

Project HURO/1001/293/2.2.3, acronyms LEDIRE

*Levy distributions for the study of predictability indicators, with impact on regional development*

## **THE RESEARCH REPORTS OF EXPERTS FROM THE PARTIUM CHRISTIAN UNIVERSITY**



Hungary-Romania  
Cross-Border Co-operation  
Programme 2007-2013

European Union  
European Regional Development Fund



Two countries, one goal, joint success!

The ten companies from Hajdu Bihar county that are subject of research reports, were selected by the project partner Chamber of Commerce and Industry of Hajdú-Bihar County, if they cumulatively reached two of the following criteria:

- Total assets > 3.65 million euro
- Turnover > 7,300,000
- No. of employees > 50

The ten selected companies from Hajdu Bihar county operate in construction, industry, transport and trade sector.

We use the application developed by Buciu Ioan, lecturer in the course *Using filters for economic prediction*, organized within the project ***Levy distributions for the study of predictability indicators, with impact on regional development***, which consists in the Matlab implementation of the three variants of the Kalman filtering: estimation, prediction and smoothing. The source code is provided in the function “*kalman\_f.m*”, while the practical implementation is provided in the file “*test\_kalman.m*”.

The dataset used consists of annual observations and the analyzed period is 2007-2011.

## 1. Research report on company A and company H

*Author: Pajzos Csaba*

The company A operate in the industrial production and is located in Hajdú-Bihar county.

Data are in thousand forints

Indicators/Year	2007	2008	2009	2010	2011
Turnover	21440000	22857000	16272000	24591000	29862000
Net income	-2366257	-366343	-1714357	162230	-645405
Operating profit	-1413794	-365548	-1668802	67314	-707318
EBIT	-1339744	845957	129436	1490667	447053
L	2,613	2,948	4,049	3,755	4,026
R <sub>FE</sub>	-0,510	-3,160	-1,108	19,255	-1,434
R <sub>DF</sub>	0,198	0,080	0,000	0,000	0,000
R <sub>LG</sub>	0,385	0,314	0,346	0,359	0,274
R <sub>LR</sub>	0,221	0,216	0,275	0,273	0,176
ROA	-0,054	0,034	0,006	0,066	0,020
ROE	-0,363	-0,060	-0,386	0,035	-0,154
Dr	52,279	49,720	106,470	65,230	31,067
Dst	43,187	27,554	28,715	21,962	20,112

Da	0,866	0,910	0,701	1,082	1,360
----	-------	-------	-------	-------	-------

**Table no. 5.6.1. Evolution of the main indicators of the company A in the period 2007-2011**

From the table 5.6.1., we see that the leverage ratio is with more than one and the rate financial debts recorded very low values, which shows that the company is dependent on external sources of short-term.

General liquidity ratio and the current liquidity ratio recorded values less than 1, reflecting the fact that Company A is unable to pay its short-term debts only from current assets owned. ROE and ROA were recorded low values, so we can say that the activity within the company wasn't very efficient in term to fructification equity and total assets. The average duration of collection of receivables is high, but shows a decreasing trend, and the rotational speed of fixed assets by the turnover is good in 2010 and 2011, which is a good of the company. The average length of stocks rotation recorded good and decreasing values.

From the table 5.6.2, we note that, in the period 2007-2011, the turnover stood in the range [16272.000, 29.862.000], with an average of 23.004.400 thousand HUF and a low coefficient of variation, which shows that there are low variations in turnover, so a predictability of turnover is high.

The leverage ratio stood in the range [2,613109, 4,04889], with an average of 3,478197 and a very low coefficient of variation, which shows that there are very low variations in L, so a predictability of L is very high.

Indicators	Average	Minimum	Maximum	Standard deviation	Coefficient of variation
<b>Turnover</b>	23004400	16272000	29862000	4933008	0,214438
<b>EBIT</b>	314673,8	-1339744	1490667	1055244	3,353453
<b>L</b>	3,478197	2,613109	4,04889	0,65806	0,189196
<b>R<sub>LG</sub></b>	0,33557	0,273837	0,384976	0,042996	0,128127
<b>ROA</b>	0,014221	-0,05412	0,065617	0,044165	3,10558
<b>ROE</b>	-0,18544	-0,38594	0,035235	0,185188	-0,99865

**Table no. 5.6.2.**

The highest volatility in the period 2007-2011 is register by EBIT and ROA, which shows that there are very large variations in ROA and EBIT and predictability of ROA and EBIT is very low. The lowest volatility in the period 2007-2011 is register by R<sub>LG</sub>, which shows that predictability of R<sub>LG</sub> is very high.

