

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 UNIVERSITY OF ORADEA



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 Oradea that are subject of research reports, were selected on the criterion of their listing on the Bucharest Stock Exchange and based on their contribution to regional development.

The selected companies from Oradea are: S.C. Turism Felix SA, S.C.Sinteza SA, S.C. Trameco SA, S.C. Nutrientul SA, S.C. Metalica SA, S.C.Calipso SA, S.C.Constructii Bihor SA, S.C.Simbeton SA, S.C.Transgex SA, S.C. Helios SA.

We use the application developed by Buciu Ioan (see chapter 3 and its appendix) 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 quarterly observations in the case of Turism Felix, Constructii Bihor, Simbeton, Calipso, Sinteza, Trameco, and semestrial observations for the Trangex, Nutrientul, Metalica and Helios. The analyzed period is 2007-2011 for Transgex, Nutrientul, Metalica and Helios and 2009-2012 for Turism Felix, Constructii Bihor, Simbeton, Calipso, Sinteza, Trameco, and the dataset consists of the companies' turnover and their EBIT.

In order to run the application for the 10 companies, we modified the application *test_kalman* by incorporating the new datasets and modifying the simulated noise, a Gaussian noise, with amplitude of same order of data, was chosen, respectively same mean and standard deviation. We apply the Kalman filter on the companies' turnover and EBIT; in the analysis we use the financial data to estimate, smooth and forecast.

When we apply the Kalman filter for estimation, we use observations prior to the time when the state of the dynamic system is estimated, when $t_{obs} < test$, while in the case of filtering the observations are used up to and including the time that the state of the dynamic system has to be estimated: $t_{obs} \leq test$. In the case of smoothing, we only take into account the observations after the date where the state of the dynamic system has to be estimated, $t_{obs} > test$.

The information from smoothing and estimates are used for analyzing the series trend. In the case of forecast technique, we divide the series length in 2 equal samples, on the first sample the state space model is estimated and for the second sample we forecast the series and compare it with the measured values (real values). By dividing the series in 2 sub-samples, we can test the predictability power of the Kalman filters.

1. Research report on S.C. Transgex SA and S.C. Helios SA

Author: Sabău-Popa Claudia Diana

S.C. Transgex SA is the largest company in Romania involved in prospecting, exploration and exploitation of geothermal fields, having approximately 60% concession of these resources. TRANSGEX is supplier of thermal energy produced from clean sources. In November 2012, TRANSGEX SA started the first power plant based on geothermal water in Romania. Geothermal water heating greenhouses, unique in Romania, is used by the largest company in the country working in the field of geothermal water exploitation, Transgex SA Oradea.

The main advantage of this method is the reduction of heating costs compared to any other type of fuel, with positive effect on environment.

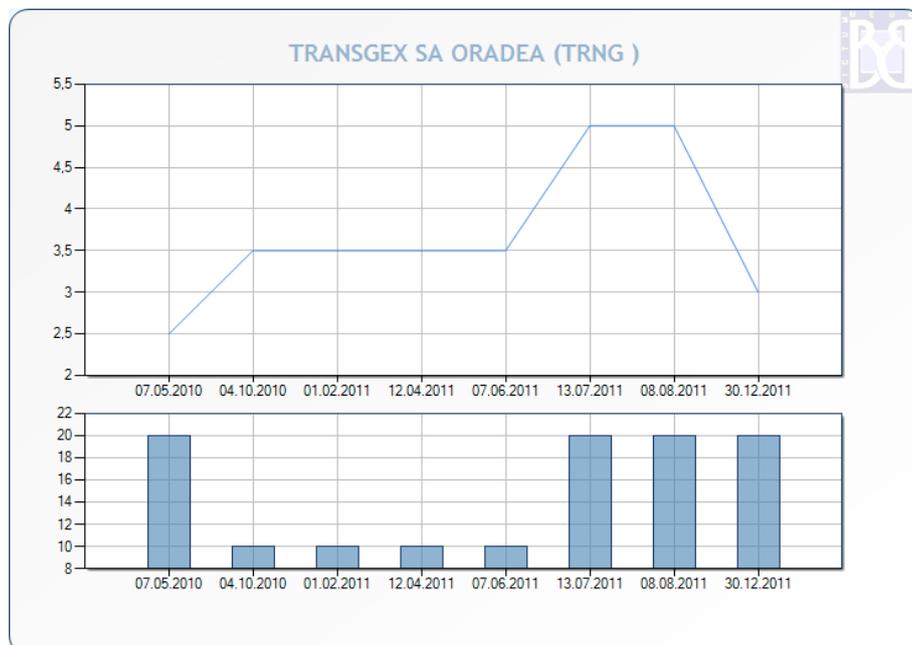


Figure no. 5.1.1. Last 3 years stock prices with Volum of transactions

Source: www.bvb.ro

Through an investment of about 2 million, the company currently owns 2 hectares Transgex emissions in Livada, Bihor County, in order to produce red protected space. Transgex shares are listed on III-R, RASDAQ section of the Bucharest Stock Exchange under the symbol TRNG. This company has been having, for the past 5 years, a permanent number of over 120 employees, so it has a significant role in the regional economy.

Accounting and financial information from the period 2007-2011 were collected from www.bvb.ro of semester and annual financial reports submitted by the companies: S.C. Transgex SA and S.C. Helios SA.

data are in RON

Period/Indicators	2007 S1	2007 S2	2008 S1	2008 S2	2009 S1	2009 S2	2010 S1	2010 S2	2011 S1	2011 S2
Turnover	4537379	11068268	5799887	13303582	6803718	12289357	7399573	19203596	9221342	15362257
Net income	685542	1231111	458404	427249	1331548	560598	1093094	729102	550723	119428
EBIT	821163	1465085	1328324	780115	1703686	1049448	1520087	1376129	866161	646218
Net cash-flow	800001	116048	934549	-765237	-222890	494184	-286911	396903	-330628	-519295
L	0,16	0,19	0,46	0,36	0,27	0,44	0,47	0,50	0,40	0,32
Rfe	0,02	0,03	0,19	0,64	0,08	0,51	0,18	0,42	0,54	1,29
Rlg	1,85	2,18	1,15	1,14	1,95	1,46	1,58	1,56	1,95	1,91
Rlr	1,43	2,01	0,95	0,98	1,52	1,20	1,15	1,35	1,77	1,66
Rdf	0,00	0,00	0,20	0,15	0,13	0,21	0,19	0,18	0,16	0,12
ROA	0,04	0,06	0,05	0,03	0,06	0,03	0,05	0,04	0,03	0,02
ROE	0,04	0,06	0,02	0,02	0,06	0,03	0,05	0,03	0,03	0,004
Dr	144,93	211,35	93,72	77,31	53,89	92,00	99,07	123,48	132,91	162,06
Dst	51,64	20,76	25,93	16,37	27,8	28,18	54,95	24,64	16,78	28,97
Da	0,21	0,48	0,21	0,46	0,24	0,40	0,23	0,59	0,30	0,43

Table no. 5.1.2. Evolution of main indicators of company Transgex S.A. in the period 2007-2011

From table 5.1.2., we see that in the analyzed period, leverage is of less than one and financial debts ratio recorded low values, less than 0.2, reflecting financial autonomy of SC Transgex SA. General liquidity ratio and the current liquidity ratio values are very good, with more than 1, reflecting the fact that the analyzed company can pay its short term debts only from its current assets owned. Instead, ROA and ROE values have been decreasing in the last 2 years and are relatively modest throughout the period. It is found to accelerate the speed of rotation of total assets in turnover and average length of rotation of stocks is optimal, which is positive for the company. The average duration of collection of receivables is quite large and growing, which is a negative thing for the company.

From table 5.1.3, we note that, in the period 2007-2011, the turnover stood in the range [4.537.379, 19.203.596], with an average of 10.498.896 Ron and a relatively low coefficient of variation, which shows that there are low variations in turnover and predictability of turnover is high.

Data are in RON

Indicators	Average	Minimum	Maximum	Standard deviation	Coefficient of variation
Turnover	10498896	4537379	19203596	4634807	0,4414566
EBIT	1155641,6	646218	1703686	367400	0,3179189
L	0,3591516	0,16465	0,50048	0,11956	0,33
ROA	0,0405702	0,018	0,06292	0,01456	0,359
ROE	0,0347501 6	0,004442	0,062731	0,018623	0,5359

Table no. 5.1.3.

From Figure no 5.1.4., we note that turnover clearly shows an upwards trend, but annual cash flow shows a downwards trend, which is not attractive for potential investments in this company.

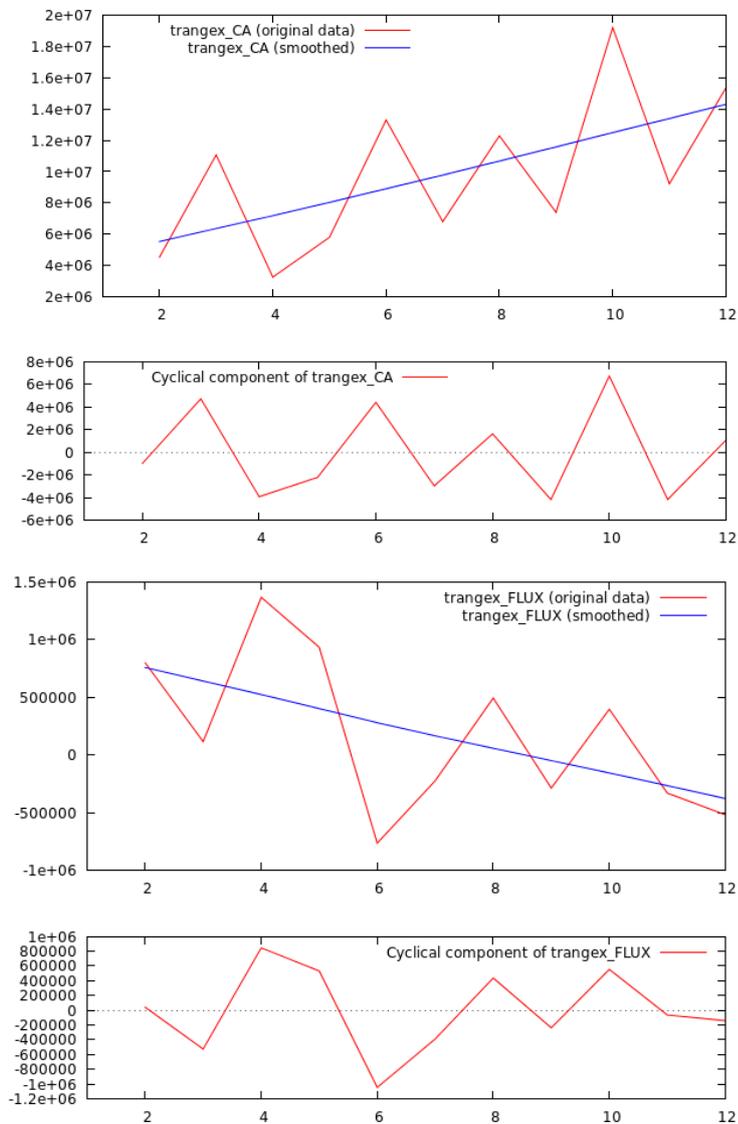
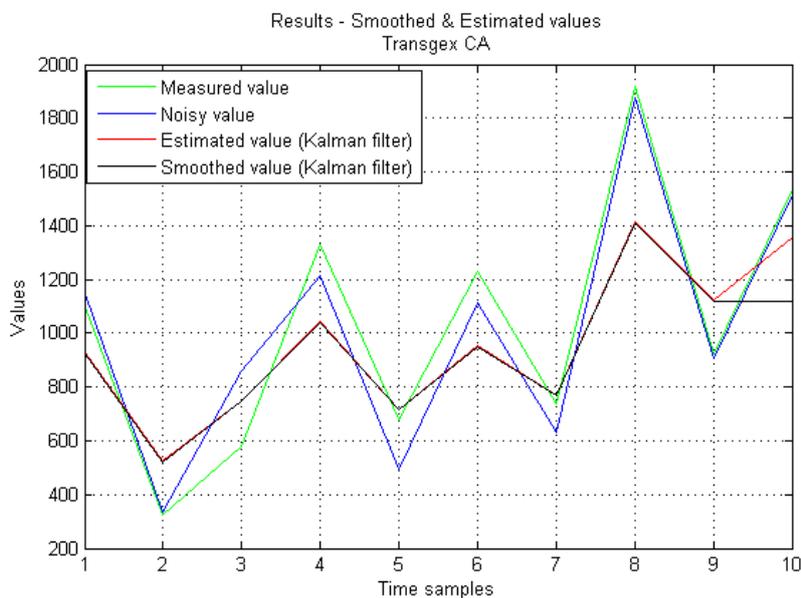
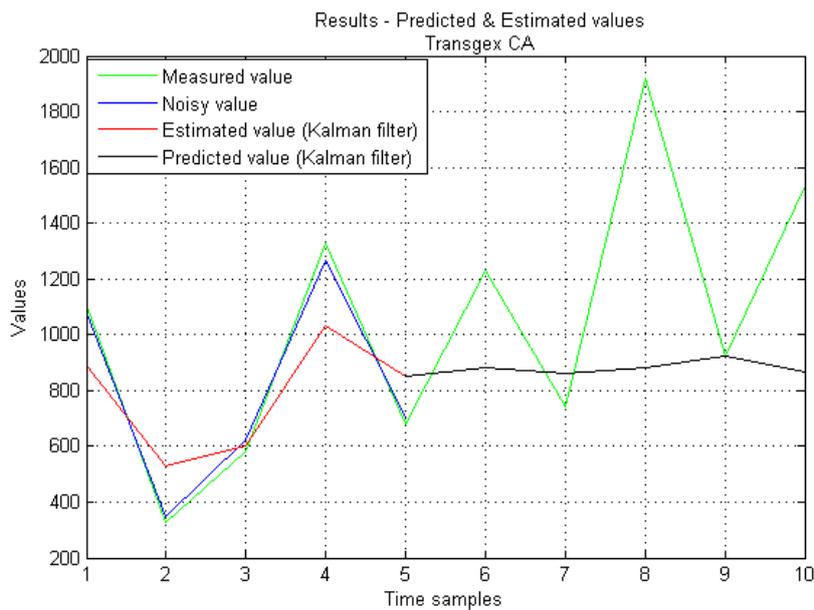


Figure no. 5.1.4. Turnover and Net Cash-flow trend

The highest volatility in the period 2007-2011 is register by ROE. The leverage ratio stood in the range [0,16465; 0,50048], with an average of 0,3591516 and a low coefficient of variation, which shows that there are quite low variations in leverage ratio and predictability of leverage ratio is high.

