

Matuszewska-Pierzynka, Agnieszka

Working Paper

Productivity effects of the ownership concentration in employee-owned companies

Institute of Economic Research Working Papers, No. 73/2017

Provided in Cooperation with:

Institute of Economic Research (IER), Toruń (Poland)

Suggested Citation: Matuszewska-Pierzynka, Agnieszka (2017) : Productivity effects of the ownership concentration in employee-owned companies, Institute of Economic Research Working Papers, No. 73/2017, Institute of Economic Research (IER), Toruń

This Version is available at:

<https://hdl.handle.net/10419/219896>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.



<https://creativecommons.org/licenses/by/3.0/>



Institute of Economic Research Working Papers

No. 73/2017

**Productivity effects of the ownership concentration in
employee-owned companies**

Agnieszka Matuszewska-Pierzynka

Article prepared and submitted for:

9th International Conference on Applied Economics Contemporary Issues in Economy, Institute of Economic Research, Polish Economic Society Branch in Toruń, Faculty of Economic Sciences and Management, Nicolaus Copernicus University, Toruń, Poland, 22-23 June 2017

Toruń, Poland 2017

© Copyright: Creative Commons Attribution 3.0 License

Agnieszka Matuszewska-Pierzynka

a.mpierzynka@gmail.com

Department of Business Analysis and Strategies, Faculty of Economics and Sociology,
University of Lodz, 41 Rewolucji 1905r. Street, 90-214 Lodz, Poland

Productivity effects of the ownership concentration in employee-owned companies

JEL Classification: *D24; G32; L33*

Keywords: *privatisation process; direct privatisation; employee-owned company; productivity; ownership structure*

Abstract

Research background: Empirical research on the influence of the degree of ownership concentration in the employee-owned companies on their sales revenues thematically fits into the issue of efficiency of the direct privatisation method, in particular giving a state-owned enterprise for use against payment.

Purpose of the article: The main goal of this article is to verify the research hypothesis stating that in employee-owned companies an increase in the degree of ownership concentration leads to an increase in sales revenues.

Methodology/methods: In conducted empirical studies parameters of a Cobb–Douglas production function were estimated by Ordinary Least Squares method for two variants, differing in the way of measuring the degree of ownership concentration.

Findings & Value added: The research hypothesis formulated in this paper was verified negatively as the increase in the degree of ownership concentration in employee-owned companies caused the decrease in their sales revenues.

Introduction

The main aim of this article is to verify the research hypothesis stated that in investigated employee-owned companies an increase in the degree of ownership concentration leads to an increase in sales revenues.

The employee-owned company is a joint stock company established by employees of the directly privatised state-owned enterprise to take its assets in the use against payment (compare Jawłowski, 2001, p. 55; Kozarzewski, 1998, pp. 25-26; Leksykon, 1998, p. 195). The strong employee nature of a company using a state-owned enterprise against payment is a

result of the need to meet capital-ownership statutory conditions (see Błaszczuk, 2002, p. 193) which create a possibility to establish a joint stock company, even with a full participation of employees, but with dispersed ownership.

Empirical studies on the influence of employee ownership on the efficiency of a company carried out so far show that the entities, in which the share of employee ownership exceeded 5% of the share capital, revealed relatively poor performance (see Faleye *et al.*, 2006, p. 509; Kruse & Freeman, 2012, pp. 23). However, it seems that the increase in ownership concentration in the hands of outside or inside shareholders (compare Fazlzadeh *et al.*, 2011, pp. 255-256; Kapopoulos & Lazaretou, 2006, p. 18; Schanchez-Ballesta & Garcia-Meca, 2007, 885-886) and the implementation of managerial equity ownership (compare Daraghma & Alsinawi, 2010, p. 124; Jelinek & Stuerke, 2009, p. 173) may improve performance of this type of entities.

The essence of employee-owned companies

Giving a directly privatised state-owned enterprise for use against payment as a rule, takes place to a joint stock company that meets conditions connected with a required value of the share capital as well as a participation of employees and outside investors in it (see Ustawa z dnia 30 sierpnia 1996 r., Article 51 (1, 2)).

The fulfilment of these conditions, with limited financial resources of employees and negligible interest of outside investors in joining the company with their capital participation makes that the ownership of relatively low value share capital is usually significantly dispersed (see Jarosz & Kozak, 1995, pp. 115-125). However, due to the disposal of shares belonging to ordinary employees to managers, the ownership that was initially dispersed among employees is gradually concentrated in the hands of managerial elites (compare Błaszczuk & Woodward, 2001, p. 17). The reason for the transfer of shares by employees is mostly a weak economic and financial standing of the employee-owned company, resulting from the need to meet not only capital-ownership statutory conditions of its creation, but also the obligations under the agreement on giving a state-owned enterprise for use against payment concluded for a fixed period (see Ustawa z dnia 30 sierpnia 1996 r., Article 52 (1)).

