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LOCAL BORROWINGS IN THE SYSTEM OF FISCAL SUPPORT OF URBAN DEVELOPMENT

A purpose of the paper is to research development and the current state of the local borrowings in the system of fiscal support of social and economic development of Ukrainian cities. The author has determined a total amount of the local borrowings in 2003-2015 and indicated the main tendencies of the change of the local borrowings amount. The author has done cluster analysis of local councils of Ukraine, which borrowed funds, taking into account the following criteria: a) a sample for clustering – 38 local councils; b) a set of characteristics selected for estimation of objects (a borrowing amount, a number of borrowings, an average interest rate for borrowed funds, an average term of a loan); c) the Ward's method with the normed value of Euclidean distances. The author has formed five clusters and determined peculiarities of each of them.

Keywords: local debt, local borrowings, external municipal loan bonds, internal municipal loan bonds, cluster analysis.

Financing expenditures of local budgets contemplates usage of a considerable amount of sources. Grants from the state budget and tax revenues constitute the largest share of these sources in the modern phase of development. Nevertheless, such sources contemplate financing current expenditures of local budgets. In order to finance capital expenditures, there is a need to raise other funds (loans).

Dissertations of O. Dukhovna, S. Diachenko, V. Padalka, M. Pasternak, A. Petrykiv, I. Rozputenko, N. Syniutka [1], V. Teliatnykov [2], L. Foksha and scientific articles of M. Haponiuk, O. Kyrylenko, etc., are dedicated to matters of local borrowings and a debt policy of local self-governing bodies.

In Ukraine, development of the institution of a local debt occurred in the middle of the 90^s of the XX century. However, invigoration of the local councils related to putting into practice a credit policy has been occurring since 2003. Dynamics of amounts of local borrowings in Ukraine (Figure 1) indicates absence of a single tendency towards the increase or the decrease of the local debt. At the same time, the state debt tends to increase. An internal market of municipal securities

formed during 2003-2005 (six local councils were issuers). In addition, the local councils placed external municipal loan bonds of the city of Kyiv abroad. In 2007-2008, 2011-2012, and 2014, there were large local borrowings. A total amount of the local borrowings consisting of funds on sales of municipal loan bonds and credits over 2013-2015 accounts for 18 billion of hryvnias. A third of this amount was formed in 2012. It is concerned with financing objects of the Euro 2012 infrastructure.