In the following figure, I apply the Kalman filter on the company Transgex SA turnover and EBIT, using the financial data to estimate, smooth and forecast.



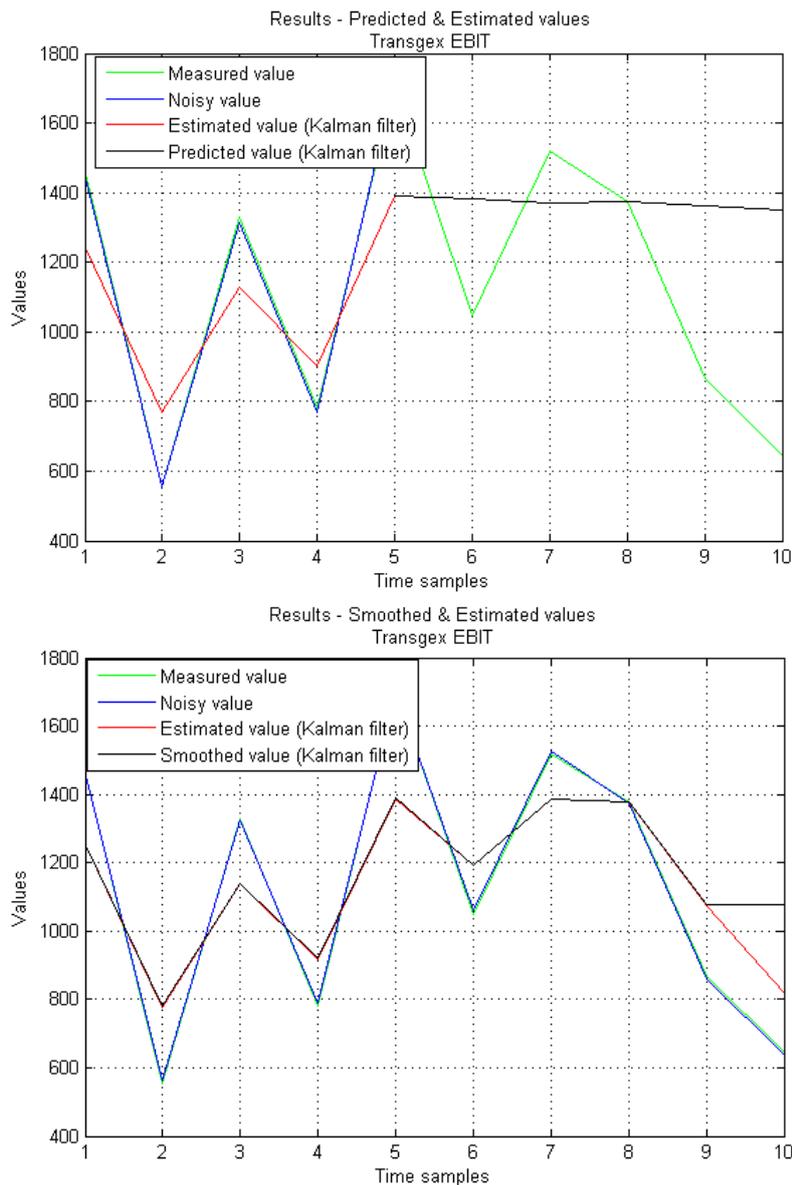


Figure no. 5.1.5

In the case of Transgex S.A. company from the Fig. 5.1.5 we observe that:

- The trend, which is represented by the smoothed value, is ascending for turnover and descending for EBIT
- In the case of forecast, which is represented by the predicted value, when compared with the real measured value we observe that in the case of turnover the trend of predicted values is not similar with the real data, but in the case of EBIT the trend of predicted values is similar with the real data.

S.C. Helios SA is one of the most important companies from Bihor that active in refractory ceramics industry. One of the new products the company Helios SA is Helios

chimney system. It is the newest system in Romania cart appeared and is the result of a team of technicians, conducted over several years. Helios SA shares are listed on III-R, RASDAQ section of the Bucharest Stock Exchange under the symbol HEAL.

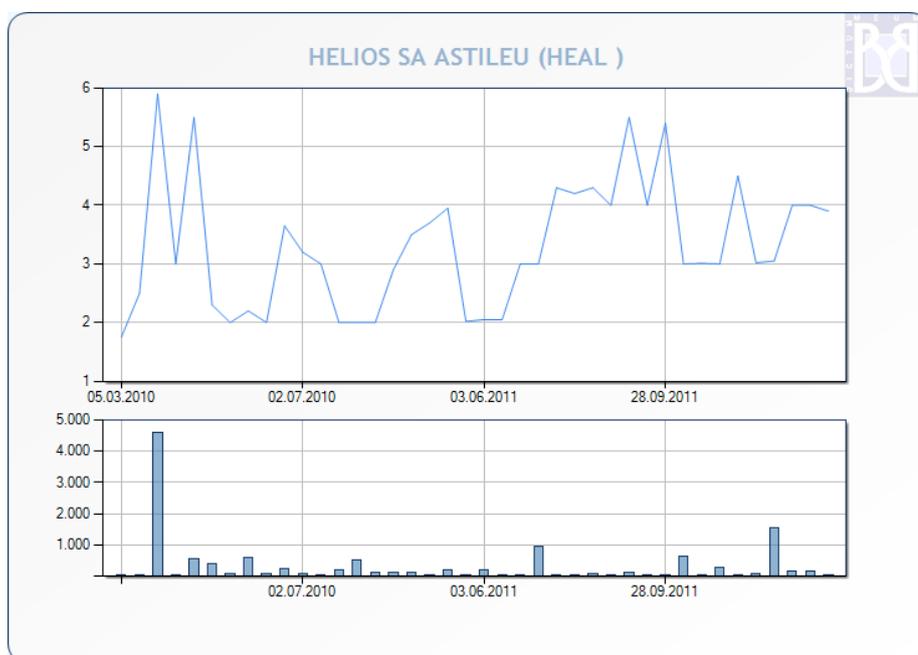


Figure no. 5.1.6. Last 3 years stock prices with Volum of transactions
Source: www.bvb.ro

This company has in the last 10 years a permanent number of employees of over 150, so it has a significant role in the regional economy.

data are in RON

Period	2006 S2	2007 S1	2007 S2	2008 S1	2008 S2	2009 S1	2009 S2	2010 S1	2010 S2	2011 S2
Turnover	22225519	10713975	26500787	13511455	35130370	14035292	31888493	11879244	28346932	26126709
Net income	236987	130945	417209	51047	607536	212053	671685	209742	755112	781727
EBIT	1090860	529663	1114008	396037	1575523	673746	1744165	674451	1782313	1726736
Net cash-flow	25831465	0	174202	0	276163	0	-28374	0	-48824	-135431
L	0,85	1,04	1,09	1,46	1,25	1,23	1,06	1,17	1,02	1,01
R _{FE}	0,7685	0,7041	0,7612	0,9417	1,8413	0,2037	1,2542	1,5280	1,2384	1,1816
R _{DF}	0,2403	0,2575	0,3201	0,3763	0,3612	0,3512	0,3412	0,3333	0,3099	0,2994
R _{LG}	0,9937	0,9763	0,9881	0,9377	0,9604	0,8962	0,9830	0,9425	0,9988	1,0007
R _{LR}	0,1048	0,1638	0,1810	0,2077	0,2098	0,2968	0,1753	0,2672	0,1494	0,1294
ROA	0,0348	0,0152	0,0307	0,0094	0,0364	0,0159	0,0422	0,0155	0,0421	0,0390
ROE	0,0139	0,0076	0,0238	0,0029	0,0311	0,0107	0,0333	0,0103	0,0360	0,0355
Dr	15,44	29,87	24,54	32,54	13,07	28,38	6,58	26,48	7,83	10,92
Dst	133,69	147,98	121,30	147,78	103,85	105,81	100,69	141,22	131,75	156,03
Da	0,71	0,31	0,73	0,32	0,81	0,33	0,77	0,27	0,67	0,59

Table no. 5.1.7. Evolution of the main indicators of the company Helios S.A in the period 2006-2011

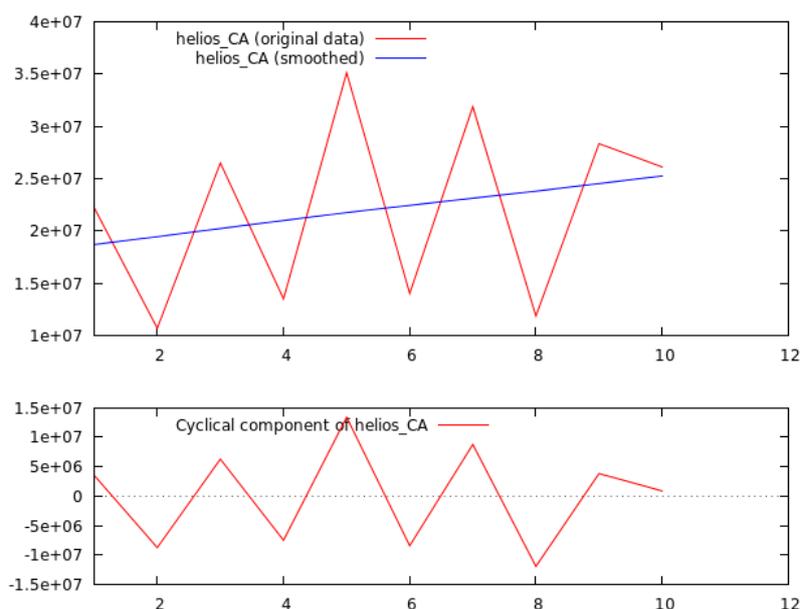
From the table 5.1.7., we see that in the analyzed period the leverage ratio is greater than one, which shows that the company depend on external financing sources, particularly the short term debts, because the rate financial debts recorded low values, less than 0,4. General liquidity ratio and the current liquidity ratio recorded low values, reflecting the fact that Helios S.A, is unable to pay its short-term liabilities solely from current assets owned. ROA and ROE values are fluctuating and are low throughout the period. The average duration of collection of receivables is declining, which is a good thing for the company. Instead, stock rotation period is very large and growing, which is a weakness of the company.

data are in RON

Indicators	Average	Minimum	Maximum	Standard deviation	Coefficient of variation
Turnover	22035878	10713975	35130370	8901268,858	0,403944
EBIT	1130750	396037	1782313	545066,3928	0,48204
L	1,118503	0,851462	1,458322	0,166524995	0,14888
ROA	0,028117	0,009371	0,042238	0,012736994	0,453
ROE	0,020512	0,002904	0,036049	0,012792775	0,62369

Table no. 5.1.8.

From the table 5.1.8, we note that, in the period 2006-2011, the turnover stood in the range [10.713.975, 35.130.370], with an average of 22.035.878 Ron and a relatively low coefficient of variation, which shows that there are low variations in turnover and a predictability of turnover is high.



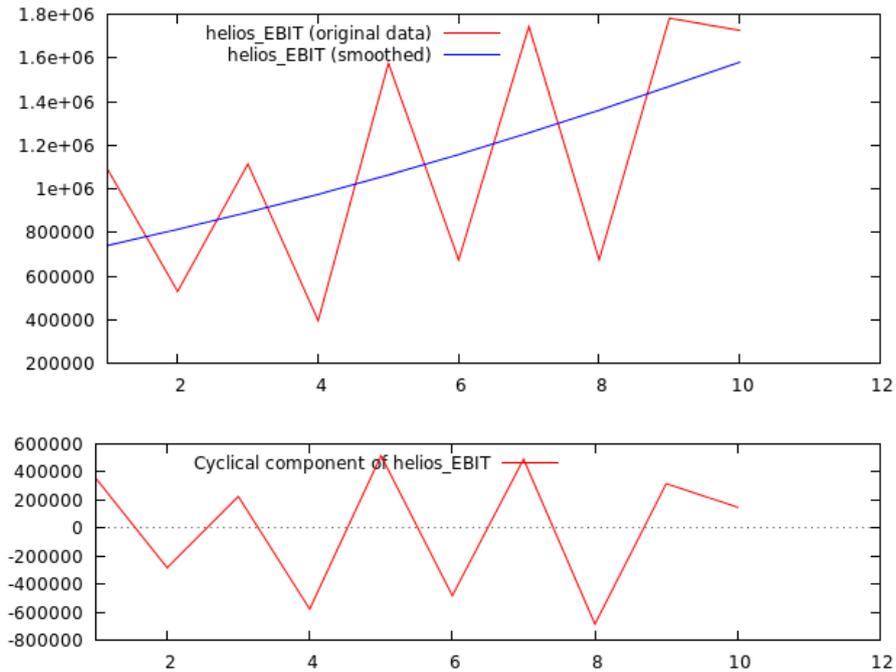
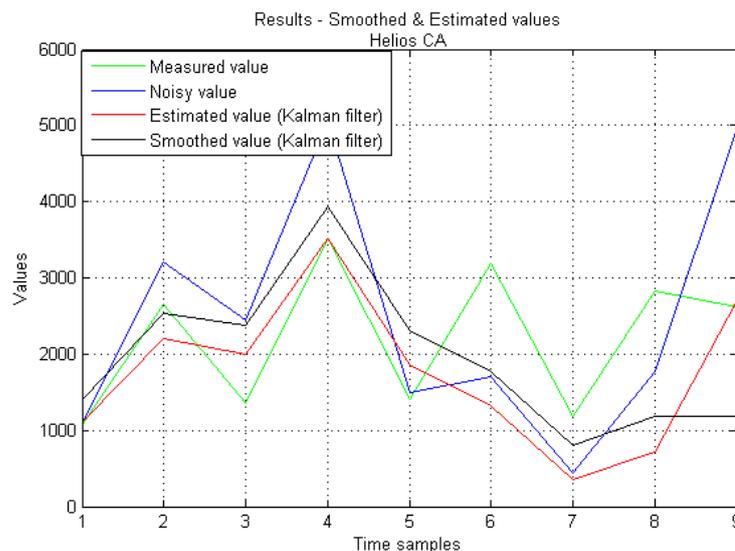


Figure no. 5.1.9. Turnover and EBIT trend

From Figure no 5.1.9. we note that turnover shows an lightly increasing, and a earnings before interest and taxes shows clearly an increasing trend throughout the financial crisis period, which is strength of the company Helios S.A.