The most important obligation of the employee-owned company is the necessity to repay the debt for the use of a state-owned enterprise. This commitment cannot be lower than the sum of (compare Rozporządzenie Rady Ministrów z dnia 16 października 1997 r., §3) the value of the state-owned enterprise paid in capital instalments and the sum of additional fees

for the entire duration of the agreement debited in financial costs (see Kozarzewski, 1998, p. 25).

Beside price liabilities, i.e. related to the value of a state-owned enterprise, the employee-owned company is obliged to comply with the so-called, non-price commitments. Non-price commitments primarily consist of investment commitments requiring from the employee-owned company to pay a set amount of capital expenditure on tangible fixed assets (compare Bojar *et al.*, 2003, s. 110-111; Wrońska, 2004, pp. 125-127; Matuszewska-Pierzynka, 2014, pp. 45-47) and social guarantees including a need to keep agreed employment and quite frequently, even to increase wages (see Matuszewska-Pierzynka, 2016, pp. 101-103; Matuszewska-Pierzynka, 2016b, pp. 114-115; Ustawa z dnia 30 sierpnia 1996 r., Article 44).

The small share capital with slight prospects for its increase in the future, difficulties in gaining a positive financial result, being the effect of significant financial and remuneration costs, as well as the lack of property rights of a state-owned enterprise in the duration of the agreement with the State Treasury (see Ustawa z dnia 30 sierpnia 1996 r., Article 5 (2)) negatively affect the credit capacity of the employee-owned company. Limited possibility of obtaining funds from a bank loan for the implementation of obligatory investments means that a primary source of their financing becomes the net profit (compare Matuszewska-Pierzynka, 2015a: pp. 388-389; Matuszewska-Pierzynka, 2015b, p. 103). Therefore, due to retaining the whole of a minuscule net profit for investment purposes, workers-shareholders seeking to maximize total current incomes (compare Faleye *et al.*, 2006, p. 509; Harbaugh, 2005, p. 566; Kim & Ouimet, 2010, pp. 9, 36), which mainly consist of salaries and dividends, are likely not only to exert some wage pressure, but also to sell shares (compare Błaszczuk, 2002, p. 197; Kozarzewski & Woodward, 2001, p. 22).

Research Methodology

The verification of the formulated research hypothesis was conducted among fifteen employee-owned companies from Mazowieckie Province, which concluded the agreement of giving a state-owned enterprise for use against payment in between years 2000–2004, basing on the data from financial statements submitted by them to the National Court Register for ten-year period after the privatization year.

Bearing in mind previous empirical research that analysed productivity effects of the employee participation (see Conte & Svejnar, 1988, pp. 144-145; Estrin *et al.*, 1987; pp. 51-52; Jones, 1993, pp. 478-479; Kozarzewski & Woodward, 2001, p. 31), empirical studies on the relation between ownership concentration and productivity of employee-owned companies are

based on a Cobb–Douglas production function that in a logarithm form looks as follows:

$$\ln V = \ln A + \alpha_1 \ln K + \alpha_2 \ln L + \beta X + \gamma Z$$

From collected data, three operating variables (values are deflated by CPI₂₀₀₀₌₀ – Consumer Price Index (basic year = 2000)) are constructed:

- V (output) – sales revenues instead of value added, which was impossible to calculate because of the lack of data measuring capital cost (compare Christev & FitzRoy, 2002, p. 261; Grosfeld & Nivet, 1999, p. 1141),
- K (capital input) – tangible fixed assets (one period lagged variable) being the object of obligatory investments and
- L (labour input) – salaries covering employment and wages commitments.

The X vector contains dummies for the number of years after privatisation year treated as 0 period (AGE – values from 1 to 10), the year of production (YEAR – values from 0 for 2001 to 13 for 2014) and the location of company headquarters (CITY – values 1 and 0) as well as the construction (CONST – values 1 and 0) and transportation and storage (TRANS – values 1 and 0) sectors. The vector Z comprises three proxies for the ownership concentration: DOC (degree of ownership concentration) measured by the value of Herfindahl–Hirschman Index (compare Sosnowski, 2015, p. 351; Fazlzadeh et al., 2011, p. 254) that forms the basis for the construction of two other dummy variables, namely SOC (strong ownership concentration – the value of Herfindahl–Hirschman Index is above the third quartile from a set of index values) and WOC (weak ownership concentration – the value of Herfindahl–Hirschman Index is below the first quartile from a set of index values).