The company H operate in the construction materials trade and is located in Hajdú-Bihar county.

Data are in thousand forints

Indicators/Year	2007	2008	2009	2010	2011
<b>Turnover</b>	10645577	9046721	7924508	12412157	11226521
<b>Net income</b>	1943	189665	181463	871982	274399
<b>Operating profit</b>	4842	380719	670150	1242958	581816
<b>EBIT</b>	558001	932091	245842	1317835	1123935
<b>L</b>	5,455	5,489	2,642	2,294	1,757
<b>R<sub>FE</sub></b>	82,670	1,198	0,324	0,182	0,336
<b>R<sub>DF</sub></b>	0,772	0,755	0,568	0,468	0,467
<b>R<sub>LG</sub></b>	1,536	0,898	1,342	1,248	1,540
<b>R<sub>LR</sub></b>	1,347	0,804	1,196	1,189	1,414
<b>ROA</b>	0,044	0,066	0,021	0,095	0,089
<b>ROE</b>	0,001	0,093	0,059	0,215	0,063
<b>Dr</b>	74,718	111,462	128,547	137,880	117,470
<b>Dst</b>	24,930	18,581	27,340	9,806	15,620
<b>Da</b>	0,832	0,641	0,683	0,896	0,889

**Table no. 5.6.3. Evolution of the main indicators of the company H in the period 2007-2011**

From the table 5.6.3., we see that the leverage ratio is with more than one and the rate financial debts recorded high values, but both indicators show a deceasing tendency, which is good for the company.

General liquidity ratio and the current liquidity ratio recorded values more than 1, reflecting the fact that Company H is able to pay its short-term debts only from current assets owned. ROE and ROA recorded high values, so we can say that the activity within the company was efficient in term to fructification equity and total assets in the the entire period analyzed. The average duration of collection of receivables is very high, even if shows a decreasing trend. The average length of stocks rotation recorded optimal values. From 2011, began to improve the above indicators, which is positive and shows that are growing trends for company H.

From the table 5.6.4, we note that, in the period 2007-2011, the turnover stood in the range [7.924.508, 12.412.157], with an average of 10.251.097 thousand HUF and a very low coefficient of variation, which shows that there are low variations in turnover, so a predictability of turnover is very high.

Indicators	Average	Minimum	Maximum	Standard deviation	Coefficient of variation
Turnover	10251097	7924508	12412157	1777694	0,173415
EBIT	835540,8	245842	1317835	432976,3	0,518199
L	3,527381	1,756605	5,489434	1,803063	0,511162
RLG	1,312714	0,897982	1,539634	0,263918	0,201047
ROA	0,062992	0,021176	0,095147	0,030996	0,492054
ROE	0,086348	0,001049	0,215236	0,079367	0,919155

**Table no. 5.6.4.**

The leverage ratio stood in the range [1,756605, 5,489434], with an average of 3,527381 and a relatively low coefficient of variation, which shows that there are low variations in L, so a predictability of L is high. The highest volatility in the period 2007-2011 is register by ROE, which shows that there are very large variations in ROE and predictability of ROE is very low.

## 2. Research report on company B and company C

*Author: Szilágyi Ferenc*

The companies B and C operate in the construction sector and are located in Hajdú-Bihar county.