The highest volatility in the period 2006-2011 is register by ROE. The leverage ratio stood in the range [0,851462, 1,458322], with an average of 1,118503 and a very low coefficient of variation, which shows that there are quite low variations in leverage ratio and predictability of leverage ratio is high.

In the following, I apply the Kalman filter on the company Helios SA turnover and EBIT, using the financials data to estimate, smooth and forecast.



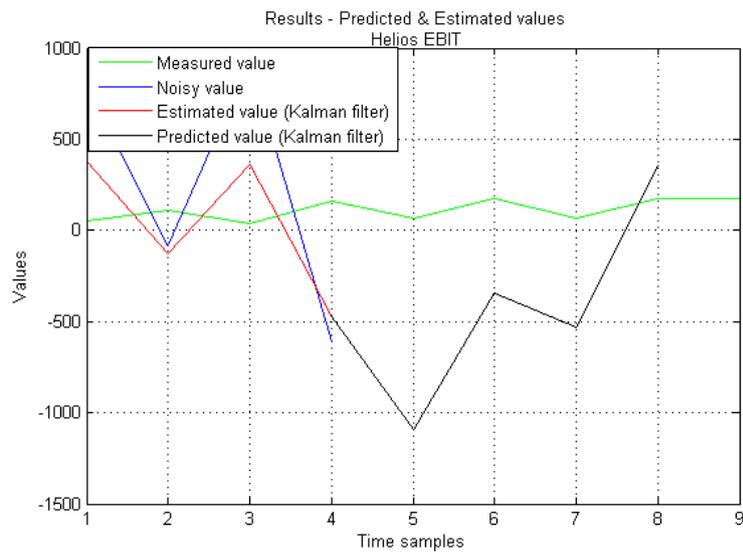
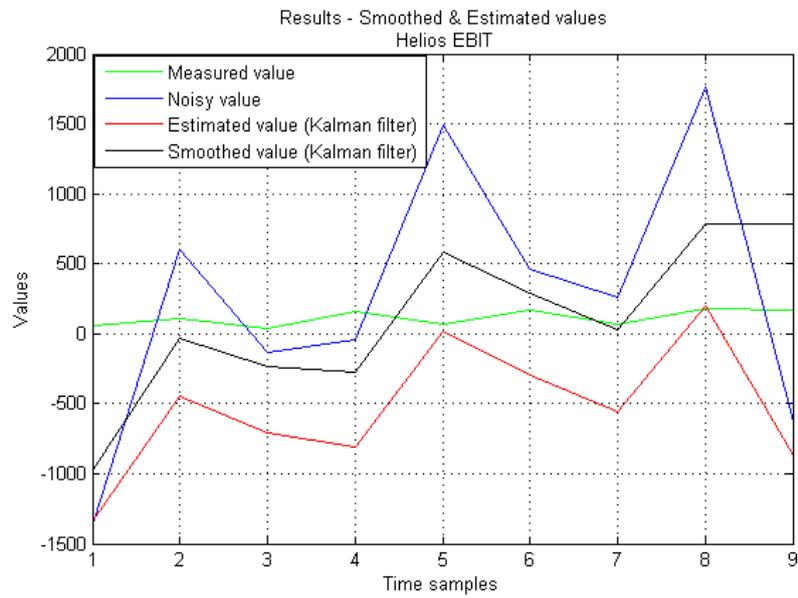
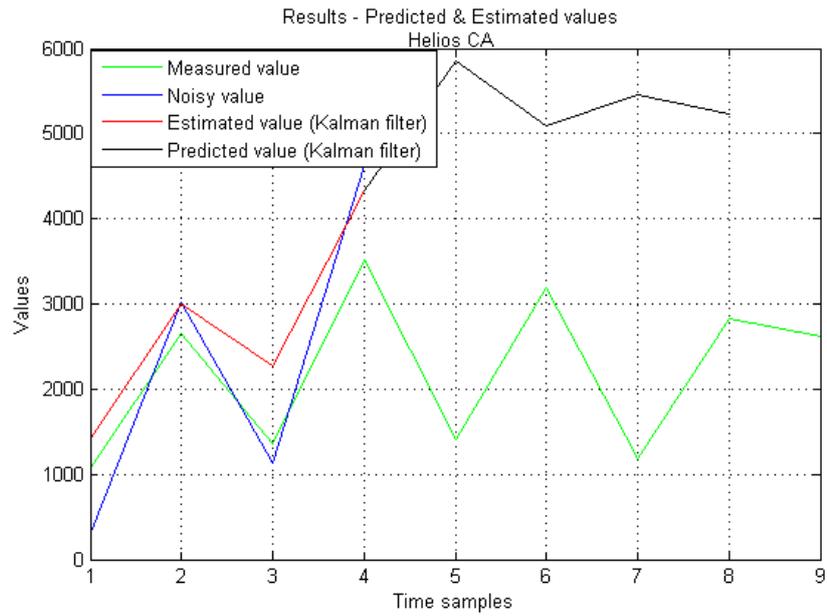


Figure no. 5.1.10

In the case of Helios S.A. company from the Fig. 5.1.10 we observe that:

- The trend, which is represented by the smoothed value, is descending for turnover and ascending for EBIT
- In the case of forecast, which is represented by the predicted value, when compared with the real measured value we observe that in the case of turnover the trend of predicted values is similar with the real data, but in the case of EBIT the trend of predicted values isn't similar with the real data.

2. Research report on SC Turism Felix SA and SC Sinteza SA

Author: Kulcsar Edina Eva, Pop Răzvan Valentin

Situated in Bihor county, at 8 km from Oradea city and only at 20 km from the border with Hungary, **S.C Turism Felix S.A** asserts among the main touristic and spa with Romanian history resorts from the North - West of Transylvania. Consists of a complex of 2 and 3 star 10 hotels, S.C Turism Felix S.A has as main activity the spa treatment, catering and leisure, domestic and international tourism, exploitation of thermal water sources and their distribution.

The company's shares are listed on the Bucharest Stock Exchange in the second category, with the TUFE symbol.



Figure no. 5.2.1. Last 3 years stock prices with Volum of transactions

Source: www.bvb.ro

With an over 3,000 seats housing capacity, the company promotes the principle of health tourism, providing spa and curative services, medically certificated, rest and relaxing tourism, business tourism disposing of conference and events halls, leisure tourism and sports tourism. In relation with competition S.C Tourism Felix S.A holds leadership on spa tourism market.

Providing about 850 jobs, the company contributes significantly to Bihor's population incomes increase and implicitly to regional development. By exploitation of the most valuable nature reserves from Europe, such as bicarbonate, calcic and magnesian, slightly radioactive thermal waters, S.C Tourism Felix S.A spa tourism complex, attend undoubtedly increase of regional competitiveness.

Accounting and financial information from the period 2009-2012 were collected from www.bvb.ro of financial reports quarterly, half-yearly and annual submitted by the companies: S.C.Turism Felix S.A. and S.C. Sinteza SA.

data are in RON

Period	Turnover	Net income	Net cash-flow	L	R _{DF}	R _{LG}	R _{LR}	ROA	ROE	Dr	Dst	Da
2009 Q I	4976822	-2712230	-7677869	0,139	0,073	0,586	0,528	-0,014	-0,016	65,44	10,71	0,03
2009 Q II	17782902	-1264760	-6978589	0,172	0,087	0,537	0,475	-0,006	-0,008	39,55	8,15	0,09
2009 Q III	43061490	9615876	-	0,124	0,076	1,393	1,298	0,056	0,054	23,95	4,46	0,21
2009 Q IV	52019303	7814850	-2726190	0,175	0,131	2,366	2,200	0,050	0,043	20,42	5,04	0,24
2010 Q I	4454921	-3677715	-	0,165	0,131	1,883	1,569	0,021	-0,021	36,30	16,33	0,02
2010 Q II	18129802	-2830959	-5121786	0,164	0,120	1,166	0,991	-0,006	-0,016	34,50	8,75	0,09
2010 Q III	38769903	4453636	-	0,150	0,105	2,036	1,931	0,035	0,024	31,83	4,57	0,18
2010 Q IV	48499100	5032298	2633824	0,137	0,102	2,612	2,437	0,041	0,027	9,63	5,67	0,23
2011 Q I	4537826	-2542892	-	0,126	0,099	2,230	2,019	-0,010	-0,014	38,10	12,16	0,02
2011 Q II	16421422	-1393055	-3216292	0,131	0,095	2,024	1,835	-0,002	-0,008	31,17	10,13	0,08
2011 Q III	40121829	7602849	-	0,130	0,087	2,944	2,821	0,052	0,039	25,84	5,64	0,20
2011 Q IV	48437997	6738894	3978117	0,121	0,090	4,215	3,972	0,050	0,039	12,32	6,85	0,25
2012 Q I	4341675	-4599333	-	0,124	0,088	2,409	2,241	-0,148	-0,027	48,30	16,15	0,15
2012 Q II	16310759	-5231553	-8066909	0,132	0,084	1,668	1,505	-0,024	-0,031	55,87	12,27	0,09
2012 Q III	39720058	3382481	-	0,110	0,072	3,049	2,900	0,028	0,019	29,53	5,89	0,20

Table no. 5.2.2. Evolution of the main indicators of the company Turism Felix S.A in the period 2009-2012

From the table 5.2.2., we see that in the analyzed period leverage is less than one and financial debts ratio recorded low values, less than 0.2, reflecting financial autonomy of SC Turism Felix SA. But the annual cash flow is negative which shows that the company

faces the possibility of entering into bankruptcy, due to the high value of uncollected receivables. General liquidity ratio and the current liquidity ratio values are very good, with more than 1, reflecting the fact that the analyzed company can pay its short term debts only from its current assets owned. Instead, ROA and ROE values are negative or quite low throughout the period, which is weakness of the company with seasonal activity. The average length of rotation of stocks is optimal, which is positive for this company. The average duration of collection of receivables is large and growing from year to year, which is a bad thing for the company.

Indicators	Average	Minimum	Maximum	Standard deviation	Coefficient of variation
Turnover	26505721	4341675	52019303	18274954,76	0,689472
EBIT	3417657	-4596327	11278506	5969838,373	1,746763
L	0,139909	0,109816	0,174678	0,020307078	0,145145
ROA	0,00811	-0,14787	0,0561	0,051234123	6,137635
ROE	0,007004	-0,03117	0,053774	0,028946237	4,132824

Table no. 5.2.3.

From the table 5.2.3, we note that, in the period 2009-2012, the turnover stood in the range [4341675, 52019303], with an average of 26.505.721 Ron and a relatively low coefficient of variation, which shows that there are low variations in turnover.

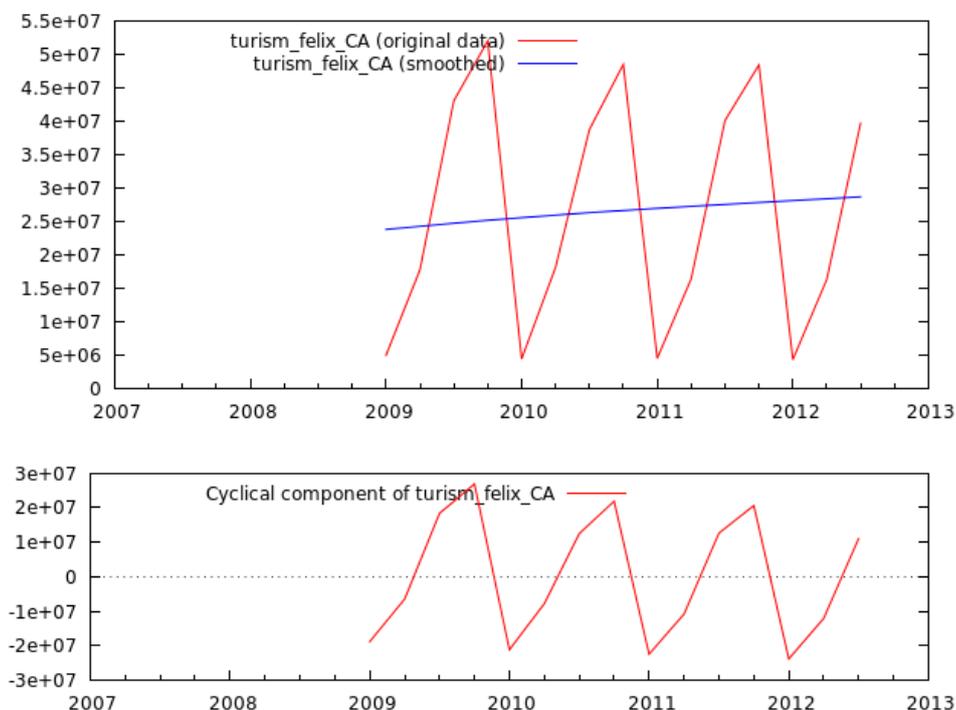
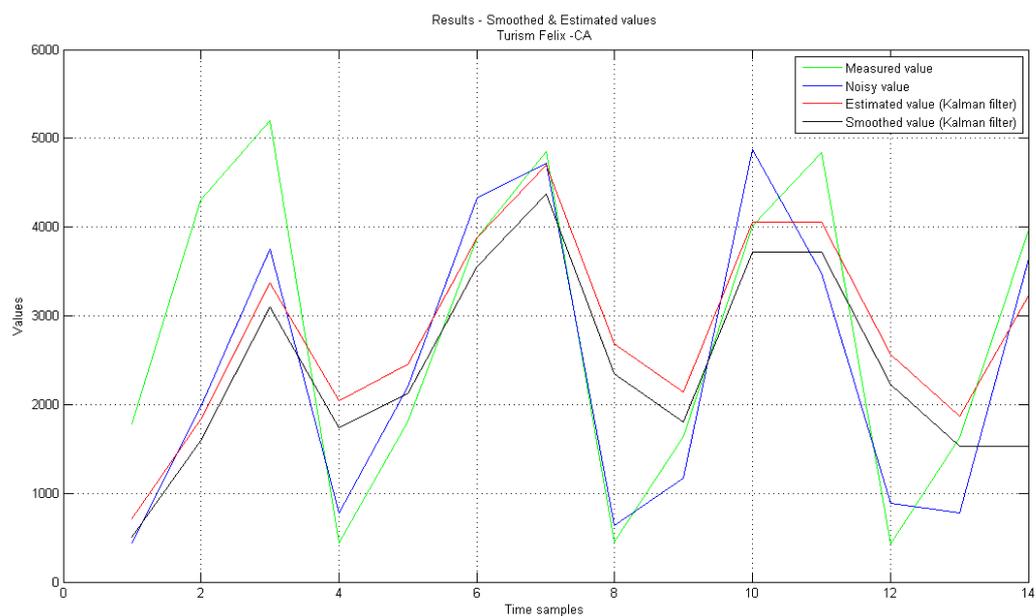
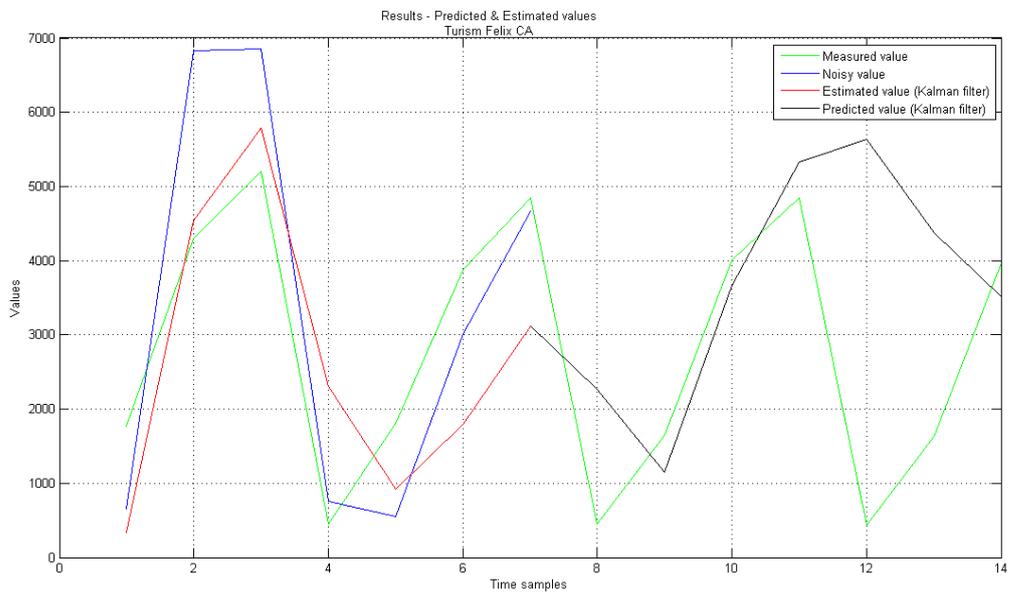


