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## ПРИОРИТЕТНЫЕ НАПРАВЛЕНИЯ ИННОВАЦИОННОЙ МОДЕРНИЗАЦИИ НАЦИОНАЛЬНОЙ ЭКОНОМИКИ

Рассмотрены теоретические основы инновационной модернизации промышленности как основа устойчивого развития национальной экономики Казахстана. Происходящие перемены в настоящее время во всей системе производственных отношений Казахстана связаны с новым этапом реформирования экономики – обеспечение устойчивого экономического роста на основе индустриально-инновационного развития промышленности.

Ключевые слова: инновационный тип развития, модернизация промышленности, инновационная политика, инновационнотехнологическая модернизация.

УДК 35.073.5 (477) JEL D61, L12, L13

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# **ESTIMATE OF WELFARE LOSS FROMMARKET POWER IN UKRAINIAN ECONOMY**

The article investigates and improves the methodology of estimate of welfare loss from market power. Basing on the improved methodology the author estimates such a loss in Ukrainian economy of 2008-2011.

Keywords: welfare loss; market power.

**Introduction**. Realizing of adverse effect of monopoly or close to monopoly structure of markets to the economy is seen by the works of Aristotle, being a hard fact of current economics. It shifts the attention of recent researchers to the problem of such an adverse effect estimate. For that purpose A. Marshall suggested to use a value of a loss of consumer surplus (later known as a deadweight loss) originated by monopolistic restricting output and price rising [1, p.540]. But the first quantitative estimates of the deadweight loss from monopoly or other degree of market power appeared only a half of the century later. Their results were rather contradictory [2, p.77-87].

The above said explains both the current scientific interest in quantitative assessment of welfare loss from market power and the variety of approaches to its estimate. Using logic of A. Lerner A. Harberger [2, p.77-87], D. Schwartzman [3, p.627-630], D. Worcester [4, p.234-245] estimated the welfare loss with the market power holders' profit margin, K. Cowling and D. Mueller [5, p.727-748] - with the value of profit, A. Dixit i N. Stern [6, p.123-143], A. Daskin [7, p.171-185] - with structural parameters of the market etc. It is only the one face of the problem of variety of approaches to an estimate of welfare loss from market power. Another one exists on the deeper theoretic level where a crucial criterion of existing diversity is not an information base or some kind of indicator, but the essence of welfare loss is. One group of researches, dealing in the tradition of A. Marshall [8, p.191-212], A. Lerner [1, p.536-566], A. Harberger [2, p.77-87], considered that the Harberger triangle was a satisfactory measure of welfare loss. Another group, consisting of G. Tullock [9, p.435-448], R. Posner [10], H. Leibenstein [11, p.447-506], Y. Lee та D. Brown [12], argued about expanding of this category and the value of its estimate as well.

The aim of this article is to optimize the existing theoretic approaches to an estimate of welfare loss from market power into the new approach and to estimate the actual value of welfare loss in Ukrainian economy of 2008-2011, basing on that approach.

**Review of welfare loss estimates evolution.** Let's begin doing this with a review of welfare loss estimates evolution. The pioneer of such an estimate was A. Harberger. He started his research with geometric formula of triangle of the loss of consumer surplus, argued by A. Marshall.

$$WL = \frac{1}{2} \left| \Delta P \Delta Q \right| \tag{1}$$

where  $\Delta P$  – the monopolistic price increase;  $\Delta Q$  – the monopolistic output decrease.

The impossibility and impropriety of such increases measuring by 73 sectors of American manufacturing, investigated by A. Harberger in his world famous work 'Monopoly and Resource Allocation' [2], was clear. So the researcher made some economic and mathematical transformations of the formula (1). Using the Lerner Index and price elasticity of demand he determined the formula (2 a) that became a basic one for his research.

$$WL = \frac{1}{2} PQ\varepsilon m^2 \qquad (2 a)$$

where PQ – the revenue of a firm;  $\varepsilon$  – the price elasticity of demand; m – the profit margin, calculated in the way, explained below.

A. Harberger calculated the deviation of industrial profit rates from the mean one for the whole manufacturing. Then these deviations were transferred into dollars of monopoly rent and expressed as a share of sales to get the monopoly profit margins. Price elasticity of demand was deemed as unit one that transformed (2 a) into (2 b).

$$WL = \frac{1}{2}PQm^2$$
 (2 b)

The sum of per industry welfare losses gave a total value of welfare loss equal to 0.1 % of US GDP [13, p.445].