Data are in thousand forints

Indicators/Year	2007	2008	2009	2010	2011
Turnover	5457812	8475178	5093159	9413476	5598060
Net income	150673	171677	214228	427152	195510
Operating profit	152928	211544	248193	545283	245925
EBIT	124670	125755	67703	648163	-25820
L	2,680	2,036	1,710	1,585	1,005
R <sub>FE</sub>	1,172	1,103	0,737	0,195	0,410
R <sub>DF</sub>	0,014	0,006	0,000	0,150	0,173
R <sub>LG</sub>	1,981	1,129	1,057	1,173	1,426
R <sub>LR</sub>	0,935	1,061	0,762	0,975	1,168
ROA	0,012	0,014	0,008	0,072	-0,004
ROE	0,053	0,058	0,072	0,129	0,059
Dr	450,879	260,917	213,865	135,184	161,930
Dst	531,523	17,601	107,790	35,836	44,520
Da	0,514	0,912	0,626	1,047	0,788

**Table no. 5.7.1. Evolution of the main indicators of the company B in the period 2007-2011**

From the table 5.7.1., we see that the leverage ratio is with more than one even if shows a decreasing tendency and the rate financial debts recorded low values which shows that the company is dependent on external sources of short-term.

General liquidity ratio and the current liquidity ratio recorded values more than 1 and shows a increasing tendency, reflecting the fact that Company B is able to pay its short-term debts only from current assets owned. ROE was recorded good values, so we can say that the activity within the company was efficient in term to fructification equity. The average duration of collection of receivables is very high, which is a weekness of the company. The average length of stocks rotation recorded good and decreasing values.

<b>Indicators</b>	<b>Average</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Standard deviation</b>	<b>Coefficient of variation</b>
<b>Turnover</b>	6807537	5093159	9413476	1987186	0,29191
<b>EBIT</b>	188094,2	-25820	648163	264492,6	1,406171
<b>L</b>	1,803238	1,005269	2,679803	0,615605	0,341389
<b>R<sub>LG</sub></b>	0,98009	0,761629	1,168003	0,151412	0,154488
<b>ROA</b>	0,020408	-0,00363	0,072096	0,029659	1,45329
<b>ROE</b>	0,074125	0,052856	0,129183	0,031586	0,426122

**Table no. 5.7.2.**

From the table 5.7.2, we note that, in the period 2007-2011, the turnover stood in the range [5.093.159, 9.413.476], with an average of 6.807.537 thousand HUF and a low coefficient of variation, which shows that there are low variations in turnover, so a predictability of turnover is high. The leverage ratio stood in the range [1,005269, 2,679803], with an average of 1,803238 and a low coefficient of variation, which shows that there are low variations in L, so a predictability of L is high.

The highest volatility in the period 2007-2011 is register by EBIT and ROA, which shows that there are very large variations in ROA and EBIT and predictability of ROA and EBIT is very low. The lowest volatility in the period 2007-2011 is register by R<sub>LG</sub>, which shows that predictability of R<sub>LG</sub> is very high.

From the table 5.7.3., we see that the leverage ratio is with more than one and and the rate financial debts recorded low values, which shows that the company is dependent on external sources of short-term and it hasn't financial autonomy.

Data are in thousand forints

Indicators/Year	2007	2008	2009	2010	2011
Turnover	2027268	2212356	2167617	1734547	2287355
Net income	3347	8690	14870	3716	5530
Operating profit	13033	11034	15142	2878	5892
EBIT	55082	20541	46719	-37178	-11485
L	2,238	1,573	2,571	1,574	1,907
R <sub>FE</sub>	3,008	1,952	2,123	8,151	3,320
R <sub>DF</sub>	0,249	0,128	0,000	0,216	0,152
R <sub>LG</sub>	0,990	0,939	0,937	0,900	1,008
R <sub>LR</sub>	0,857	0,729	0,652	0,351	0,859
ROA	0,050	0,022	0,036	-0,040	-0,010
ROE	0,010	0,026	0,043	0,011	0,015
Dr	87,426	52,023	73,464	32,636	49,254
Dst	14,877	16,571	43,143	52,953	14,723
Da	1,836	2,416	1,673	1,845	2,065

**Table no. 5.7.3. Evolution of the main indicators of the company C in the period 2007-2011**

General liquidity ratio and the current liquidity ratio recorded values close to 1, reflecting the fact that Company C is able to pay its short-term debts only from current assets owned. ROE and ROA were recorded low values in the last two years, so we can say that the activity within the company wasn't efficient in term to fructification equity and total assets. The average duration of collection of receivables is a little high, which is bad for the company. The average length of stocks rotation recorded good values. From 2011, began to improve financial and economic indicators in the table above, which is positive and shows that are growing trends for company C.