Figure no. 5.2.4. Turnover trend

From Figure no.5.2.4. after eliminating seasonal and cyclical component, we note that turnover was relatively constant throughout the financial crisis period, which is strength of the company Turism Felix SA.

The highest volatility in the period 2009-2012 is register by ROA and ROE, which shows that there are very high variations in ROA and ROE and predictability of ROA and ROE are very low. The leverage ratio stood in the range [0,109816, 0,174678], with an average of 0,139909 and a very low coefficient of variation, which shows that there are quite low variations in leverage ratio and predictability of leverage ratio is high.

In the following, we apply the Kalman filter on the company Turism Felix S.A. turnover and EBIT, using the financials data to estimate, smooth and forecast.



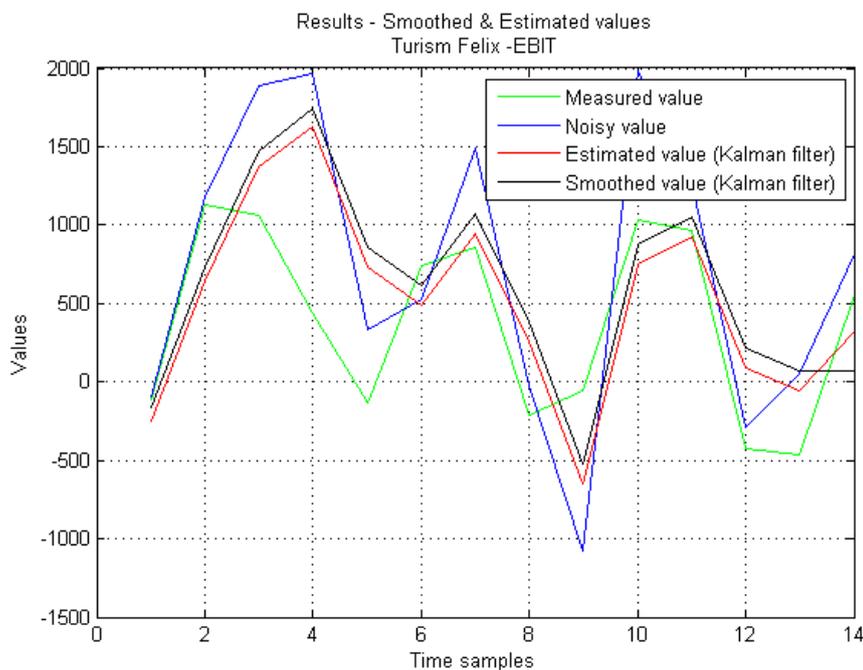
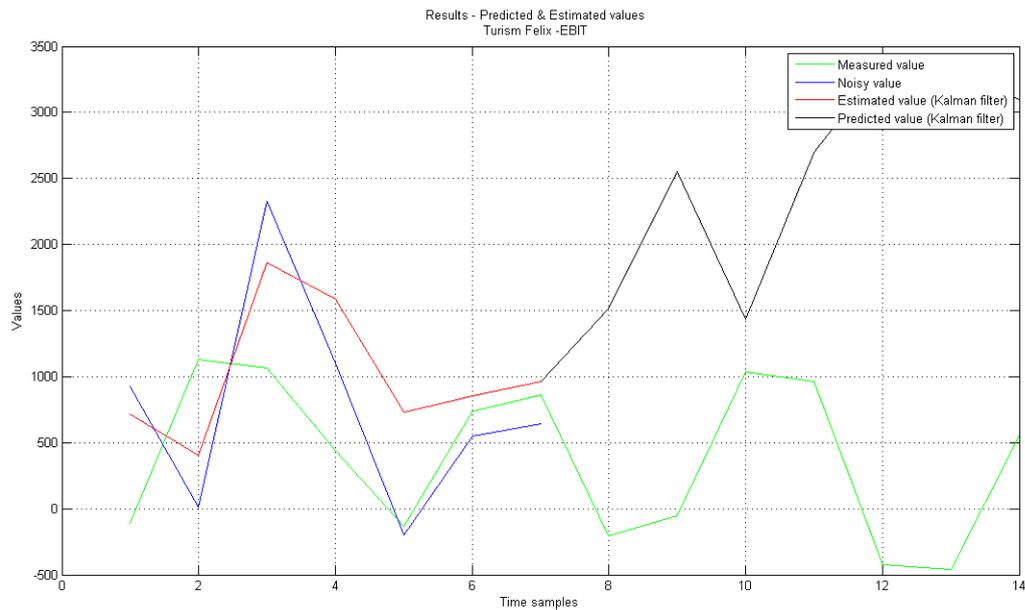


Figure no. 5.2.5.

In the case of Turism Felix S.A. company from the Fig. 5.2.5 we observe that:

- The trend, which is represented by the smoothed value, is descending both turnover EBIT
- In the case of forecast, which is represented by the predicted value, when compared with the real measured value we observe that in the case of turnover the trend of predicted values isn't similar with the real data, but in the case of EBIT the trend of predicted values is similar with the real data.

S.C Sinteza S.A is a company founded in 1990 by whole assumption of Întreprinderii Chimice Sinteza, which was founded in 1959 by the merger of two chemical companies Uzina de Lacuri și Vopsele “Transilvania” (public ownership) and Fabrica Chimică “Sinteza”. S.C Sinteza S.A is a company with Romanian tradition in chemical industry from the North - West of Transylvania, located in Oradea city, only at 8 km from the border with Hungary.

The company's shares are listed on the Bucharest Stock Exchange, in the second category, with the STZ symbol. The company with a chemical profile, has as main activity production of organic synthesis products (salicylic acid, benzoic acid, sodium benzoate), and other chemicals products including agrochemicals, additives for mineral oils, flotation collectors, paints, varnishes, thinners and auto products.

In the process of chemical products manufacturing, S.C Sinteza S.A, provides employment for about 100 people, whereby 50 are directly productive, which contributes in this way to incomes and standards of living increase of population from this area, and well at regional development. In his activity, the company has major concerns about the effects of environmental pollution saying: “In the heart of company concern is the Man, who has the claim for healthy and productive life and Environment with his natural resources.” The company’s awareness for the environmental protection significantly influence the potential of regional development from this region.



Figure no. 5.2.6. Last 3 years stock prices with Volum of transactions
Source: www.bvb.ro

data are in RON

Period	Turnover	Net income	EBIT	L	R _{DF}	R _{LG}	R _{LR}	ROA	ROE	Dr	Dst	Da
2009 Q I	2453413	69067	82710	0,010	0,000	5,579	3,901	0,000	0,000	148,18	103,00	0,01
2009 Q II	5722837	249349	300200	0,011	0,000	5,174	3,680	0,002	0,001	129,97	88,36	0,03
2009 Q III	7717081	403746	488573	0,012	0,000	4,919	2,938	0,003	0,002	119,97	142,64	0,04
2009 Q IV	12227242	479528	619925	0,014	0,000	4,269	3,189	0,004	0,003	173,94	77,93	0,07
2010 Q I	2592071	-144272	-144272	0,034	0,014	4,051	2,708	-0,001	-0,001	216,67	151,14	0,01
2010 Q II	5285427	199690	32175,11	0,041	0,015	2,840	1,909	0,000	0,001	187,01	138,67	0,03
2010 Q III	7023125	-20032	63897	0,039	0,015	2,634	1,565	0,000	0,000	168,13	168,24	0,04
2010 Q IV	9374393	15329	99297	0,057	0,031	2,070	1,078	0,001	0,000	164,75	165,47	0,05
2011 Q I	2407394	-990400	-958308	0,066	0,029	1,686	1,129	-0,005	-0,006	143,53	127,77	0,01
2011 Q II	5883574	1458988	1531094	0,068	0,030	1,466	0,949	0,009	0,009	118,99	101,02	0,03
2011 Q III	9960826	-1596660	-1498601	0,068	0,030	1,261	0,753	-0,008	-0,010	93,04	86,62	0,06
2011 Q IV	14232173	-1330486	-1205867	0,067	0,029	1,095	0,603	-0,007	-0,008	81,35	79,02	0,08
2012 Q I	5574458	440232	578799	0,090	0,029	0,940	0,394	0,003	0,003	64,46	90,48	0,03
2012 Q II	12273440	679472	941926	0,091	0,032	0,945	0,433	0,005	0,004	61,01	73,53	0,07
2012 Q III	17868208	858875	1230181	0,105	0,039	0,953	0,476	0,007	0,005	77,39	78,57	0,10

Table no. 5.2.7. Evolution of the main indicators of the company Sinteza S.A in the period 2009-2012

From the table 5.2.7., we see that in the analyzed period leverage and financial debts ratio recorded very low values, reflecting financial autonomy of SC Sinteza SA. General liquidity ratio and the current liquidity ratio values are very good in the period 2009-2011Q2, with more than 1, reflecting the fact that the analyzed company can pay its short term debts only from its current assets owned. From the third quarter of 2011, both general liquidity ratio much and current liquidity ratio shows a tendency considerable to decrease, which may lead to a failure of payment short-term debts and the necessity to sale of assets held. ROA and ROE values are negative or quite low throughout the period, which is weakness of this company. The average duration of collection of receivables and the average length of rotation of stocks are large, though shows a decreasing trend from year to year.

data are in RON

Indicators	Average	Minimum	Maximum	Standard deviation	Coefficient of variation
Turnover	8039711	2407394	17868208	4577134,931	0,569316
EBIT	144115,3	-1498601	1531094	851147,4253	5,906018
L	0,051562	0,009797	0,104815	0,031399977	0,608974
ROA	0,000798	-0,00844	0,008613	0,00476219	5,964031
ROE	0,000301	-0,00954	0,00871	0,004862251	16,1738

Table no 5.2.8.

From the table 5.2.8, we note that, in the period 2009-2012, the turnover stood in the range [2.407.394, 17.868.208], with an average of 26.505.721 Ron and a relatively low coefficient of variation, which shows that there are relatively low variations in turnover, so a predictability of turnover is high. Also, the Earnings before interest and taxes stood in the range [-1.498.601, 1.531.094], with an average of 144.115,3 Ron and a very high coefficient of variation, which shows that there are very high variations in turnover, so a predictability of EBIT is very low.