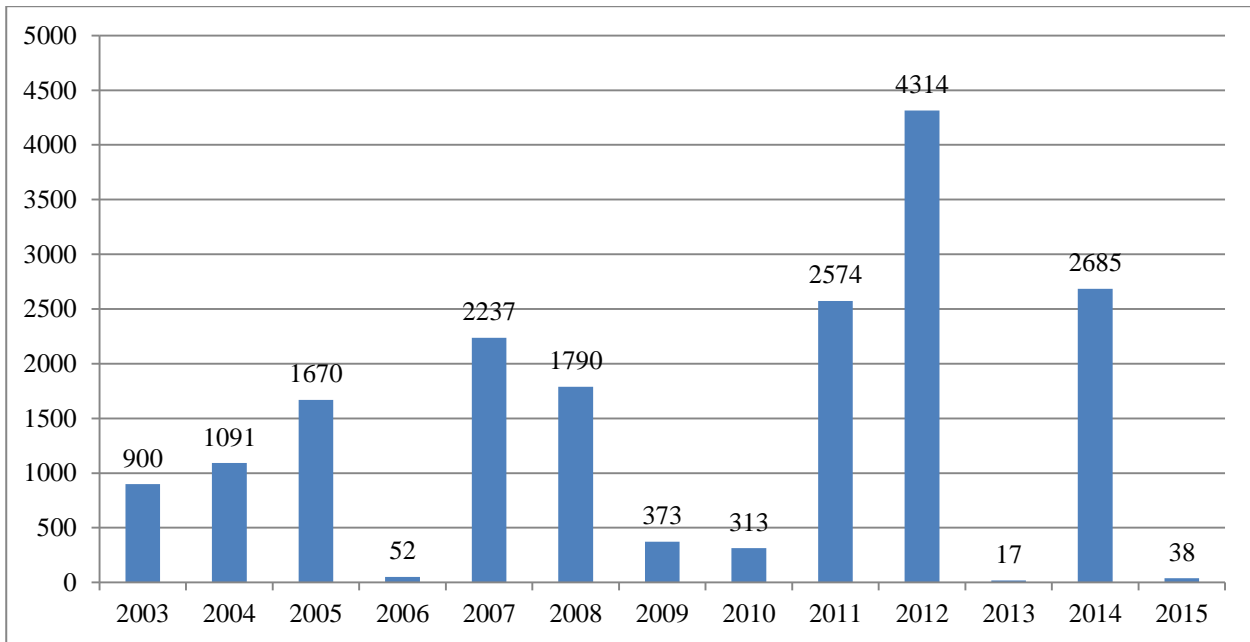


Figure 1. Local borrowings in Ukraine in 2003-2015, million of hryvnias

Source: built by the author according to the data of the Ministry of Finance of Ukraine [3]

It is worth mentioning that all the local councils are eligible for local internal borrowings and external borrowings owing to obtaining credits (loans) from international financial organizations. Only the Kyiv City Council and city councils of cities of regional subordination are eligible for municipal external borrowings. It should be noted that this statement came into force on 1 January 2015 together with entry into force of the Law of Ukraine “On Amendments to the Budget Code of Ukraine regarding the reform of inter-budget relations” of 28 December 2014 No. 79-VIII. For the period 2010-2014, only city councils of cities with a population of more than 300 thousand people was eligible for municipal external borrowings. The Budget Code of Ukraine stated that for the period 2001-2010 only city councils of

cities with a population of more than 800 thousand people was eligible for municipal external borrowings [4]. Therefore, the author indicates a tendency towards the decrease of requirements for enhancement of accessibility to foreign loan capitals.

According to the official data of the Ministry of Finance of Ukraine, 38 city councils placed municipal bonds in 2003-2015. Their practice significantly differs by amounts of borrowings, periodicity, terms, designated purposes, et al.

The author has done cluster analysis of city councils, which borrowed funds, taking into account the following criteria: a) a sample for clustering – 38 local councils; b) a set of characteristics selected for estimation of objects (a borrowing amount, a number of borrowings, an average interest rate for borrowed funds, an average term of a loan); c) the Ward's method with the normed value of Euclidean distances (Table 1 and Figure 2).

Table 1

Results of hierarchic clustering of city councils based on the Ward's method

Stage	Joint clusters		Square Euclidean distance	Stage, where a cluster emerges at first		Next stage
	1	2		1	2	
1	Chernivtsi	Kolomyia	0.00002	0	0	2
2	Berdychiv	Chernivtsi	0.0001	0	1	4
3	Dolyna	Myrhorod	0.0003	0	0	6
4	Berdychiv	Pavlohrad	0.0006	2	0	5
5	Slavutyich	Berdychiv	0.0009	0	4	8
6	Dolyna	Horlivka	0.001	3	0	28
7	Chernihiv	Konotop	0.002	0	0	17
8	Slavutyich	Baranivka	0.003	5	0	31
9	Sumy	Luhansk	0.08	0	0	14
10	Sievierodonetsk	Berdiansk	0.22	0	0	25
11	Komsomolsk	Cherkasy	0.50	0	0	15
12	Kamianets-Podilskyi	Kremenchuk	0.79	0	0	20
13	Lutsk	Zaporizhzhia	1.08	0	0	21
14	Sumy	Boryspil	1.39	9	0	23
15	Komsomolsk	Mykolaiv	1.76	11	0	27
16	Kovel	Smila	2.13	0	0	30
17	Ivano-Frankivsk	Chernihiv	2.50	0	7	28
18	Illichivsk	Brovary	2.90	0	0	30
19	Dnipropetrovsk	Kramatorsk	3.31	0	0	27
20	Melitopol	Kamianets-Podilsk	3.71	0	12	29
21	Lutsk	Lviv	4.16	13	0	24
22	Kharkiv	Odesa	4.62	0	0	26