Notwithstanding a novelty and relevance of Harberger approach to the estimate of welfare loss from market power it was highly criticized. The first reason for the critique was the way of rent calculation using the deviation of industrial profit rates from the mean one for the whole manufacturing. G. Stigler pointed that the level of profit rate in manufacturing was higher than in other sectors of the economy usually. Hence use of Harberger approach led to consistent underestimation of market power impact on the welfare [13, p.445-446]. Comments of K. Cowling and D. Mueller were even more critical. They argued not only against the problem of restriction of the sample, but against the incorrect methodology of analysis. Researchers wrote that there was a classic method of monopoly rent calculation. The rent was calculated by subtracting the normal profit from the value of accounting profit of a firm, while the normal profit was a long-run return in the competitive market, corrected for risk. The mean profit rate, used by A Harberger, was higher than the rate of normal profit, because of including some positive value of economic rent. K. Cowling and D. Mueller called it 'incorporated element of monopoly' [5, p.728].

Another point of Harberger approach critique was a fixing of price elasticity of demand on the unit level in all investigated industries. Such a restriction was irrelevantif no other reasons than because it fixed the price elasticity of demand on the unit point, which was out of the monopoly character. Every textbook on economics shows that a monopoly works only on that part of linear demand curve (precisely linear demand curve was used in the Harberger model) where price elasticity of demand is higher than one [13, p.446]. While increase of price elasticity of demand up to 2, made by D. Schwartzman, didn't result in significant change of welfare loss estimate of A. Harberger and didn't bring us closer to the actual picture of social and economic loss from market power [3, p.627-630]. Price elasticity of demand is a dynamic indicator. Its fixing in a long-run period is unrealistic assumption. At the same time empirical calculating of price elasticity of demand is a really difficult and almost unsolvable task. It makes researches to abandon the use of price elasticity of demand for estimate of welfare loss.

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Such a step was made by K. Cowling and D. Mueller in the end of 1970-s. They used the second part of Lerner Index formula to take price elasticity of demand out of the formula (2 a), saving its effect on the value of welfare loss. The researchers replaced the multiplication of the revenue and profit margin with its result - profit and replaced the second profit margin with inverse of price elasticity of demand. The latter let the price elasticities of demand cancel each other, giving the formula (3).

$$WL = \frac{1}{2}\Pi, \qquad (3)$$

where  $\Pi$  – the economic rent, calculated by subtracting the normal profit for the market / industry from the actual accounting profit of a market power holder [5, p.728-730].

Next estimates of welfare loss expanded such an approach to welfare loss estimatefrom monopoly into easier forms of unperfected competition, first of all - oligopoly. For that purpose the way of transformation formula (2 a) into formula (3) was changed and the inverse of price elasticity of demand was replaced with fraction of market share and price elasticity of demand. The result of such a change was a formula of welfare loss, generated by a member of noncooperative oligopoly:

> $WL_i = \frac{1}{2}\Pi_i \times \mathbf{s}_i$ (4) P MC=AC MR

> > $Q_c$

# where $\Pi_i$ – the economic rent of firm *i*; $s_i$ – the share of firm *i* in the total output of the market.

Following the way of carrying the Lerner Index modifications over to formula of welfare loss estimate, let's include a degree of collusion indicator into the formula (4), making it relevant for cooperative oligopoly too.

$$WL_{i} = \frac{1}{2}\Pi_{i}\left(\mathbf{s}_{i}\left(1-\beta\right)+\beta\right)$$
(5)

where  $\beta$  – the degree of collusion.

For the oligopoly core of the market that is a group of oligopolists, which are operating relatively independent of competitive fringe firms, but cooperatively with each other, the formula of welfare loss estimate looks like this:

$$WL_{k} = \frac{1}{2} \sum_{1}^{k} \prod_{j} \left( \frac{CR_{k}}{100} (1 - \beta) + \beta \right)$$
(6)

where k – the content of oligopoly core of the market, estimated by Linda Index;  $CR_k$  – the concentration ratio for k leaders of the market, which consist the oligopoly core.