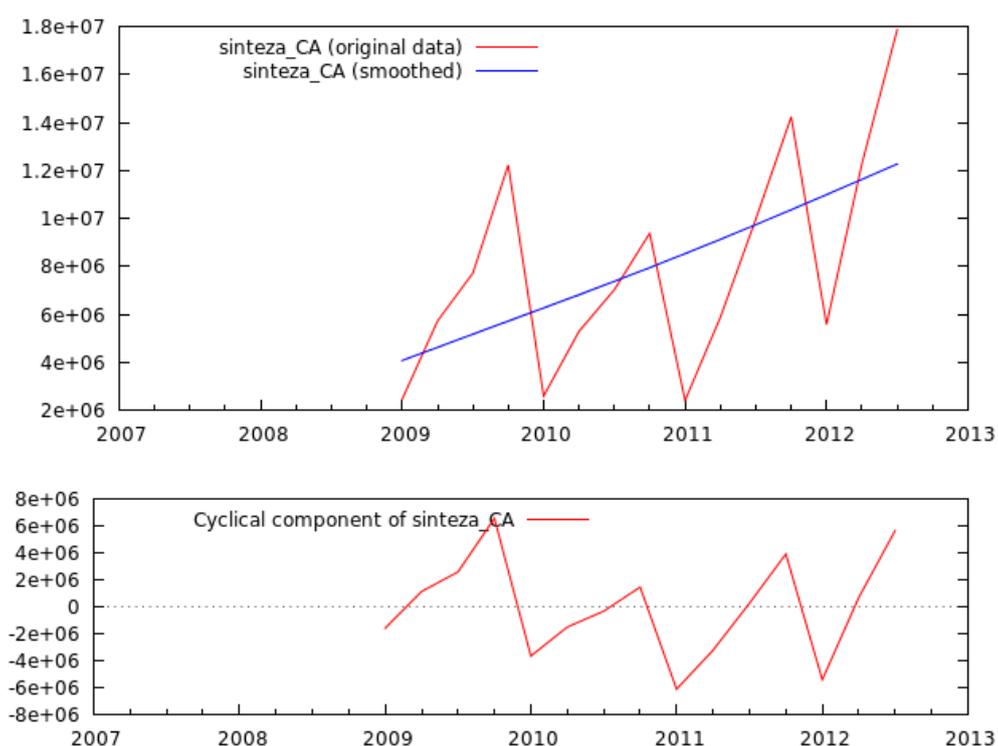
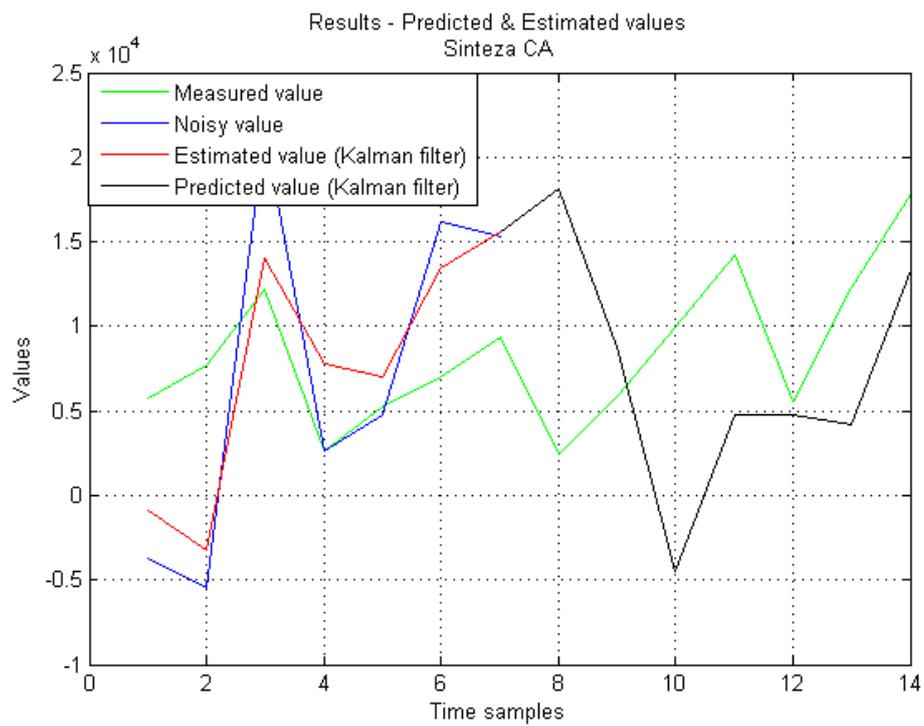
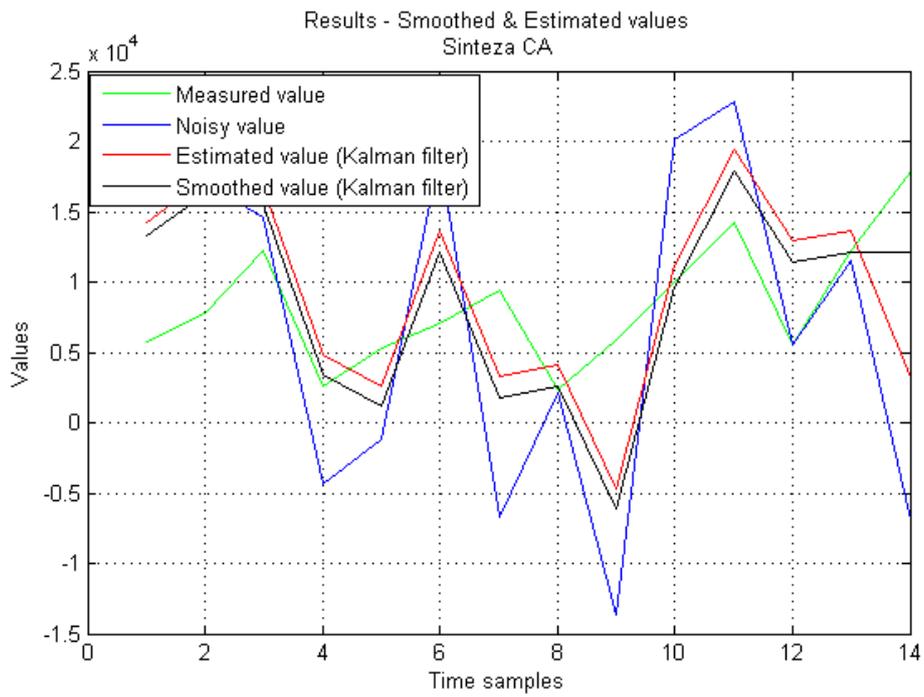


Figure no. 5.2.9. Turnover trend

From Figure no.5.2.9, we note that turnover shows an increasing trend throughout the financial crisis period, which is strength of the company Sinteza SA.

The highest volatility in the period 2009-2012 is register by ROE and ROA. The leverage ratio stood in the range [0,009797, 0,104815], with an average of 0,051562 and a low coefficient of variation, which shows that there are low variations in leverage ratio and predictability of leverage ratio is high.

In the following, we apply the Kalman filter on the company Sinteza S.A. turnover and EBIT, using the financials data to estimate, smooth and forecast.



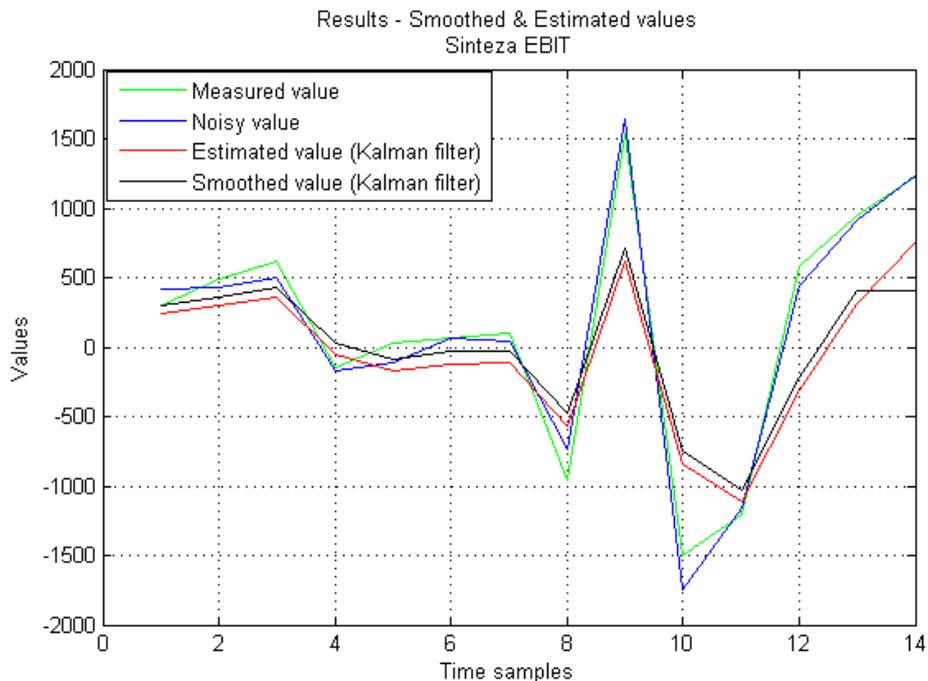
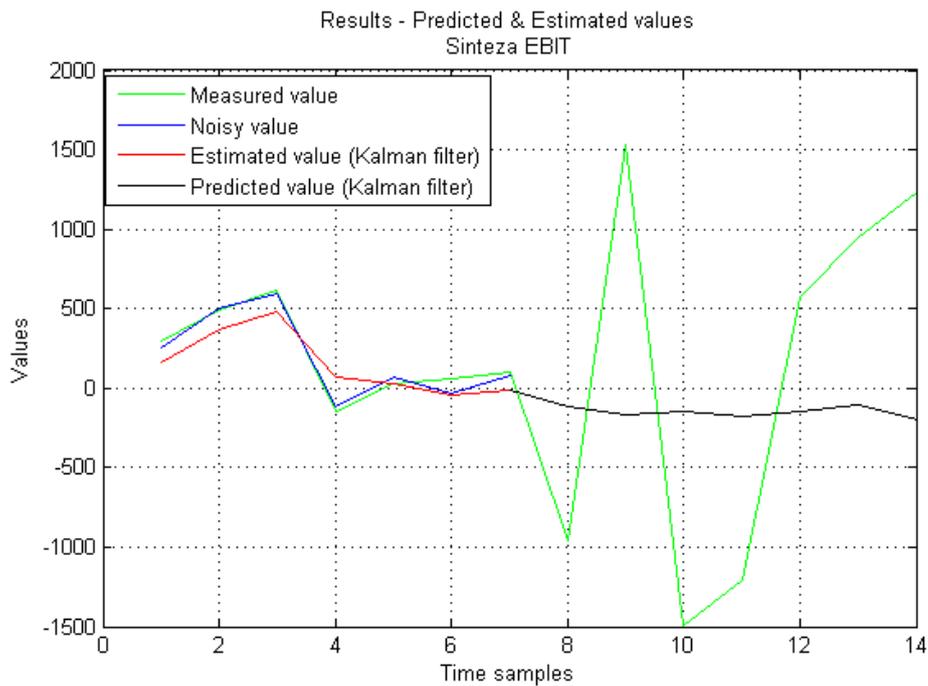


Figure no. 5.2.10.

In the case of Sinteza S.A. company from the Fig. 5.2.10, we observe that:

- The trend, which is represented by the smoothed value, is descending for the turnover and ascending for EBIT
- In the case of forecast, which is represented by the predicted value, when compared with the real measured value we observe that in the case of turnover the trend of predicted values is similar with the real data, but in the case of EBIT the trend of predicted values isn't similar with the real data.

3. Research report on SC Nutrientul SA and SC Trameco SA

Author: Cociuba Mihail Ioan

S.C. Nutrientul S.A. is a company activating in the field of fodders, the company was founded in 1972 and it was privatized in 1991 using the MEBO method which gave the employees the possibility of becoming shareholders. The company is also listed on the Bucharest Stock Market, ticket (NUTP), having a capitalization of over 9 million RON, the last trading price was at 30 RON/share, in the last year the price range was between 30-45 RON/share. S.C.Nutrientul SA Palota shares are listed on III-R, RASDAQ section of the Bucharest Stock Exchange under the symbol NUTP. This company has in the last 10 years a permanent number of employees of over 150, and a turnover exceeding 5.000.000. euro.

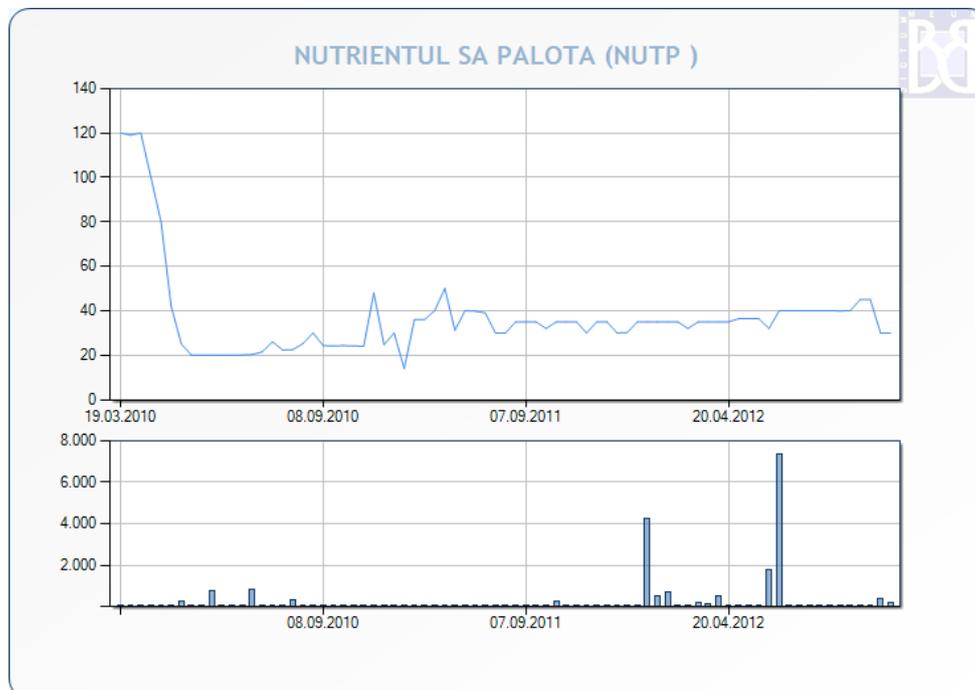


Figure no. 5.3.1. Last 3 years stock prices with Volum of transactions

Source: www.bvb.ro

Nutrientul S.A. went through a modernization process in order to remain competitive, in 2007 it expanded the production capacity to 20 tones/hour, with an average of 10000 tones/month; also the company is operating seven farms (pigs and chicken). With a production of over 50000 pigs/year and 600000 chicken/series Nutrientul Palota is an important player in the agricultural field.

Because the business strategy of the company is to integrate cereal cultivation with livestock the realize scale economies, also by using the land and local workforce the company has a positive impact on regional development.

Accounting and financial information from the period 2007-2012 were collected from www.bvb.ro of financial reports quarterly, half-yearly and annual submitted by the companies: S.C.Nutrientul S.A. and S.C. Trameco SA.

data are in RON

Period	Turnover	Net income	EBIT	L	R _{FE}	R _{DF}	R _{LG}	R _{LR}	ROA	ROE	Dr	Dst
2007S1	12449945	192141	519412	1,47	0,68	0,38	1,60	1,18	0,02	0,02	154,98	55,40
2007 S2	25649717	205056	1008224	1,98	0,86	0,37	1,16	0,74	0,02	0,01	200,15	115,94
2008 S1	28814148	6222	680984	2,32	1,01	0,43	1,19	0,98	0,01	0,00	123,27	28,94
2008 S2	63007417	672650	3244335	2,87	0,86	0,40	1,10	0,83	0,01	0,05	143,54	48,69
2009 S1	66200918	3671784	6345441	3,05	0,38	0,34	1,13	0,93	0,08	0,21	111,79	25,05
2009 S2	131916712	2938933	7445979	3,49	0,61	0,34	1,10	0,80	0,09	0,17	104,90	43,15
2010 S1	66305077	4022956	6713649	2,57	0,42	0,28	1,19	1,07	0,08	0,19	125,57	14,97
2010 S2	150824802	3295148	7783805	3,34	0,68	0,27	1,11	0,95	0,08	0,16	127,40	23,06
2011 S1	84147667	1054522	3307451	3,12	0,82	0,24	1,11	1,06	0,04	0,05	136,58	6,47
2011 S2	171177839	1214049	5396850	3,92	0,95	0,23	1,05	0,71	0,05	0,05	118,33	57,65
2012 S1	75357170	681447	12718941	3,15	0,80	0,20	1,06	0,88	0,12	0,03	140,61	28,81

Table no. 5.3.2. Evolution of the main indicators of the company Nutrientul Palota S.A in the period 2007-2012

From the table 5.3.2., we see that in the analyzed period the leverage ratio is with more than one, which shows that the company depend on external financing sources, particularly the short term debts, because the rate financial debts recorded low and decreasing values, less than 0,5. With a financial expenses ratio greater than 0.6 and a leverage ratio greater than 1, this company can not contract new loans, according to banking rules.