Indicators	Average	Minimum	Maximum	Standard deviation	Coefficient of variation
Turnover	2085829	1734547	2287355	218025	0,104527
EBIT	14735,8	-37178	55082	38945,52	2,642919
L	1,972443	1,572761	2,570769	0,433389	0,219722
R <sub>LG</sub>	0,954749	0,89957	1,007621	0,043723	0,045796
ROA	0,011694	-0,03955	0,049885	0,036334	3,107024
ROE	0,020933	0,010263	0,042524	0,013641	0,651661

**Table no. 5.7.4.**

From the table 5.7.4, we note that, in the period 2007-2011, the turnover stood in the range [1.734.547, 22.873.55], with an average of 2.085.829 thousand HUF and a very low coefficient of variation, which shows that there are low variations in turnover, so a predictability of turnover is very high.

The leverage ratio stood in the range [1,572761, 2,570769], with an average of 1,972443 and a low coefficient of variation, which shows that there are low variations in L, so a predictability of L is high.

The highest volatility in the period 2007-2011 is register by ROA and EBIT, which shows that there are very large variations in ROA and EBIT and predictability of ROA and EBIT is very low. The lowest volatility in the period 2007-2011 is register by  $R_{LG}$ , which shows that predictability of  $R_{LG}$  is very high.

### 3. Research report on company D and company F

*Author: Izsák Hajnalka*

The companies D and F operate in the industry sector and are located in Hajdú-Bihar county.

From the table 5.8.1., we see that the leverage ratio is very high, more than one and the rate financial debts recorded values more than 0,5, which shows that the company is dependent on external sources of short-term and it hasn't financial autonomy. Financial expenses ration is very high and shows an increasing trend, reflecting that the company faces a high risk of insolvency.

Data are in thousand forints

Indicators/Year	2007	2008	2009	2010	2011
<b>Turnover</b>	7753734	8163998	6947453	6804953	12989517
<b>Net income</b>	540896	740453	748865	303113	240833
<b>Operating profit</b>	590231	781919	748990	333349	254345
<b>EBIT</b>	116046	452811	434563	157506	84372
<b>L</b>	1,057	2,034	3,641	5,792	18,694
<b><math>R_{FE}</math></b>	0,233	0,252	0,330	0,546	1,069
<b><math>R_{DF}</math></b>	0,393	0,553	0,699	0,802	0,888
<b><math>R_{LG}</math></b>	1,653	2,530	1,171	2,410	1,512
<b><math>R_{LR}</math></b>	0,628	1,459	0,429	1,688	1,279
<b>ROA</b>	0,022	0,084	0,093	0,034	0,010
<b>ROE</b>	0,218	0,437	0,791	0,471	0,598
<b>Dr</b>	0,868	82,797	7,597	90,498	140,495
<b>Dst</b>	49,096	64,567	48,632	43,749	28,360
<b>Da</b>	1,489	1,514	1,488	1,473	1,557

**Table no 5.8.1. Evolution of the main indicators of the company D in the period 2007-2011**

General liquidity ratio and the current liquidity ratio recorded values more than 1, reflecting the fact that Company D is able to pay its short-term debts only from current assets owned. ROE was recorded good values in the last three years, so we can say that the activity within the company was efficient in term to fructification equity. The average duration of collection of receivables is high, reflecting that the company may face a lack of liquidity due to not collecting receivables. The average length of stocks rotation and the rotational speed of fixed assets by the turnover recorded good values.

From the table 5.8.2, we note that, in the period 2007-2011, the turnover stood in the range [6.804.953, 12.989.517], with an average of 8.531.931 thousand HUF and a low coefficient of variation, which shows that there are low variations in turnover, so a predictability of turnover is high.

<b>Indicators</b>	<b>Average</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Standard deviation</b>	<b>Coefficient of variation</b>
<b>Turnover</b>	8531931	6804953	12989517	2554607	0,299417
<b>EBIT</b>	249059,6	84372	452811	179668,3	0,721387
<b>L</b>	6,243537	1,056938	18,69389	7,186968	1,151105
<b>R<sub>LG</sub></b>	1,855256	1,170854	2,529717	0,589506	0,317749
<b>ROA</b>	0,048708	0,010116	0,093059	0,037458	0,76903
<b>ROE</b>	0,502913	0,21844	0,79089	0,211105	0,419766

**Table no. 5.8.2**

The leverage ratio stood in the range [1,056938, 18,69389], with an average of 6,243537 and a high coefficient of variation, which shows that there are high variations in L, so a predictability of L is low.