The estimation of a Cobb–Douglas production function is carried out with the use of Ordinary Least Squares method for two variants – main and additional – that differ in terms of the vector Z structure. Taking into account constructed variables as well as denoting enterprises by *i*, the time period in years by *t* (*t* = 1, 2, ...) and residual by μ , the estimated Cobb–Douglas production function in discussed variants is as follows, respectively:

$$\ln V_{it} = \alpha_0 + \alpha_1 \ln K_{it-1} + \alpha_2 \ln L_{it} + \beta_1 AGE_{it} + \beta_2 YEAR_{it} + \beta_3 CITY_{it} + \beta_4 CONST_{it} + \beta_5 TRANS_{it} + \gamma DOC_{it}$$

and

$$\ln V_{it} = \alpha_0 + \alpha_1 \ln K_{it-1} + \alpha_2 \ln L_{it} + \beta_1 AGE_{it} + \beta_2 YEAR_{it} + \beta_3 CITY_{it} + \beta_4 CONST_{it} + \beta_5 TRANS_{it} + \gamma_1 SOC_{it} + \gamma_2 WOC_{it}$$

The relation between ownership concentration and productivity of employee-owned companies – the results of empirical research

Analysing the results of the estimation of a Cobb–Douglas production function for employee-owned companies qualified for the research sample, the positive relationship between sales revenues and tangible fixed assets as well as salaries, whose coefficients are statistically significant at the significance level $\alpha = 0.01$ can be noticed.

Table 1. Production function estimates of productivity effects

Variable	Main variant		Additional variant	
	Parameter estimate	<i>p</i> -value	Parameter estimate	<i>p</i> -value
LnA	2.4624	0.0024	2.4222	0.0062
LnL	0.2537	0.0000	0.2530	0.0000
LnK	0.7079	0.0000	0.7047	0.0000
AGE	0.0123	0.7691	0.0028	0.9481
YEAR	-0.0042	0.9141	0.0013	0.9745
CITY	-0.2031	0.0414	-0.1614	0.1069
CONST	0.1867	0.1493	0.2419	0.0679
TRANS	-0.5549	0.0005	-0.4876	0.0028
DOC	-0.4003	0.0243	-	-
SOC	-	-	-0.1470	0.1765
WOC	-	-	0.0307	0.7425
N	146		146	
Adj R ²	0.8988		0.8961	
F statistics	161.91		139.91	

Source: own calculations based on the data of the National Court Register

The positive coefficient of AGE variable in both considered variants of the estimation, although not statistically significant is slight support for assertions advocating the existence of a positive relationship between the company's performance and its life cycle. The coefficient of YEAR varia-

ble, which is negative in the main variant of the estimation and positive in the additional one, as well as statistically insignificant in both of these variants, does not allow to formulate the request for the direction of impact of technological changes on company's performance. According to the conducted empirical research, the location of company headquarters in Warsaw negatively influenced on sales revenues of studied employee-owned companies – the coefficient for CITY variable is statistically significant in the main variant of the estimation at the significance level $\alpha = 0.05$ and in the additional variant with the probability close to 90%. What is more, sales revenues are on average lower for employee-owned company operating in the transportation and storage sector, and higher for those operating in the construction sector. It is worth noting that the coefficient of CONST variable may be considered statistically significant with the probability close to 95% only in the additional variant of the estimation, and the coefficient of TRANS variable is statistically significant in both of them at the significance level $\alpha = 0.01$.

The conducted empirical research in relation to variables associated with the ownership concentration revealed in the main variant of the estimation the existence of the negative relation between the degree of ownership concentration and sales revenues that is statistically significant with the probability close to 99%. The occurrence of the negative influence of ownership concentration on sales revenues of the investigated employee-owned companies seem to confirm the results of the estimation of a Cobb–Douglas production function in the additional variant, in which the coefficient of SOC variable is negative and of WOC variable is positive. However, it should be noted that both of these coefficients are not statistically significant, even at the significance level $\alpha = 0.1$ (see Table 4).

Conclusions

The conducted empirical research on the effects of the degree of ownership concentration on sales revenues of employee-owned companies showed that the increase in the degree of ownership concentration leads to the decline in sales revenues, which means that the formulated research hypothesis was verified negatively. In addition, sales revenues within the strong ownership concentration are on average lower and within the weak ownership concentration are on average higher than in other cases, which suggests that to some extent the increase in the degree of ownership concentration in examined employee-owned companies causes the increase in their sales revenues and to some extent it causes the decrease (compare Akimowa & Schwödiauer, 2004, p. 41; Lee, 2008, p. 22).