23	Sumy	Donetsk	5.12	14	0	25
24	Lutsyk	Vynnytsia	5.75	21	0	26
25	Sumy	Sievierodonetsk	6.41	23	10	33
26	Lutsyk	Kharkiv	7.16	24	22	0
27	Komsomolsk	Dnipropetrovsk	7.91	15	19	29
28	Ivano-Frankivsk	Dolyna	8.85	17	6	31
29	Komsomolsk	Melitopol	10.01	27	20	32
30	Illichivsk	Kovel	11.67	18	16	32
31	Slavutyeh	Ivano-Frankivsk	13.57	8	28	0
32	Komsomolsk	Illichivsk	15.88	29	30	0
33	Sumy	Zhytomyr	18.28	25	0	0

Source: built by the author according to the data of the Ministry of Finance of Ukraine [3]

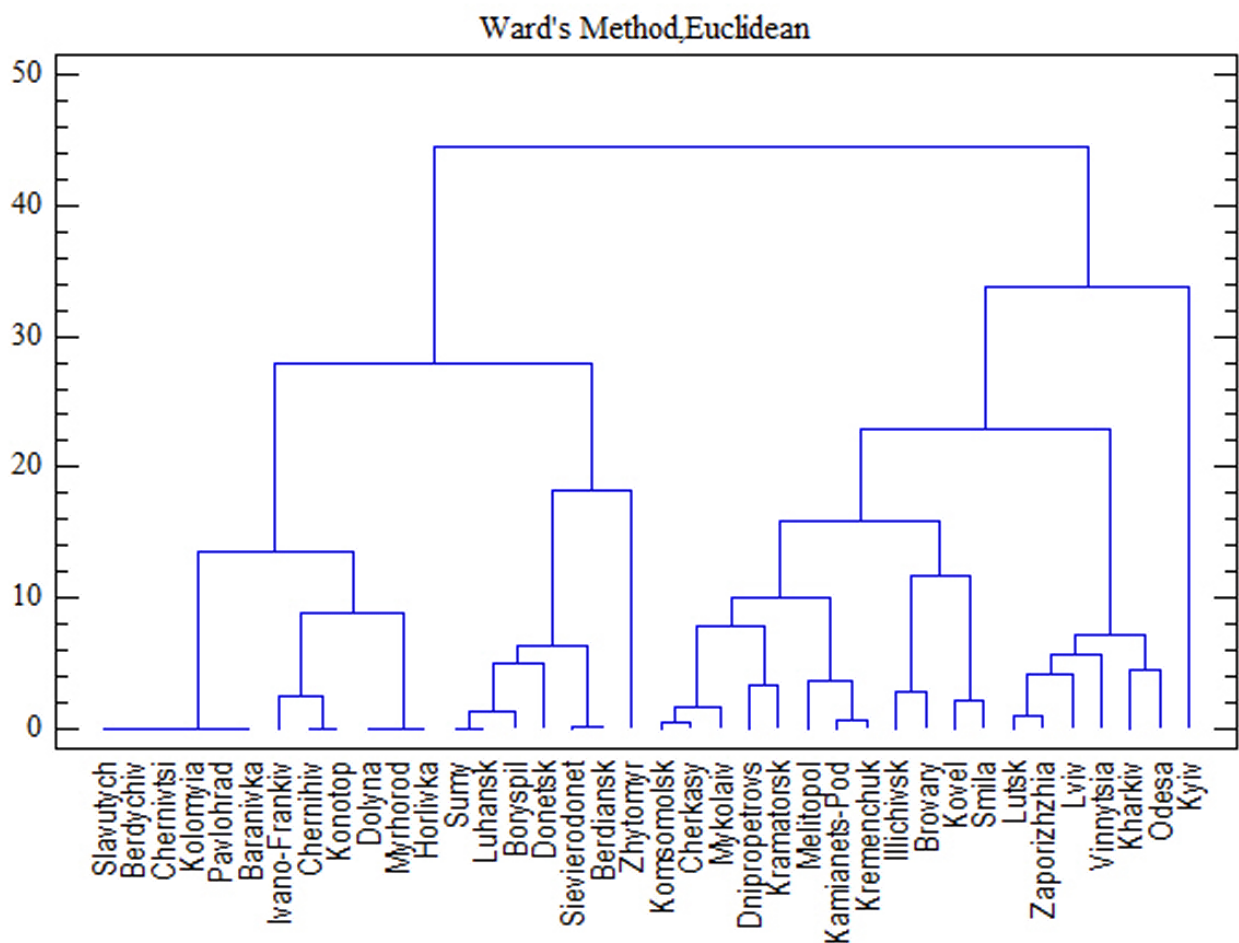


Figure 2. Dendrogram (a tree-structured graph) of local debts of Ukrainian cities

Source: built by the author

The first step is the first stage, where the data of Chernivtsi ra Kolomyia are combined. A distance between them is 0.00002. Each succeeding step, on the analogy, consists in clustering regions. According to four variables, the degrees of

similarity between Berdychiv and Chernivtsi (0,0001), Dolyna and Myrhorod (0,0003), Berdychiv and Pavlohrad (0,0006), Slavutych and Berdychiv (0,0009), Dolyna and Horlivka (0,001), Chernihiv and Konotop (0,002) are the highest.

As can be seen in Figure 2, cities of Ukraine form five clusters by absolute and relative figures of a local budget.

The first cluster contains 12 cities (Slavutych, Berdychiv, Chernivtsi, Kolomyia, Pavlohrad, Baranivka, Ivano-Frankivsk, Chernihiv, Konotop, Dolyna, Horlivka, Myrhorod – cities of regional subordination mainly). Common features of the 1st cluster cities are single borrowing, a similar interest rate, and insignificant amounts of borrowings. It should be noted that under such terms several cities obtained credits from NEFCO (Nordic Environment Finance Corporation) for a period of 5 years at a 3% rate: 2012 (Horlivka, Pavlohrad, Konotop), 2013 (Baranivka, Chernihiv, Ivano-Frankivsk, Dolyna), 2014 (Myrhorod, Ivano-Frankivsk, Konotop), 2015 (Slavutych, Berdychiv, Chernivtsi, Kolomyia).