One more important step in the evolution of estimate of welfare loss from market power was made by G. Tullock [9, p.435-448] and R. Posner [10]. They argued that Harberger triangle was not a relative measure for the welfare loss. There is also a range of socially wasteful costs of rent-seeking. The firms incur expenses, trying to create, maintain and augment their market power. Those costs can manifest in the investments into excessive capacities, into persuasive advertising or excessive product differentiation and patent protection as the result of the latter. They also can manifestin costs of political support, lobby and bribes. Anyway these costs make the welfare loss bigger than the area of Harberger triangle. The value of the overrun is not a random one. R. Posner argued that firms invested money into rent-seeking until the value of the investments came up to the value of the economic rent. So, welfare loss consists not only of the area of Harberger triangle ( $\Delta MCA$ ), but of the area of whole trapezoid of consumer surplus decrease  $(P_mMCP_c)$  (Figure 1) [10, p.3-4].



Description: P - price; Q - output; D - demand curve; MR - marginal revenue curve; MC=AC - the curve of marginal costs, which are equal to average costs in the model; C - the point of competitive equilibrium; M - the point of monopolistic equilibrium.

\* Source: Posner R. The Social Cost of Monopoly / Richard A. Posner // NBER working paper. – 1974. – No.55. (September). – P. 3-4. Let's revise (5) and  $(6)^1$  in this view, creating the next formulas.

Forthecertainmarket power holder:

0

 $Q_m$ 

$$WL_{i} = \frac{1}{2}\Pi_{i}\left(s_{i}\left(1-\beta\right)+\beta\right)+\Pi_{i}$$
(7 a)

D

Q

<sup>&</sup>lt;sup>1</sup> As degree of collusion change from 0 to 1, covering all the kinds of oligopolistic behavior from a noncooperative equilibrium of Nash-Cournot to a cartel, there is no need for modification of all formulas. It is enough to modify only (5) and (6).

For the group of colluded oligopolists:

$$WL_{k} = \frac{1}{2} \sum_{1}^{k} \Pi_{i} \left( \frac{CR_{k}}{100} (1 - \beta) + \beta \right) + \sum_{1}^{k} \Pi_{i}$$
(7 b)

**The new model of welfare loss estimate.** R. Posner approach is not considered to be perfect or even quite correct. This critique is neither about the way of the estimate of costs of rent-seeking, nor about their including into the value of welfare loss. It is about the graphic model that has become the reason of the underestimate of actual value of welfare loss from market power. In fact the costs of rent seeking are not invested from the profit. Usually they are calculated as expenses being a loss from X-inefficiency, which value is equal to the economic rent from the Figure 2 ( $P_mMAP_c = P_cABP_x$ ).

The new model let us catch on an invisible in R. Posner model increase of Harberger triangle from area of *MAC* to the



asking about the relevant revision of (7 a) and (7 b). As the area of  $P_cAMXP_x$  differs from the area of the depicted by R. Posner trapezoid of welfare loss ( $P_cP_mMC$  at Figure 1) by the area of trapezoid of Harberger triangle increase

area of *MBX*.So, the actual value of welfare loss from market power is described by the area of irregular figure  $P_cAMXP_x$ ,

(ACXB at the Figure 2), the latter must be estimated as:  $ACXB = S_{ACKB} + S_{\Delta CXK} = |\Delta P \times \Delta Q| + S_{\Delta CXK}, \quad (8)$ 

where  $\Delta P$  – the price increase, caused by the market power;  $\Delta Q$  – the output decrease, caused by the market power;  $S_{\Delta CXK}$  – the area of triangle *CXK*.

Figure 2. The Welfare Loss.Correction of R. Posner Model

Description: P and P'– the prices before and after correction of the model; Q – output; D – demand curve; MR and MR' – the marginal revenue curves before and after correction of the model; MC=AC – the curve of marginal costs, which are equal to average costs in the R. Posner model;  $MC_x=AC_x$  – the curve of marginal costs, which are equal to average costs in the corrected model.

\* Source: Created by the author.

Using theformulas1-6let's calculate the first part of (8) as: For the certain market power holder:

$$ACKB = \Pi_i \left( s_i \left( 1 - \beta \right) + \beta \right)$$
 (9 a)

Forthe group of colluded oligopolists:

$$ACKB = \sum_{1}^{k} \prod_{i} \left( \frac{CR_{k}}{100} (1 - \beta) + \beta \right)$$
(9 b)

It let us calculate the part of new Harberger triangle that is depicted by the trapezoid *MCKB*. Thus the only unknown is the value, depicted by the area of the triangle *CXK*. For its estimate let's shift the vertical axis on the Figure 2 from *OP* to  $Q_m P'$ . The model created in such a way is like the model of monopoly equilibrium, where *MD* is the curve of residual demand, *MR'* is the marginal revenue curve relevant to the residual demand, *MAC* is the consumer surplus, *ACKB* is the economic rent of the simulated monopolist, and*CXK* is the Harberger triangle, which is a half of the economic rent according to K. Cowling and D. Mueller. So, the area of *CXK* is a half of area *ACKB*, calculated with (9 a) and (9 b), according on the kind of market equilibrium.