References

- Akimova, I., & Schwödiauer, G. (2004). Ownership Structure, Corporate Governance and Enterprise Performance: Empirical Results for Ukraine. *International Advances in Economic Research*, 10(1). DOI: <http://dx.doi.org/10.1007/BF02295575>.
- Błaszczuk, B. (2002). Zjawisko wtórnej prywatyzacji – zmiany struktury własnościowej przedsiębiorstw państwowych. In M. Bałtowski (Ed.). *Przedsiębiorstwa sprywatyzowane w gospodarce polskiej*. Warszawa: Wydawnictwo Naukowe PWN.
- Błaszczuk, B., & Woodward, R. (2001). Secondary privatisation: the evolution of ownership structures of privatised enterprises. *Raporty Case*. Warszawa: Centrum Analiz Społeczno-Ekonomicznych, 50. DOI: <http://dx.doi.org/10.2139/ssrn.1432339>.
- Bojar E., Sosińska-Wit M., & Żminda Z. (2003). *Leasing pracowniczy a restrukturyzacja przedsiębiorstw*. Lublin: Politechnika Lubelska.
- Christev, A., & FitzRoy, F. (2001). Employment and Wage Adjustment: Insider-Outsider Control in a Polish Privatization Panel Study. *Journal of Comparative Economics*, 30(2). DOI: <http://dx.doi.org/10.1006/jcec.2002.1775>.
- Conte, M. A., & Svejnar, J. (1988). Productivity Effects of Worker Participation in Management, Profit-Sharing, Worker Ownership of Assets and Unionization in U.S. Firms. *International Journal of Industrial Organization*, 6(1). DOI: [http://dx.doi.org/10.1016/0167-7187\(88\)90011-2](http://dx.doi.org/10.1016/0167-7187(88)90011-2).
- Daraghma, Z. M. A., & Alsinawi, A. A. (2010). Board of Directors, Management Ownership, and Capital Structure and Its Effect on Performance: The Case of Palestine Securities Exchange. *International Journal of Business and Management*, 5(11). DOI: <http://dx.doi.org/10.5539/ijbm.v5n11p118>.
- Estrin, S., Jones, C., & Svejnar, J. (1987). The Productivity Effects of Worker Participation: Producer Cooperatives in Western Economies. *Managerial and Decision Economics*, 11(1). DOI: [http://dx.doi.org/10.1016/0147-5967\(87\)90040-0](http://dx.doi.org/10.1016/0147-5967(87)90040-0).
- Faleye, O., Mehrotra, V., & Morck, R. (2006). When Labour Has a Voice in Corporate Governance. *Journal of Financial and Quantitative Analysis*, 41(3). DOI: <http://dx.doi.org/10.1017/S0022109000002519>.
- Fazlzadeh, A., Hendi, A. T., & Mahboubi, K. (2011). The Examination of the Effect of Ownership Structure on Firm Performance in Listed Firms of Tehran Stock Exchange Based on the Type of the Industry. *International Journal of Business and Management*, 6(3). DOI: <http://dx.doi.org/10.5539/ijbm.v6n3p249>.
- Grosfeld, I., & Nivet, J. (1999). Insider power and wage setting in transition: Evidence from a panel of large Polish firms, 1988–1994. *European Economic Review*, 43(4-6). DOI: [http://dx.doi.org/10.1016/S0014-2921\(98\)00121-4](http://dx.doi.org/10.1016/S0014-2921(98)00121-4).
- Harbaugh, R. (2005). The effect of employee stock ownership on wage and employment bargaining. *Journal of Comparative Economics*, 33(3). DOI: <http://dx.doi.org/10.1016/j.jce.2005.04.002>.