A low volatility in the period 2007-2011 is register by ROE and R<sub>LG</sub>, which shows that there are small variations in ROE and R<sub>LG</sub> and predictability of ROE and R<sub>LG</sub> are high.

From the table 5.8.3., we see that the leverage ratio is high, more than one but the rate financial debts recorded values less than 0,5, which shows that the company is dependent on external sources of short-term and it hasn't financial autonomy. General liquidity ratio and the current liquidity ratio recorded good values, reflecting the fact that Company F is able to pay its short-term debts only from current assets owned. ROA and ROE recorded good values on the entire period analyzed, so we can say that the activity within the company was efficient in term to fructification equity and total assets.

Data are in thousand forints

Indicators/Year	2007	2008	2009	2010	2011
Turnover	1360722	1401055	3766892	3677022	4243157
Net income	342272	177268	206671	252206	308842
Operating profit	371286	175726	163200	229656	271106
EBIT	448936	164007	335172	380018	611444
L	0,997	1,208	1,294	0,972	1,123
R <sub>FE</sub>	0,181	0,178	0,857	0,566	0,582
R <sub>DF</sub>	0,020	0,245	0,446	0,380	0,391
R <sub>LG</sub>	0,966	0,867	1,574	2,212	1,444
R <sub>LR</sub>	0,706	0,469	1,025	1,279	0,713
ROA	0,207	0,029	0,046	0,049	0,068
ROE	0,334	0,074	0,066	0,066	0,076
Dr	96,005	211,559	90,913	106,877	98,722
Dst	69,835	218,322	81,205	126,515	122,938
Da	0,626	0,248	0,516	0,472	0,475

**Table no. 5.8.3. Evolution of the main indicators of the company F in the period 2007-2011**

The average duration of receivables collection and the average length of stocks rotation are high, reflecting that the company may face a lack of liquidity due to not collecting receivables.

Indicators	Average	Minimum	Maximum	Standard deviation	Coefficient of variation
Turnover	2889770	1360722	4243157	1394187	0,482456
EBIT	387915,4	164007	611444	163300,1	0,420968
L	1,119004	0,972464	1,294024	0,136916	0,122355
R <sub>LG</sub>	1,412658	0,866728	2,212478	0,539522	0,381919
ROA	0,079732	0,029061	0,206518	0,072238	0,906002
ROE	0,123335	0,066217	0,333853	0,117766	0,954847

**Table no. 5.8.4.**

From the table 5.8.4, we note that, in the period 2007-2011, the turnover stood in the range [1.360.722, 4.243.157], with an average of 2.889.770 thousand HUF and a low coefficient of variation, which shows that there are low variations in turnover, so a predictability of turnover is high.

The leverage ratio stood in the range [0,972464, 1,294024], with an average of 1,119004 and a low coefficient of variation, which shows that there are small variations in L, so a predictability of L is high.

A high volatility in the period 2007-2011 is registered by ROE and ROA, which shows that there are large variations in ROE and ROA and predictability of ROE and ROA are low.

#### 4. Research report on company E and company G

*Author: Péter Andrei*

The companies E and G operate in the food-processing industry and are located in Hajdú-Bihar county.

Data are in thousand forints

Indicators/Year	2007	2008	2009	2010	2011
Turnover	1664458	2102551	2424937	2718432	2556789
Net income	12834	52122	20431	47785	-31266
Operating profit	25255	64845	29318	57711	-26130
EBIT	42707	87756	60968	99481	2693
L	1,026	1,078	0,966	1,007	1,377
R <sub>FE</sub>	0,696	0,365	0,946	0,432	-1,012
R <sub>DF</sub>	0,269	0,245	0,284	0,356	0,365
R <sub>LG</sub>	1,202	1,370	1,826	2,427	1,764
R <sub>LR</sub>	1,045	1,271	1,670	2,390	1,632
ROA	0,047	0,085	0,060	0,091	0,002
ROE	0,029	0,105	0,040	0,089	-0,062
Dr	58,066	66,311	58,414	66,400	88,902
Dst	10,033	6,397	6,890	1,234	7,710
Da	1,844	2,036	2,383	2,493	2,117