So, the value of welfare loss from the market power is calculated with next formulas.

Forthecertainmarket power holder:

$$WL_{i} = 2\Pi_{i} \left( \mathbf{s}_{i} \left( 1 - \beta \right) + \beta \right) + \Pi_{i}$$
 (10 a)

For the group of colluded oligopolists:

$$WL_{k} = 2\sum_{1}^{k} \Pi_{j} \left( \frac{CR_{k}}{100} (1-\beta) + \beta \right) + \sum_{1}^{k} \Pi_{j}$$
 (10 b)

Empirical estimate of the welfare loss in Ukrainian economy of 2008-2011. Using the 10 b we have researched 135 concentrated industrial markets in Ukraine<sup>2</sup>. The calculated values of the welfare loss per industry have been summed up, giving the aggregate value of welfare loss from market power for the whole Ukrainian economy (table 1).

The data of the table 1 shows that the value of welfare loss, as a cost of market power for the domestic economy, is equal to the quarter of total economic output and the third part of Ukrainian GDP. This value is rather big not only in absolute terms, but even in terms of previous estimates of welfare loss for other economies in the world. The table 2 contains the results of previous estimates of the value of welfare loss for different economies. It shows that such a value fluctuates from 0.01 % to 27.2 % of GDP or total economic output.

<sup>&</sup>lt;sup>2</sup> Starting with a need of separating the welfare loss from market power from other kinds of welfare loss we have taken into the research only the concentrated markets, considering that the low level of market concentration creates the insufficient market power to induce welfare loss. The level of market concentration has been estimated by Herfindal-Hirshman Index. The critical level of market concentration has been set at 1000.

Table	1. Welfare	loss from	market	power in	Ukraine,	2008-2011

Indicator	The average value(per year)
Welfare loss from market power, mln UAH	641 279,31
The share of welfare loss from market power to total economic output in Ukraine, %	25,09
The share of welfare loss from market power to Ukrainian GDP, %	33,17

\* Source: Created by the author on the results of her own estimates using the data of State Statistics Service of Ukraine – Available at: http://www.ukrstat.gov.ua.

Table 2. Empirica	l estimates of t	the welfare loss	from market power
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Researcher,	Investigated	The detabase	The value of welfare loss	
publication year	period	The ualabase	% to total economic output	% to GDP
Harberger A., 1954	1924-1928	US manufacturing	-	0,1
Schwartzman D., 1960	1954	US manufacturing	-	0,1
Kamerschen D., 1966	1954-1961	US manufacturing	-	5,4-7,6
Bell F., 1968	1954	US manufacturing	-	0,02-0,04
Shepherd R., 1972	1960-1969	US manufacturing	-	2-3
Worcester D. (jr), 1973	1958, 1969	US manufacturing	-	0,3
Carson R., 1975	ND	3 sectors of the economy of the USA	-	3,2
Jones J.C.H, Laudadio L.,1978	1965-1967	manufacturing of Canada	-	3,7
Cowling K., Mueller D.C., 1978	1963-1966	economy of the USA	4-13,1	-
Cowling K., Mueller D.C., 1978	1968-1969	economy of Great Britain	3,9-7,2	-
Parker R., Connor J., 1979	1975	food industry of the USA	-	25
Funahashi K., 1982	1980	manufacturing of Japan	-	0,02-3
Jenny F., Weber A., 1983	1971-1974	French economy	-	5,85-12,39
Masson R.T., Shaanan J., 1984	1950-1966	US manufacturing	2,9-11,6	-
Pezzoli, 1985	1982-1983	Italian economy		0,4-9,4
Gisser M., 1986	1977	US manufacturing	-	0,114
Oh SJ., 1986	1983	Korean economy	-	1,16-6,75
Ong'olo D., 1987	1977	manufacturing of Kenya	-	0,26-4,4
Daskin A., 1991	1977	US manufacturing	6,12-27,18	-
Авдашева С., Розанова Н., 1998	1994-1995	production sector of Russia		0,01-10

\* Source: Created by the Avdashev S., Rozanova N. based on the data of [5, p.738-742; 7, p.179-180; 13, p.445-450; 15, p.88; 16, p.323; 17, p.3-5; 18, p.17].