General liquidity ratio and the current ratio recorded values close to 1 and a slight decreasing tendency, reflecting the fact that Nutrientul Palota S.A, is able to pay its short-term debts only from current assets owned. ROE and ROA were recorded value of greater than 5% in the last three years, 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 declining but is still very high, which is which is a weakness of the company.

And, the average length of rotation of stocks is large, even if shows a decreasing trend from year to year.

From the table no. 5.3.3, we note that, in the period 2007-2012, the turnover stood in the range [12.449.945, 171.177.839], with an average of 79.622.856 Ron and a relatively low coefficient of variation, which shows that there are relatively low variations in turnover, so a predictability of turnover is high.

Indicators	Average	Minimum	Maximum	Standard deviation	Coefficient of variation
Turnover	79622856	12449945	171177839	51832189,21	0,650971
EBIT	5015006	519412	12718941	3725951,909	0,742961
L	2,844392	1,467653	3,922537	0,709005903	0,249265
ROA	0,055925	0,011298	0,124914	0,038669188	0,691453
ROE	0,085331	0,000454	0,205133	0,078578048	0,920866

Table no. 5.3.3

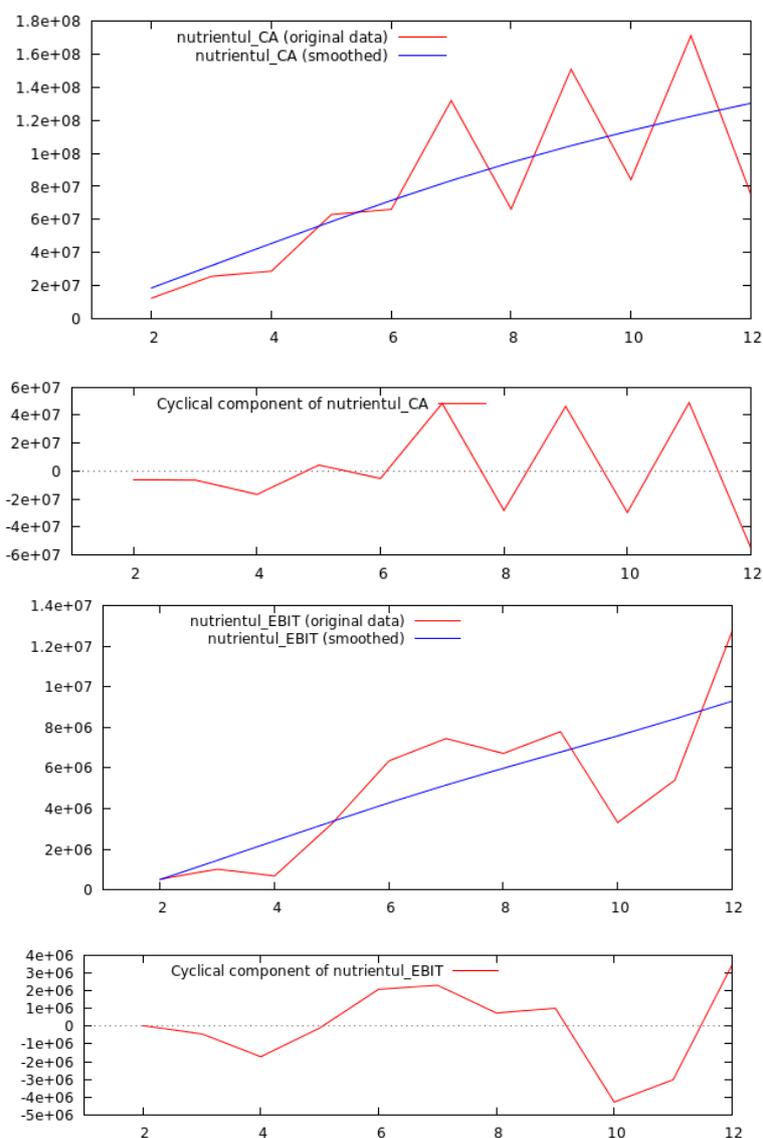
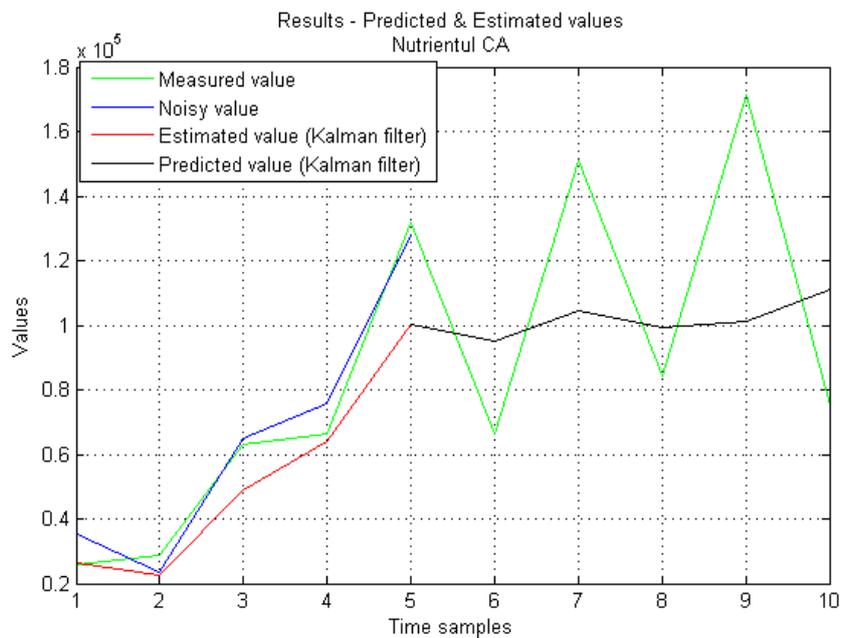
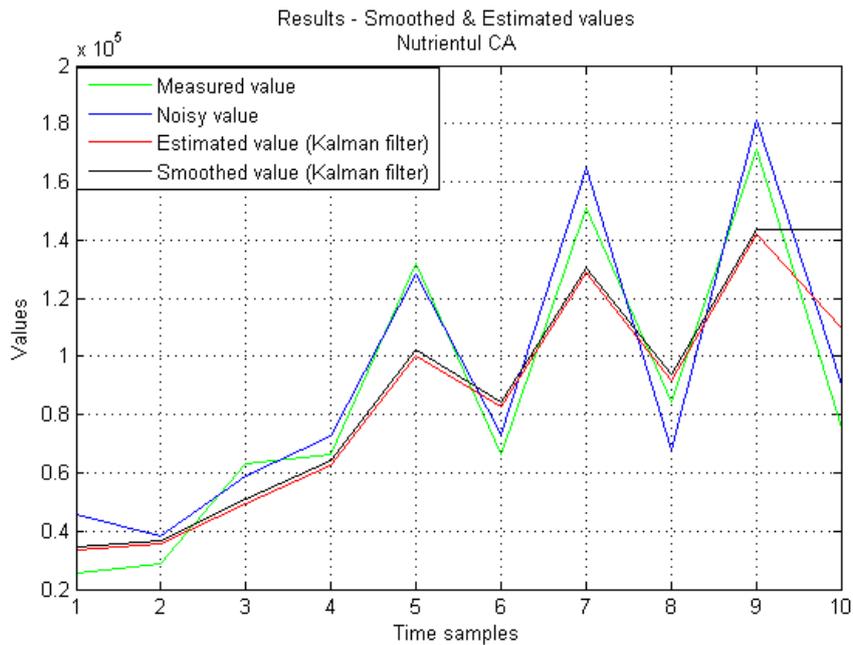


Figure no. 5.3.4. Turnover and EBIT trend

From Figure no.5.3.4, we note that both turnover and the earnings before interest and taxes shows an clearly increasing trend the entire period analyzed, which is the strength of the company Nutrientul Palota SA.

The highest volatility in the period 2009-2012 is register by ROE. The leverage ratio stood in the range [1,467653, 3,922537], with an average of 2,844392 and a low coefficient of variation, which shows that there are low variations in leverage ratio and predictability of leverage ratio is high.



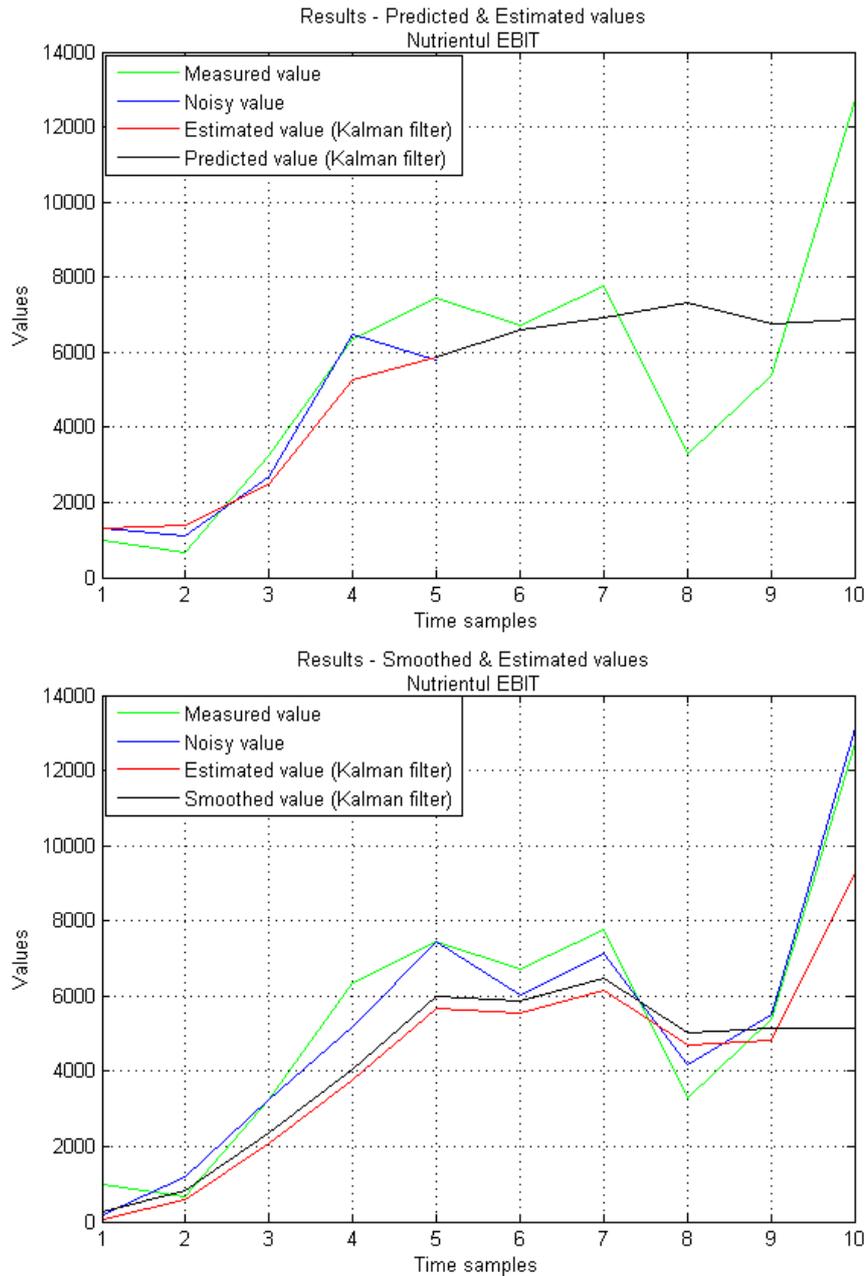


Figure no. 5.3.5.

The graphs above are the result of applying the Kalman filter on the company Nutrientul S.A. turnover and EBIT, using the financials data to estimate, smooth and forecast.

In the case of Nutrientul S.A. company from the Fig. 5.3.5, we observe that:

- The trend, which is represented by the smoothed value, is ascending for the turnover and constant for EBIT;

- In the case of forecast, which is represented by the predicted value, when compared with the real measured value we observe that in the case of turnover and EBIT the trend of predicted values isn't similar with the real data.

S.C. TRAMECO SA Oradea is a company activating in the field of intern/international transportation and constructions , the company was founded in 1991, has over 200 employees. The company is also listed on the Bucharest Stock Market, ticket (TRAM), having a capitalization of approximately 2 million RON, the last trading price was at 2.13 RON/share, in the last year the price range was between 1.28-3.3 RON/share.