- Jarosz, M., & Kozak, M. (1995). Ekonomiczna i społeczna kondycja spółek pracowniczych w latach 1991–1994. Konkluzje. In M. Jarosz (Ed.). *Blaski i cienie spółek pracowniczych 1991–1994*. Warszawa: Instytut Studiów Politycznych Polskiej Akademii Nauk.
- Jawłowski, A. (2001). *Prywatyzacja pracownicza. Przemiany firm i ich załóg*. Warszawa: Instytut Studiów Politycznych PAN.
- Jelinek, K., & Stuerke, P. (2009). The Non-linear Relation between Agency Costs and Managerial Equity Ownership: Evidence of Decreasing Benefits of Increasing Ownership. *International Journal of Managerial Finance*, 5(2). DOI: <http://dx.doi.org/10.1108/17439130910947886>.
- Jones, D. C. (1993). The Productivity Effects of Employee Ownership Within Command Economies: Evidence from Poland. *Managerial and Decision Economics*, 14(5). DOI: <http://dx.doi.org/10.1002/mde.4090140511>.
- Kapopoulos, P., & Lazaretou, S. (2006). Corporate Ownership Structure and Firm Performance: Evidence from Greek Firms. Bank of Greece. Economic Research Department-Social Studies Division, *Working Paper*, 37. DOI: <http://dx.doi.org/10.1111/j.1467-8683.2007.00551.x>. <http://www.bankofgreece.gr/BogEkdoseis/Paper200637.pdf> (15.12.2016).
- Kim, E. H., & Ouimet, P. (2008). Employee capitalism or corporate socialism? Broad-based employee stock ownership. *AFA 2010 Atlanta Meetings Paper*. DOI: <http://dx.doi.org/10.2139/ssrn.1107974>. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1529631 (09.03.2016).
- Kozarzewski, P. (1998). Prywatyzacja bezpośrednia: stan prawny. In M. Jarosz (Ed.). *Prywatyzacja bezpośrednia. Inwestorzy. Menedżerowie. Pracownicy*. Warszawa: Instytut Studiów Politycznych PAN.
- Kozarzewski, P., & Woodward, R. (2001). Secondary privatization in Poland (Part I): Evolution of ownership structure and company performance in firms privatized by employee buyouts. *Raporty Case*. Warszawa: Centrum Analiz Społeczno-Ekonomicznych, 40. DOI: <http://dx.doi.org/10.2139/ssrn.1432404>.
- Kruse, D. L., Blasi, J. R., & Freeman R. B. (2012). Does Linking Worker Pay to Firm Performance Help the Best Firms Do Even Better?. *NBER Working Paper*, 17745. DOI: [10.3386/w17745](https://doi.org/10.3386/w17745). <http://www.nber.org/papers/w17745> (09.03.2016).
- Lee S. (2008). Ownership Structure and Financial Performance: Evidence from Panel Data of South Korea. University of Utah, Department of Economics, *Working Paper*. 17. <http://www.ccsenet.org/journal/index.php/ijbm/article/viewFile/9717/6980> (09.03.2016).
- Leksykon prywatyzacji* (1998). T. Zwierzyńska–Bubałło (Ed.). Warszawa: PWE.
- Matuszewska–Pierzynka, A. (2014). Zobowiązania inwestycyjne spółek pracowniczych. *Przegląd Organizacji*, 6.
- Matuszewska–Pierzynka, A. (2015a). Kredyty i pożyczki jako źródło finansowania działalności spółek pracowniczych. *Annales Universitatis Mariae Curie–Sklodowska*, sectio H, 49(4). DOI: [10.17951/h.2015.49.4.381](https://doi.org/10.17951/h.2015.49.4.381).

- Matuszewska–Pierzynka, A. (2015b). Net Profit Distribution Policy in Companies Using State–owned Enterprises Against Payment. *Oeconomia Copernicana*, 6(2). DOI: <http://dx.doi.org/10.12775/OeC.2015.014>.
- Matuszewska–Pierzynka, A. (2016a). Zobowiązania socjalne w spółkach pracowniczych. *Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach*, 282/16, Katowice.
- Matuszewska–Pierzynka, A. (2016b). Presja płacowa w spółkach pracowniczych. *Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach*, 263/16, Katowice.
- Rozporządzenie Rady Ministrów z dnia 16 października 1997 r. w sprawie szczegółowych zasad ustalania należności za korzystanie z przedsiębiorstwa, sposobu zabezpieczenia nie spłaconej części należności oraz warunków oprocentowania nie spłaconej należności. Dz U 1997, nr 130, poz. 855.
- Sanchez–Ballesta J., & Garcia–Meca E. (2007). A Meta analytic Vision of the Effect of Ownership Structure on Firm Performance. *Corporate Governance*, 15(5). DOI: <http://dx.doi.org/10.1111/j.1467-8683.2007.00604.x>.
- Sosnowski, T. (2015). Czas realizacji pełnego wyjścia z inwestycji funduszy private equity na GPW w Warszawie. *Annales Universitatis Mariae Curie–Skłodowska*, sectio H, 49(4). DOI: [10.17951/h.2015.49.4.527](https://doi.org/10.17951/h.2015.49.4.527).
- Ustawa z dnia 30 sierpnia 1996 r. o komercjalizacji i prywatyzacji. DzU 2002, nr 171, poz. 1397, z późn. zm.
- Wrońska, E. M. (2004). *Strategie finansowe spółek pracowniczych*. Lublin: Wydawnictwo Uniwersytetu Marii Curie–Skłodowskiej.