These much lower values of welfare loss were the reason of the weak scientific interest in investigation of such a phenomenon in the middle of the XX century. Even A. Lerner, who is the scientific father of market power effects estimate, didn't believe in importance of negative impact of market power to the economy. This can be said basing on the concentration of his scientific heritage on the problems of socioeconomic consequences of unemployment instead of the problems of an economy's monopolization, as well as on some of his statements about overestimates of the degree of damage done by monopolistic restrictions [19, p.260]. But let's look atthe chronological dynamics of such estimates, incorporated into the intertemporal curve of empirical estimates of welfare loss from market power (Figure 3). It shows that the estimates of the value of welfare loss have been growing over time driven by the development of economic science, the improvement of the methodology of welfare loss estimate and database specification. It makes a modern economist to look much precisely intothe problem of welfare loss and its cost for the economy.



Figure 3. Intertemporal curve of empirical estimates of welfare loss from market power

\* Source: Created by the author based on the data of tables 1 and 2.

**Conclusion.** The main axiom of the economics tells us about the scarceness of the resources. Economic agents

from firms up to the economies are looking for loans to stimulate economic growth while they are wasting up to the third part of their GDP because of ineffective using of existing resources. The calculations show that Ukrainian economy is situated on the halfway toward its production possibility frontier, crying for its leaders' market power restrictionas a ticket to progress, which is called an economic growth. We can invest in innovations, hopping that they move out the quasi production possibility frontier and raise the output at fixed input. We can raise the age of retirement or aggradesand islands to expand the resource base of the economy. But we have to realize that until welfare loss from market power is a third part of the GDP every positive effect of such actions on the economy must be divided in the same proportion. At the best only two thirds of all the efforts and spent resources would go to economic growth stimulation. The remainder would provide the growth of market power holders' prosperity and the rooting of such an institutional environment, which is favorable for preserving the inefficiency of actual economic system in Ukraine.

### References

1. Лернер А.П.Понятие монополии и измерение монопольной власти / Абба П. Лернер // Вехи экономической мысли [в 6 т.] – СПб.: Экономическая школа. – Т.5. Теорияотраслевыхрынков. [сост. А.Слуцкий, С.Авдашева, Р.Питтмен] – 2003. – 670 с. – С.536-566.

2. Harberger A. Monopoly and Resource Allocation / A. Harberger // American Economic Review. – 1954. – Vol.44. – P. 77-87.

3. Schwartzman D. The Burden of Monopoly / D. Schwartzman // Journal of Political Economy. – 1960. – Vol.68. – P.627-630.

4. Worcester D.A. New Estimates of the Welfare Loss to Monopoly: United States 1956-1969 /D.A Worcester // Southern Economic Journal. – 1973. – Vol.40. – P.234-245.

 Cowling K.The Social Costs of Monopoly Power / Keith Cowling and Dennis C. Mueller //The Economic Journal, 1978. – Vol.88. – No.352. – P.727-748.

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Київський національний торговельно-економічний університет, Київ

 Dixit A. Oligopoly and Welfare: A Unified Presentation with Applications to Trade / A. Dixit and N. Stern // European Economic Review. – 1982.
 Vol.19. – Issue 1. – P.123-143.

 Daskin A. Deadweight Loss in Oligopoly: A New Approach / A.Daskin // Southern Economic Journal. 1991. – Vol. 58. – No.1. – Р.171-185.
 Маршалл А. Принципы экономической науки [В 3 т] / Альфред

 маршалл А. Принципы экономической науки [В 3 т] / Альфред Маршалл. – Москва: Прогресс, 1993, Т.1 –416 с.
 Таллок Г. Потери благосостояния от тарифов, монополий и во-

ровства / Гордон Таллок // Вехи экономической мысли [в 6 т.] – СПб.: Экономическая школа. – Т.4. Экономика благосостояния и общественный выбор. [ред. А.Заостровцев] – 2004. – 568 с. – С.435-448.

ный выбор. [ред. А.Заостровцев] – 2004. – 568 с. – С.435-448. 10. Posner R. The Social Cost of Monopoly / RichardA. Posner // NBER working paper. – 1974. – No.55. – 35 p.