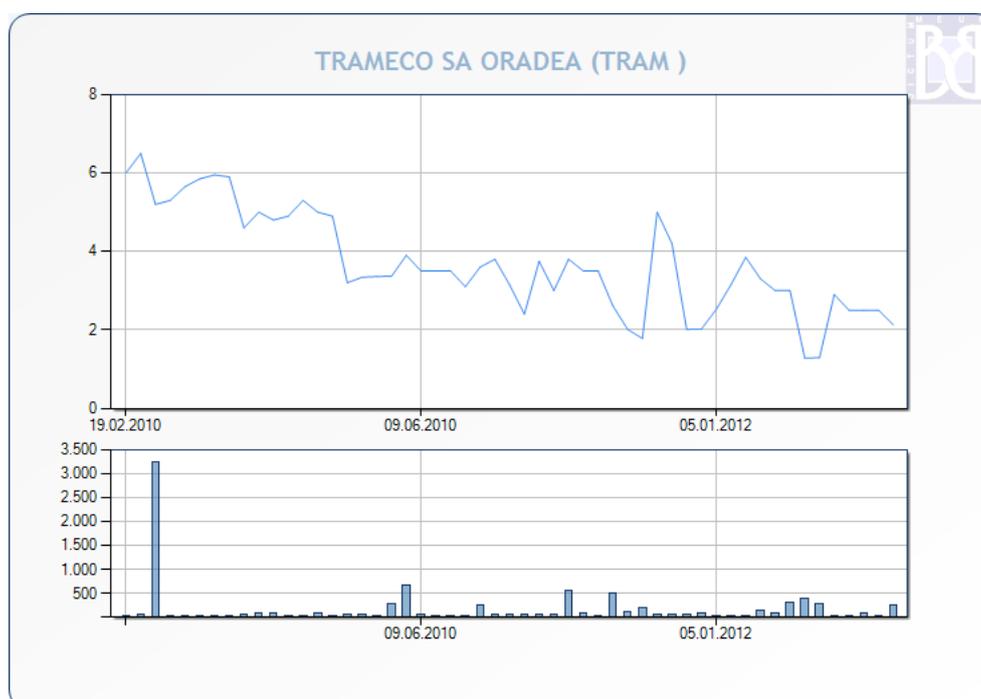


Figure no. 5.3.6. Last 3 years stock prices with Volum of transactions
Source: www.bvb.ro

data are in RON

Period	Turnover	Net income	EBIT	L	R _{FE}	R _{DF}	R _{LG}	R _{LR}	ROA	ROE	Dr	Dst	Da
2007Q1	25891574	1629979	2630473	1,42	0,25	0,23	1,57	1,46	0,08	0,12	53,58	6,00	0,79
2007Q2	25391287	1385934	2273376	1,38	0,28	0,22	1,54	1,42	0,07	0,10	108,9	13,03	0,77
2007Q3	25694307	1384751	2155883	1,38	0,49	0,25	1,53	1,41	0,06	0,10	172,3	19,36	0,76
2007Q4	24742036	869696	1560759	1,30	0,16	0,20	1,48	1,35	0,05	0,06	217,8	29,09	0,75
2008Q1	25853108	1269859	1836800	1,35	0,68	0,27	1,51	1,38	0,05	0,09	60,69	6,51	0,74
2008Q2	26024617	927846	1428216	1,31	0,53	0,25	1,47	1,34	0,04	0,06	116,6	12,94	0,76
2008Q3	24246178	660842	1077110	1,20	0,54	0,24	1,47	1,32	0,03	0,04	170,5	23,03	0,73
2008Q4	27767634	1027857	1370782	1,33	0,77	0,28	1,46	1,35	0,04	0,07	242,0	21,51	0,78

2009Q1	22010445	9700	304292	1,02	0,32	0,21	1,45	1,26	0,01	0,00	49,62	9,37	0,71
2009Q2	24298118	403074	625833	1,09	0,64	0,26	1,48	1,31	0,02	0,03	107,8	14,73	0,74
2009Q3	25507556	185652	382295	1,08	0,42	0,23	1,44	1,29	0,01	0,01	150,8	19,24	0,78
2009Q4	21158069	-76810	49528	0,86	0,58	0,24	1,54	1,28	0,00	0,00	180,3	38,18	0,71
2010Q1	30007326	421501	557450	1,15	0,45	0,25	1,44	1,34	0,02	0,03	49,61	3,56	0,88
2010Q2	25601855	36684	127469	0,92	0,49	0,25	1,52	1,35	0,00	0,00	85,42	11,24	0,83
2010Q3	27266614	188617	260456	0,93	0,63	0,26	1,55	1,40	0,01	0,01	126,0	13,06	0,88
2010Q4	29301101	192367	204573	0,93	1,99	0,24	1,53	1,42	0,01	0,01	155,9	12,29	0,95
2011Q1	24637825	41600	75586	0,69	0,75	0,27	2,02	1,75	0,00	0,00	31,69	5,08	0,90
2011Q2	28161755	102519	167408	0,75	0,21	0,26	1,78	1,64	0,01	0,01	61,10	5,63	1,01
2011Q3	26958789	87911	150284	0,62	0,66	0,27	2,16	1,95	0,01	0,01	74,42	8,75	1,03
2011Q4	27900063	146850	230358	0,57	0,42	0,27	2,50	2,31	0,01	0,01	85,24	8,05	1,11

Table no. 5.3.7. Evolution of the main indicators of the company Trameco S.A in the period 2007-2011

From the table no. 5.3.7., we see that until 2009 the leverage ratio is with more than one, which shows that the company depended on external financing sources, particularly the short-term debts, because the rate financial debts recorded low values, less than 0,3. But, since since second quarter of 2010, leverage becomes less than one and shows a decreasing tendency, which is a good thing for company.

General liquidity ratio and the current ratio recorded values more than 1 and a increasing tendency in the last two years, reflecting the fact that Trameco S.A, is able to pay its short-term debts only from current assets owned. ROE and ROA were recorded low values in the last three 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 high, which is a weakness of the company. The average length of rotation of stocks and the rotational speed of fixed assets by the turnover recorded very good values and shows positive trends for the company.

Indicators	Average	Minimum	Maximum	Standard deviation	Coefficient of variation
Turnover	25921013	21158069	30007326	2181655,133	0,084166
EBIT	873446,6	49528	2630473	844331,9964	0,966667
L	1,064045	0,574615	1,422430434	0,270717364	0,254423
ROA	0,026342	0,001665	0,080193264	0,024934739	0,946595
ROE	0,038296	-0,00488	0,123371701	0,04045064	1,056265

Table no 5.3.8.

From the table 5.3.8, we note that, in the period 2007-2011, the turnover stood in the range [21.158.069, 30.007.326], with an average of 25.921.013 Ron and a very low

coefficient of variation, which shows that there are very low variations in turnover, so a predictability of turnover is very high.

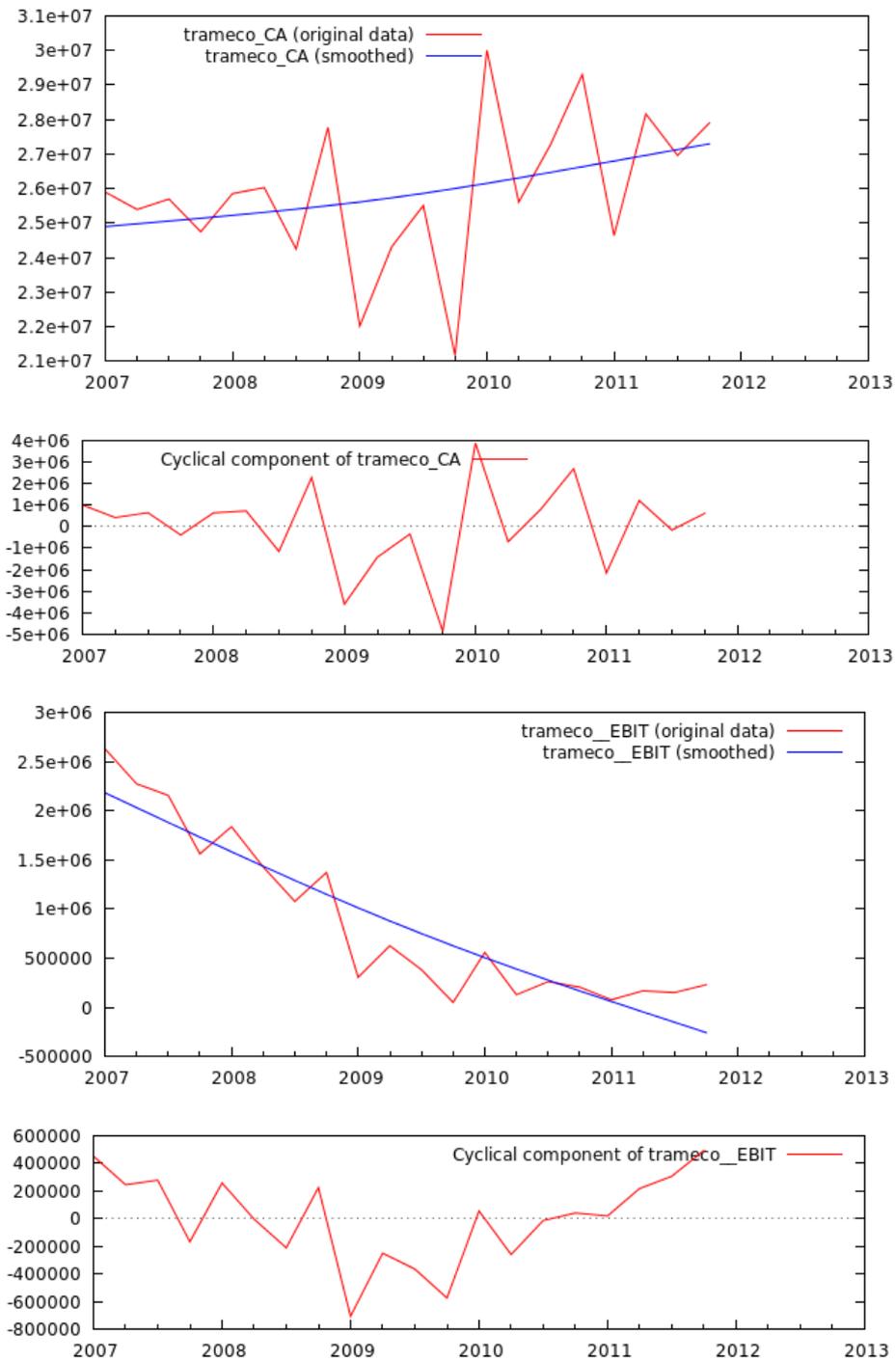


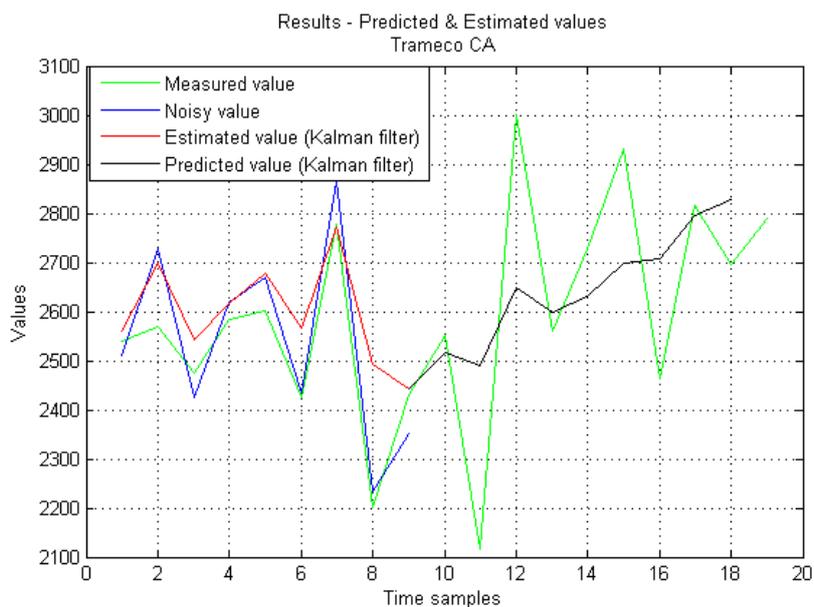
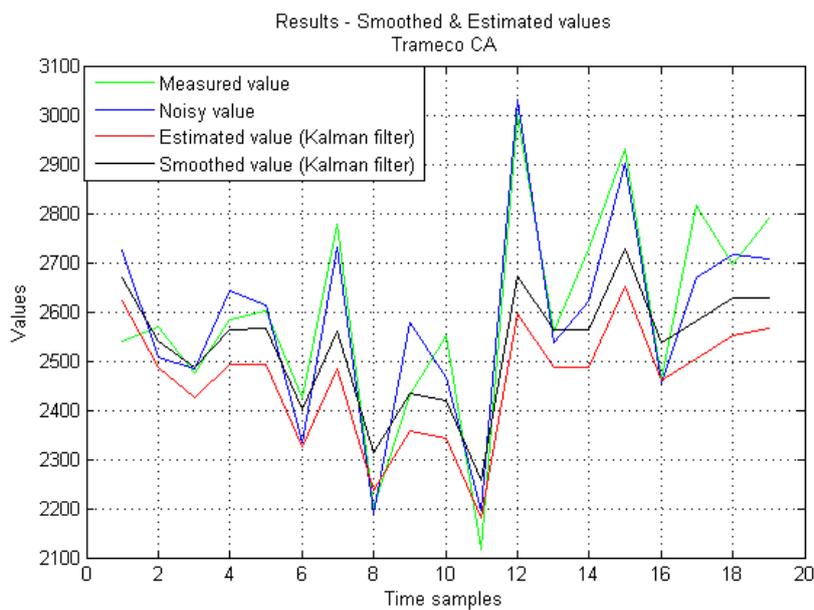
Figure no. 5.3.9. Turnover and EBIT trend

From Figure no.5.3.9, we note that turnover shows a slightly increasing trend in the entire period analyzed, which is strength of the company Trameco SA. Instead, the earnings before interest and taxes shows clearly a decreasing trend, and having a high

value of coefficient of variation, shows that there are large variations in EBIT, so a predictability of EBIT is low.

The highest volatility in the period 2007-2011 is register by ROE. The leverage ratio stood in the range [0,57461, 1,42243], with an average of 1,064045 and a low coefficient of variation, which shows that there are low variations in leverage ratio and predictability of leverage ratio is high.

In the following, I apply the Kalman filter on the company Trameco S.A. turnover and EBIT, using the financials data to estimate, smooth and forecast.



