costs when firm-selection matters. *Labour Economics*, *60*, 50–63. http://eds.b.ebscohost.com/ 0927-5371 (16.12.19).

Fatula, D. (2018). Selected micro- and macroeconomic conditions of wages, income and labor productivity in Poland and other European Union countries. *Contemporary Economics*, *12*(1), 14–32. http://eds.b.ebscohost.com/ DOI 10.5709/ce.1897-9254.261 (18.12.2019).

Kerr, J. (2017, May). *Your People Are Your Most Important Asset.* https://www.inc.com/james-kerr/your-people-are-your-most-important-asset.html (22.12.19).

Lee-Wen Yang, Yi-Fang Yang and Wun-Hnog Su (2015). Salary gap and operating performance: perspective of tournament theory. *Global Journal of Business Research*, *9*(1), 15–26. http://eds.b.ebscohost.com/ ISSN: 2157-0191 (16.12.19).

Morissette, R., Schellenberg, G. and Johnson, A. (2005). *Diverging trends in unionization. Perspectives on Labour and Income*, *6*. https://www.researchgate.net/publication/237242624_Diverging_trends_in_unionization (17.05.20).

Noe, R.A., Hollenbeck, J.R., Gerhart, B. and Wright, P.M. (2008). *Human Resources Management Gaining a Competitive Management*. New York: McGraw-Hill Irwin.

Ori, J. (2019). *The Hierarchy of Needs for Employees.* https://smallbusiness.chron.com/hierarchy-needs-employees-20121.html (25.12.19).

Önday, Özgür (2016). *New Trends And Comparative Analysis On Unionization Among Professionals The Case Of Turkey.* The International Academy of Business and Public Administration Disciplines Conference Program. Istanbul, Turkey. July 28–31. https://www.researchgate.net/publication/309424381_NEW_TRENDS_AND_COMPARATIVE_ANALYSIS_ON_UNIONIZATION_AMONG_PROFESSIONALS_THE_CASE_OF_TURKEY (17.05.2020).