**Table no. 5.9.1. Evolution of the main indicators of the company E in the period 2007-2011**

From the table 5.9.1., we see that the leverage ratio is very high, more than one and the rate financial debts recorded values less than 0,5, which shows that the company is dependent on external sources of short-term and it hasn't financial autonomy. General liquidity ratio and the current liquidity ratio recorded good values, more than 1, reflecting the fact that Company E is able to pay its short-term debts only from current assets owned. ROA and ROE recorded good values until 2011, so we can say that the activity within the company was efficient in term to fructification equity and total assets.

The average duration of collection of receivables is relatively high, reflecting that the company may face a lack of liquidity due to not collecting receivables. The average length of stocks rotation and the rotational speed of fixed assets by the turnover recorded very good values.

We note that, in 2011, the company didn't record activity levels from previous years in terms of performance, which is a warning sign of possible problems existing in the company E.

From the table 5.9.2, we note that, in the period 2007-2011, the turnover stood in the range [1.664.458, 2.718.432], with an average of 2.293.433 thousand HUF and a low coefficient of variation, which shows that there are low variations in turnover, so a predictability of turnover is high.

<b>Indicators</b>	<b>Average</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Standard deviation</b>	<b>Coefficient of variation</b>
<b>Turnover</b>	2293433	1664458	2718432	418126,6	0,182315
<b>EBIT</b>	58721	2693	99481	38422,14	0,654317
<b>L</b>	1,090668	0,965556	1,377068	0,165094	0,151369
<b>R<sub>LG</sub></b>	1,717931	1,202125	2,427285	0,475352	0,2767
<b>ROA</b>	0,05713	0,00223	0,09122	0,03555	0,622263
<b>ROE</b>	0,04017	-0,06158	0,105212	0,065308	1,625811

**Table no. 5.9.2.**

The leverage ratio stood in the range [0,965556, 1,377068], with an average of 1,090668 and a low coefficient of variation, which shows that there are small variations in L, so a predictability of L is high. A low volatility in the period 2007-2011 is register by R<sub>LG</sub>, which shows that there are small variations in R<sub>LG</sub> and predictability of R<sub>LG</sub> are high.

A high volatility in the period 2007-2011 is register by ROE, which shows that there are large variations in ROE and predictability of ROE are low.

From the table 5.9.3., we see that the leverage ratio is very high, more than one and the rate financial debts recorded small values, less than 0,5, which shows that the company is dependent on external sources of short-term and it hasn't financial autonomy.

Data are in thousand forints

<b>Indicators/Year</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
<b>Turnover</b>	6939081	7180356	6465609	6898656	7951494
<b>Net income</b>	33072	45016	30849	64678	147405
<b>Operating profit</b>	39469	57068	36653	99674	179575
<b>EBIT</b>	69824	75533	53592	94776	195737
<b>L</b>	1,725	1,602	1,544	1,362	1,124
<b>R<sub>FE</sub></b>	1,696	1,016	1,349	0,407	0,279
<b>R<sub>DF</sub></b>	0,084	0,062	0,077	0,062	0,066

<b>R<sub>LG</sub></b>	0,887	0,842	0,871	0,850	0,628
<b>R<sub>LR</sub></b>	0,545	0,477	0,474	0,466	0,627
<b>ROA</b>	0,019	0,022	0,016	0,029	0,058
<b>ROE</b>	0,030	0,040	0,028	0,055	0,111
<b>Dr</b>	43,306	40,920	38,887	32,773	37,307
<b>Dst</b>	32,144	32,268	36,404	31,035	0,056
<b>Da</b>	1,894	2,071	1,974	2,126	2,371

**Table no. 5.9.3. Evolution of main indicators of company G in the period 2007-2011**

General liquidity ratio and the current liquidity ratio recorded values of less than 1, reflecting the fact that Company G is unable to pay its short-term debts only from current assets owned. ROA and ROE recorded good values in the entire period analyzed, so we can say that the activity within the company was very efficient in terms of fructification equity and total assets.

The average duration of collection of receivables, the average length of stocks rotation and the rotational speed of fixed assets by the turnover recorded very good values. Note that in 2011 the company's activity has improved in terms of performance and solvency.