11 Лейбенстайн Х. Аллокативная эффективность в сравнении с 2хэффективностью" / Х. Лейбенстайн // Вехи экономической мысли [в 6 т.] – СПб.: Экономическая школа. – Т.2. Теория фирмы. [сост. В. Гальперин] – 1999. – 536 с. – С.447-506.

12. Lee Y. Competition, consumer welfare, and the social cost of monopoly / Y. Lee and D.Brown // Discussion Paper No. 1528, Yale University: Cowles Foundation for Research in Economics, 2006. – 20 р. [Електронний ресурс]. – Режим доступу: http://cowles.econ.yale.edu/P/cd/d15a/d1528.pdf

13. Хэй Д. Теория организации промышленности: В 2т. /Дональд Хэй, Дерек Моррис / Пер. с англ. Под ред. Слуцкого А.Г. – СПб.: Экономическая школа, 1999. –Т.2. – 592 с.

 Офіційний сайт Державної служби статистики України. [Електронний ресурс] – режим доступу: http://www.ukrstat.gov.ua

15. Авдашева С. Теория организации отраслевых рынков: Учебник / С.Б.Авдашева, Н.М.Розанова. – М.: ИЧП "Издательство "Магистр", 1998. – 320 с.

16. Griffits A. Intermediate Microeconomics: Theory and Applications / A.Griffits, S.Wall. – 2-nded. – Harlow: Pearson Education Lmt, 2000. – 725 p.

17. Yao S. Monopoly Innovation and Welfare Effects / S. Yao and L.Gan // Economic Growth centre Working Papers 0609. Nanyang Technolgical University, School of Humanities and Social Sciences, 2006. – 28 p.

 Черненко С.О. Конкуренція та ефективність товарних ринків в Україні: Монографія. – К.: Київ. нац. торг.-екон.ун-т, 2006. –171 с.
 19. Lerner A. The Economics and Politics of Consumer Sovereignty /

19. Lerner A. The Economics and Politics of Consumer Sovereignty / A.P. Lerner //American Economic Review. – 1972. – Vol.62. – P.258-266.

Надійшла до редакції 29.09.13

## ОЦІНКА ВТРАТ ДОБРОБУТУ ВІД РИНКОВОЇ ВЛАДИ В ЕКОНОМІЦІ УКРАЇНИ

В статті досліджено та удосконалено методологію оцінки величини втрат суспільного добробуту, обумовлених ринковою владою. На основі удосконаленої методології здійснено оцінку величини таких втрат для економіки України2008-2011 років. Ключові слова: втрати суспільного добробуту; ринкова влада.

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### ОЦЕНКА ПОТЕРЬ БЛАГОСОСТОЯНИЯ ОТ РЫНОЧНОЙ ВЛАСТИ В ЭКОНОМИКЕ УКРАИНЫ

В статье исследована и усовершенствована методология оценки величины потерь общественного благосостояния, обусловленных рыночной властью. На основе усовершенствованной методологии осуществлена оценка величины таких потерь для экономики Украины 2008-2011 годов.

Ключевые слова: потери общественного благосостояния; рыночная власть.

УДК 336.1 JEL H 71, N 94

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# LOCAL GOVERNMENT TAX COMPETITION IN CZECHOSLOVAKIA 1918-1938

The study evaluates tax competition among local governments in Czechoslovakia during the interwar period. Using correlation and regression analysis it proves that (1) local politicians took into account the tax policies of neighbouring jurisdictions when imposing additional tax rates on top of the direct central taxes, (2) there were some regional differences, (3) migration played its role in tax rate setting and (4) the "race-to-the-bottom" did not take place.

Keywords. Tax competition; local government; Czechoslovakia

**Introduction.** Czechoslovakian local government in the 1920's and 1930's enjoyed significant tax autonomy, in many aspects absolutely unimaginable from today's point of view. Contemporary literature on tax competition confirms, that local government tax policy interaction (i.e., tax mimicking) occurs in most countries and concerns all taxes and all government levels [1, p.4].

The purpose of the paper is to find out if tax mimicking occurred in the pre-war Czechoslovakia and if there was a relationship between local tax policy and migration. After a brief review of recent research on local government tax competition there is provided an overview of the local government tax autonomy in Czechoslovakia between 1918 and 1938 as well as its roots from pre-war Austrian – Hungarian Empire. Then there are presented data, methods