The second cluster contains 12 cities, which take out medium-term loans at increased interest rates (an average interest rate for the cluster – 17% per annum). The cluster consists of Komsomolsk, Cherkasy, Mykolaiv, Dnipropetrovsk, Kramatorsk, Melitopol, Kamianets-Podilsk, Kremenchuk, Illichivsk, Brovary, Kovel, Smila. The main feature of this cluster is a high interest rate: Brovary obtained a credit in 2009 at 20% per annum and in 2010 at 25% per annum; Smila obtained a credit in 2009 at 26% per annum; Kovel obtained a credit in 2009 at 28% per annum.

The third cluster consists of 7 cities (Sumy, Luhansk, Boryspil, Donetsk, Sievierodonetsk, Berdiansk, Zhytomyr), which obtained long-term credits more than once (an average term of a credit exceeds 5 years). 5-year municipal loan bonds were issued by Luhansk (2007, 2008), Sumy (2009), Boryspil (2008), Donetsk (2005, 2008, 2009), Sievierodonetsk (2007), Berdiansk (2007). In 2014, Zhytomyr obtained a credit from NEFCO for a period of 10 years.

The fourth cluster includes cities, which put into practice an active debt policy owing to a large number of obtained credits and formation of large amounts of funds. There are solely administrative centers of regions – Lutsk, Zaporizhzhia, Lviv,

Vinnytsia, Kharkiv, Odesa, which use all possible sources of loans (internal municipal loan bonds, credits of commercial banks and international financial and credit organizations).

The fifth cluster is presented by Kyiv, which accumulated approximately 80% of all the local borrowings during 2003-2015. In 2003-2005, the Kyiv City Council issued bonds of external and internal loans. In 2007, it obtained a credit from a foreign financial institution. In 2008, 2012, and 2014, it issued internal loan bonds. In 2011, it issued external loan bonds. It is worth mentioning that the Kyiv City Council did not partially hold to terms of credit agreements. In addition, it cannot reimburse the local debt entirely and on time.

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