From the table 5.9.4, we note that, in the period 2007-2011, the turnover stood in the range [6.465.609, 7.951.494], with an average of 7.087.039 thousand HUF and a very low coefficient of variation, which shows that there are low variations in turnover, so predictability of turnover is very high.

The leverage ratio stood in the range [1,123999; 1,724941], with an average of 1,471514 and a low coefficient of variation, which shows that there are small variations in L, so predictability of L is high.

<b>Indicators</b>	<b>Average</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Standard deviation</b>	<b>Coefficient of variation</b>
<b>Turnover</b>	7087039	6465609	7951494	547618,8	0,07727
<b>EBIT</b>	97892,4	53592	195737	56642,7	0,578622
<b>L</b>	1,471514	1,123999	1,724941	0,234186	0,159146
<b>R<sub>LG</sub></b>	0,815775	0,628349	0,887249	0,106286	0,130289
<b>ROA</b>	0,028961	0,016363	0,058375	0,017127	0,591384
<b>ROE</b>	0,052793	0,027784	0,111286	0,03439	0,651409

**Table no. 5.9.4.**

A low volatility in the period 2007-2011 is registered by R<sub>LG</sub>, which shows that there are small variations in R<sub>LG</sub> and predictability of R<sub>LG</sub> is high.

## 5. Research report on company I and company J

*Author: Kóródi László*

The company I operates in the logistics sector and is located in Hajdú-Bihar county.

Data are in thousand forints

Indicators/Year	2007	2008	2009	2010	2011
<b>Turnover</b>	1419270	1558035	3309471	5046916	5073928
<b>Net income</b>	-16195	-247348	-394513	-1419955	-1041657
<b>Operating profit</b>	-123631	-369164	-499062	-1516168	-1138077
<b>EBIT</b>	-7747	3587	-339979	-1077047	-752155
<b>L</b>	0,868	0,888	2,292	-8,619	4,962
<b>R<sub>FE</sub></b>	-0,264	-0,155	-0,170	-0,005	-0,010
<b>R<sub>DF</sub></b>	0,390	0,399	0,610	1,200	0,776
<b>R<sub>LG</sub></b>	0,198	0,724	0,919	0,705	1,050
<b>R<sub>LR</sub></b>	0,022	0,502	0,768	0,615	0,934
<b>ROA</b>	-0,002	0,001	-0,080	-0,199	-0,090
<b>ROE</b>	-0,010	-0,179	-0,401	3,261	-1,736
<b>Dr</b>	0,123	34,963	60,122	49,884	59,688
<b>Dst</b>	16,761	16,102	11,867	7,433	7,487
<b>Da</b>	0,345	0,415	0,775	0,933	0,608

**Table no. 5.10.1. Evolution of main indicators of company I in the period 2007-2011**

From the table above, we see that the leverage ratio has been very high in the past three years, of more than one, and that the rate financial debts recorded values of more than 0,5, which shows that the company is dependent on long-term external sources and it does not have financial autonomy. General liquidity ratio recorded a value of more than 1 in 2011, reflecting the fact that Company I is able to pay its short-term debts only from current assets owned that year. But, until 2011, company I could not pay short-term debts from current assets held. ROA and ROE recorded negative values, so we can say that the activity within the company was not efficient in terms of fructification equity and total assets.

The average duration of collection of receivables and the average length of stocks rotation recorded good values in the entire period analyzed.

From the table 5.10.2, we note that, in the period 2007-2011, the turnover stood in the range [1419270, 5073928], with an average of 3281524 thousand HUF and a high enough coefficient of variation, which shows that there are large variations in turnover, so predictability of turnover is low.

Indicators	Average	Minimum	Maximum	Standard deviation	Coefficient of variation
<b>Turnover</b>	3281524	1419270	5073928	1786652	0,544458
<b>EBIT</b>	-434668	-1077047	3587	473482,8	-1,0893
<b>L</b>	0,078341	-8,61874	4,962413	5,139861	65,60909
<b>R<sub>LG</sub></b>	0,718956	0,197548	1,049698	0,324547	0,451413
<b>ROA</b>	-0,07397	-0,1992	0,000956	0,081829	-1,10624
<b>ROE</b>	0,186906	-1,73594	3,260539	1,84816	9,888155

**Table no. 5.10.2.**

The general liquidity ratio stood in the range [0,197548; 1,049698], with an average of 0,718956 and a relatively low coefficient of variation, which shows that there are small variations in R<sub>LG</sub>, so predictability of R<sub>LG</sub> is relatively high.

The highest volatility in the period 2007-2011 are registered by L and ROE, which shows that there are very large variations in L and ROE and predictability of L and ROE is very low.

The company J operates in the constructions sector and is located in Hajdú-Bihar county.

Data are in thousand forints

Indicators/Year	2007	2008	2009	2010	2011
<b>Turnover</b>	8595874	8347017	7779260	6161733	6034871
<b>Net income</b>	257720	208404	399258	287245	71575
<b>Operating profit</b>	448756	384602	597654	344348	19965
<b>EBIT</b>	399068	728727	551688	386660	454601
<b>L</b>	1,210	1,259	1,089	1,053	1,367
<b>R<sub>FE</sub></b>	0,153	0,150	0,078	0,246	5,632
<b>R<sub>DF</sub></b>	0,000	0,000	0,000	0,033	0,274
<b>R<sub>LG</sub></b>	1,465	1,489	1,634	1,387	1,505
<b>R<sub>LR</sub></b>	0,992	0,917	1,142	0,867	0,810
<b>ROA</b>	0,093	0,150	0,104	0,066	0,062
<b>ROE</b>	0,134	0,098	0,158	0,102	0,025
<b>Dr</b>	54,969	72,669	123,774	137,684	131,916
<b>Dst</b>	46,825	67,183	63,742	88,563	120,430
<b>Da</b>	2,004	1,721	1,462	1,059	0,827

**Table no. 5.10.3. Evolution of main indicators of company J in the period 2007-2011**

From table 5.10.3, we see that the leverage ratio is high, of more than one, and the rate financial debts recorded values of less than 0,5, which shows that the company is

dependent on short-term external sources and it does not have financial autonomy. General liquidity ratio and current liquidity ratio recorded good values, of more than 1, on the entire period analyzed, reflecting the fact that Company J is able to pay its short-term debts only from current assets owned. ROA and ROE recorded small values, so we can say that the activity within the company was not efficient in terms of fructification equity and total assets.

The average duration of collection of receivables and the average length of stocks rotation recorded very high values on the entire period analyzed, reflecting that the company may face a lack of liquidity, due to not collecting receivables. The rotational speed of fixed assets by the turnover recorded good value, but shows a decreasing tendency.

From table 5.10.4, we note that, in the period 2007-2011, the turnover stood in the range [6.034.871, 8.595.874], with an average of 7.383.751 thousand HUF and a very low coefficient of variation, which shows that there are small variations in turnover, so a predictability of turnover is very high.

<b>Indicators</b>	<b>Average</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Standard deviation</b>	<b>Coefficient of variation</b>
<b>Turnover</b>	7383751	6034871	8595874	1211028	0,164013
<b>EBIT</b>	504148,8	386660	728727	141417,8	0,280508
<b>L</b>	1,195737	1,053215	1,367166	0,127864	0,106933
<b>R<sub>LG</sub></b>	1,495851	1,387155	1,633774	0,089359	0,059738
<b>ROA</b>	0,095151	0,062324	0,150285	0,035416	0,372212
<b>ROE</b>	0,103062	0,024736	0,157505	0,050174	0,48683

**Table no. 5.10.4.**

The general liquidity ratio stood in the range [1,387155; 1,633774], with an average of 1,495851 and a very low coefficient of variation, which shows that there are small variations in R<sub>LG</sub>, so a predictability of R<sub>LG</sub> is very high. The highest volatility in the period 2007-2011 is registered by ROE, which shows that there are very large variations in ROE and predictability of ROE is very low.

These research reports are part of the manual titled ***Using Levy distribution processes in modeling economic and financial indicators of companies***, published within the project HURO 1001/293/2.2.3.

[www.huro-cbc.eu](http://www.huro-cbc.eu)  
[www.hungary-romania-cbc.eu](http://www.hungary-romania-cbc.eu)

The content of this material does not necessarily represent the official position of the European Union