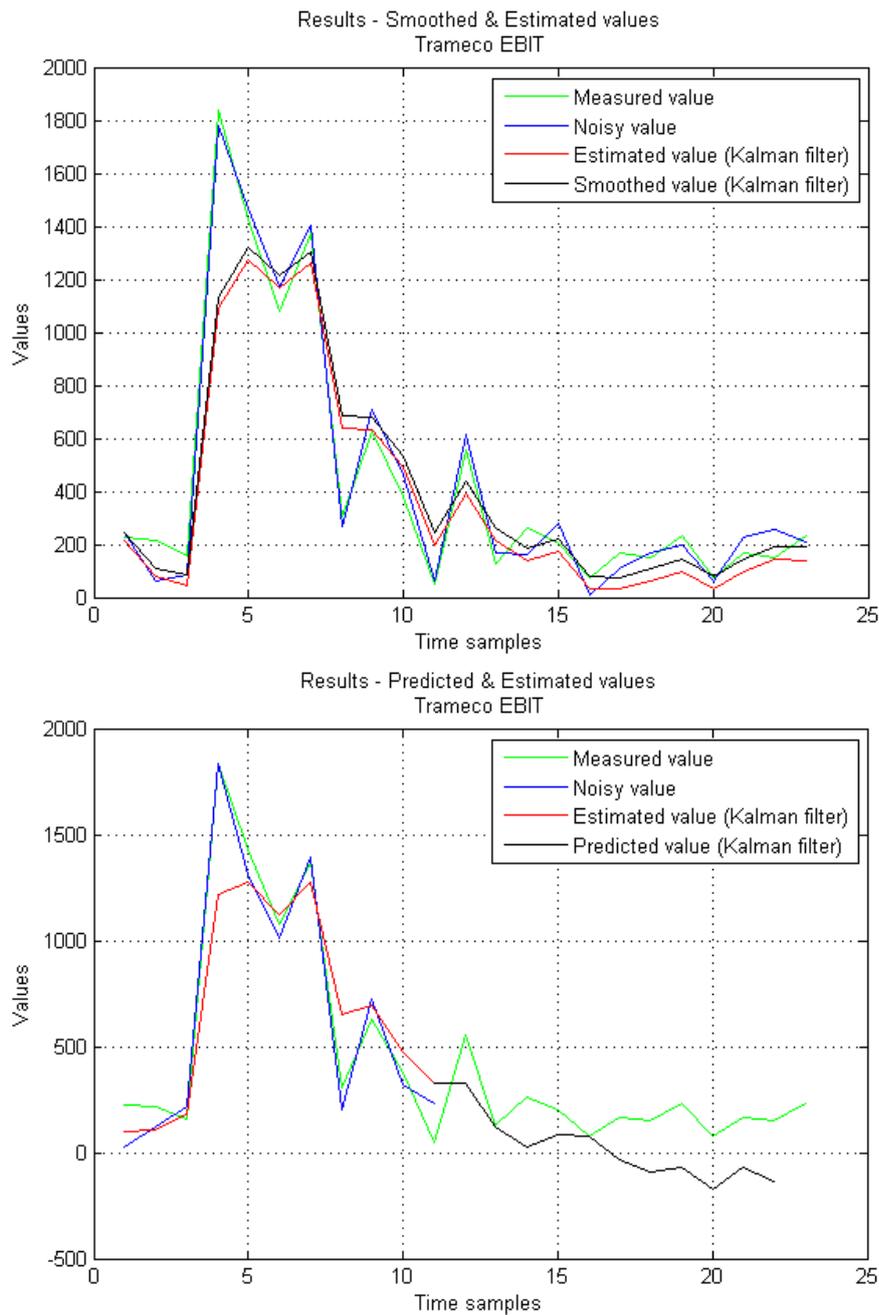


Figure no. 5.3.10.

In the case of Trameco S.A. company from the Fig. 5.3.10, we observe that:

- The trend, which is represented by the smoothed value, is ascending for the turnover and descending for EBIT;
- In the case of forecast, which is represented by the predicted value, when compared with the real measured value we observe that in the case of turnover and EBIT the trend of predicted values is similar with the real data.

4. Research report on SC Calipso SA and SC Constructii Bihor SA

Author: Otgon Cristian Ioan, Sabău – Popa Claudia Diana

SC Calipso SA founded in 1952 in Oradea has diverse history in the public alimentation area of Oradea. After 1990, SC Calipso SA began a major reorganization so it's activity could be developed on proper sustainable economic bases.

The main activity of this company is food services. The company also owns a number of commercial shops, which are rented. SC Calipso SA has a tradition of almost 20 years in the food sector and the investment in the last period allowed it to develop a high production capacity through 2 own laboratories. In the near future, the managers of this company intend to expand their product distribution area and surrounding counties. Beyond that, the company managers have invested in a new field: tourism. Starting 25.09.2012 they opened Doubletree by Hilton Oradea, the most ambitious project in the local area, a 5-star hotel complex in partnership with prestigious international hotel chain, Hilton International Manage.

Calipso shares are listed on II, regulated section of the Bucharest Stock Exchange under the symbol CAOR. This company has in the last 5 years a permanent number of employees of over 70 and a turnover that exceed 1.500.000 euro/year, so it has a significant role in the regional economy.



Figure no. 5.4.1. Last 3 years stock prices with Volum of transactions

Source: www.bvb.ro

Accounting and financial information from the period 2009-2012 were collected from www.bvb.ro of financial reports quarterly, half-yearly and annual submitted by the companies: S.C.Calipso S.A. and S.C.Constructii Bihor SA.

data are in RON

Period	Turnover	Net income	EBIT	L	R _{DF}	R _{LG}	R _{LR}	ROA	ROE	Dr	Dst	Da
2009 Q1	1701677	607345	712703	0,02	0,00	27,42	27,32	0,011	0,010	1533,20	8,01	0,03
2009 Q2	3588944	1120501	1296138	0,04	0,00	15,06	14,99	0,020	0,019	1369,20	14,96	0,06
2009 Q3	5502812	1637396	1904073	0,03	0,00	12,43	12,35	0,030	0,027	915,91	10,36	0,09
2009 Q4	7172523	1891703	2216096	0,04	0,00	9,76	9,70	0,034	0,031	703,54	7,67	0,11
2010 Q1	1324234	32342	34523	0,07	0,00	2,31	2,27	0,001	0,001	210,28	44,40	0,02
2010 Q2	3087584	751978	873850	0,04	0,00	5,95	5,89	0,013	0,012	171,88	16,95	0,05
2010 Q3	4688020	1100193	1285476	0,05	0,00	4,44	4,39	0,019	0,018	143,51	10,94	0,07
2010 Q4	6205046	1400453	1639084	0,04	0,00	4,02	3,97	0,024	0,022	15,36	8,87	0,09
2011 Q1	1417510	288717	348560	0,11	0,00	1,43	1,41	0,005	0,005	13,49	39,65	0,02
2011 Q2	2927918	545138	658714	0,17	0,00	1,33	1,32	0,008	0,008	25,80	19,01	0,04
2011 Q3	4559867	942990	1137737	0,08	0,03	3,15	3,11	0,015	0,014	41,01	10,92	0,06
2011 Q4	6056335	1251432	1517013	0,29	0,14	1,34	1,32	0,017	0,018	106,79	7,93	0,07
2012 Q1	1295970	249945	503827	0,44	0,25	1,29	1,27	0,005	0,004	93,48	37,13	0,01
2012 Q2	2710402	-80299	377370	0,51	0,27	0,44	0,43	0,004	0,001	101,79	16,48	0,03
2012 Q3	4270048	-523271	-506962	0,60	0,33	0,43	0,38	0,005	0,008	81,18	30,87	0,04

Table no 5.4.2. Evolution of the main indicators of the company Calipso S.A in the period 2009-2012

From the table 5.4.2., we see that until 2009 the leverage ratio is less than one and the rate financial debts recorded low values, less than 0,3, which shows that the company has good financial autonomy.

General liquidity ratio and the current ratio recorded values more than 1 until the end of 2011, reflecting the fact that Calipso S.A, is able to pay its short-term debts only from current assets owned. But, in 2012, both general liquidity ratio and the current ratio recorded low values, less than 1, due to increased short-term debt of the company. ROE and ROA were recorded very low values throughout the period, 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 very high and the rotational speed of fixed assets by the turnover is very low, which is a weakness of the company. The average length of stocks rotation recorded good values.

Indicators	Average	Minimum	Maximum	Standard deviation	Coefficient of variation
Turnover	3767259	1295970	7172523	1921648,302	0,510092
EBIT	933213,5	-506962	2216096	735306,8876	0,78793
L	0,169177	0,023515	0,597999057	0,194914045	1,152129
ROA	0,01338	-0,00457	0,033928878	0,010869567	0,81238
ROE	0,011921	-0,00769	0,030942212	0,010830423	0,908547

Table no. 5.4.3

From the table 5.4.3, we note that, in the period 2009-2012, the turnover stood in the range [1295970, 7172523], with an average of 3767259 Ron and a low coefficient of variation, which shows that there are low variations in turnover, so a predictability of turnover is high.

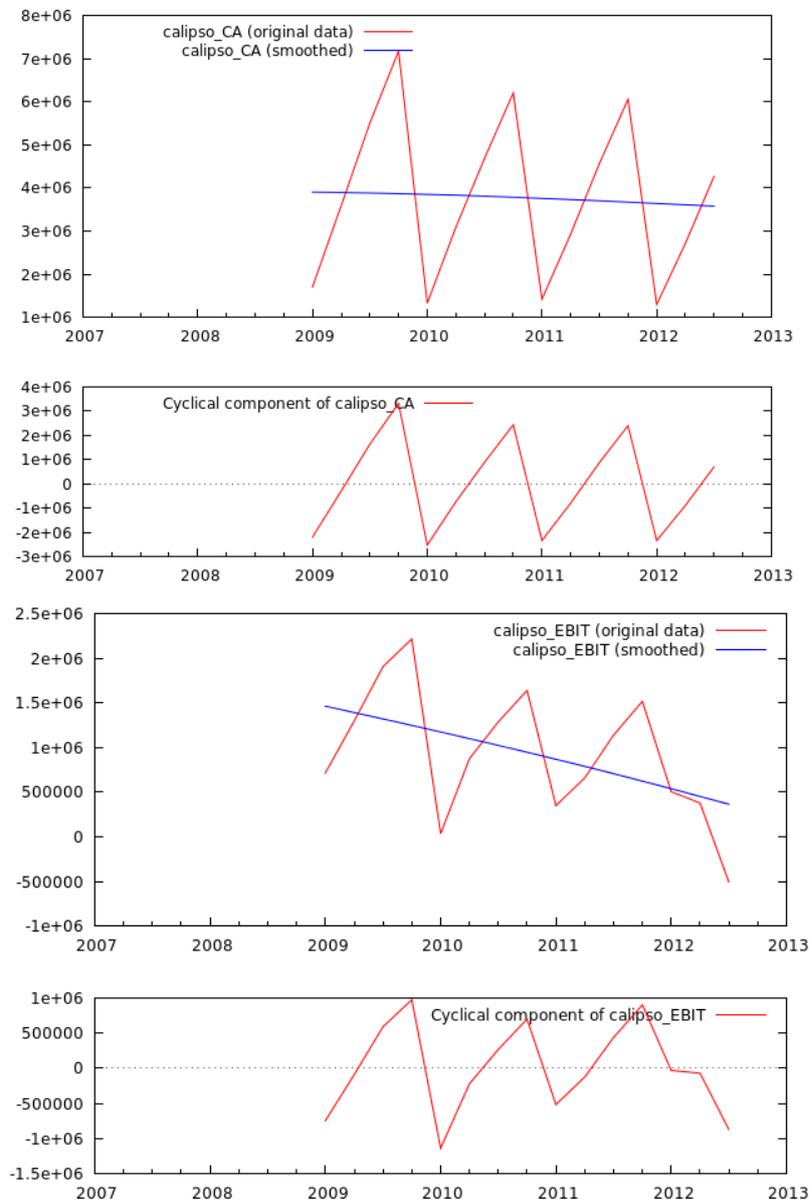
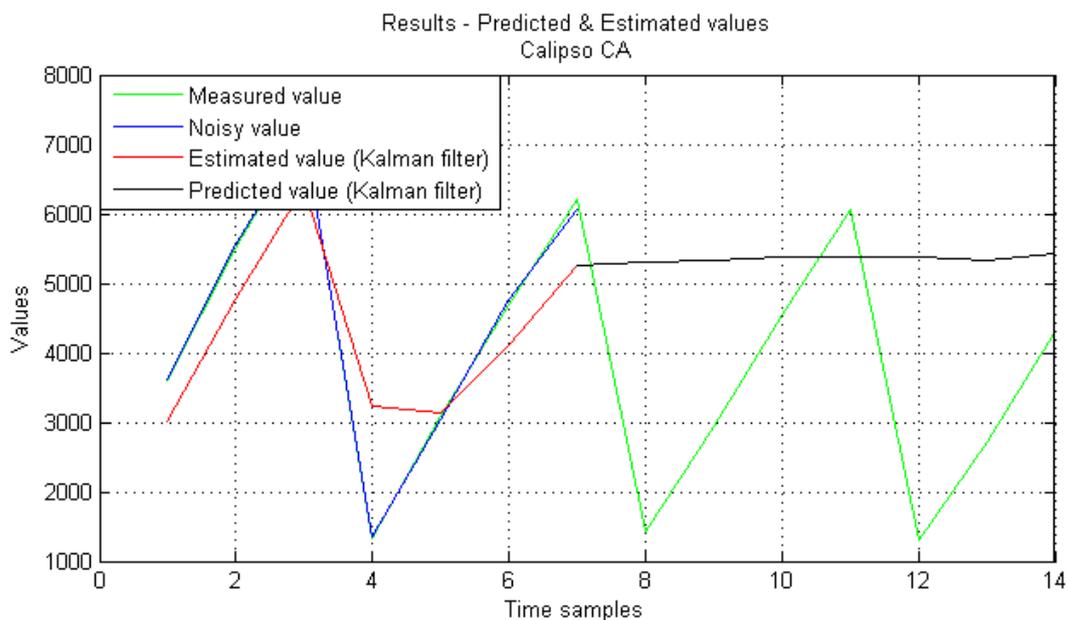
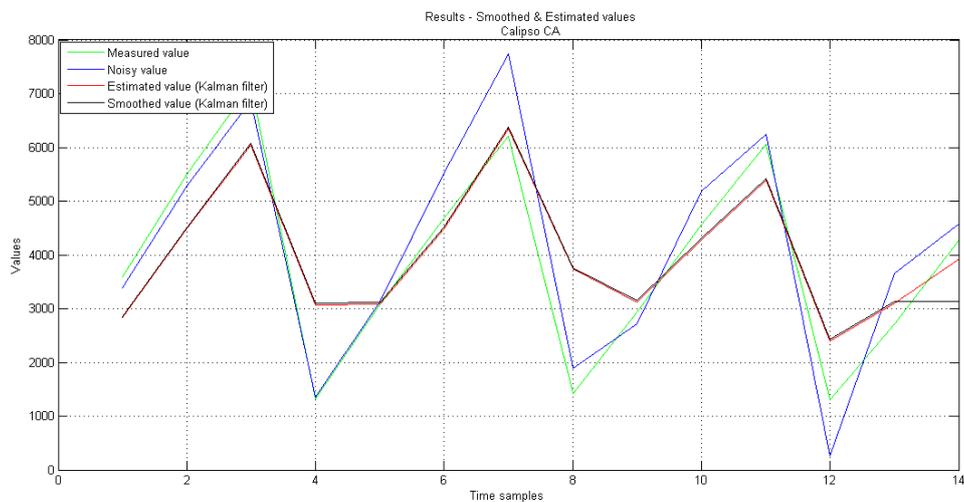


Figure no. 5.4.4. Turnover and EBIT trend

From Figure no.5.4.4, we note that turnover shows a relatively constant trend in the entire period analyzed, which is strength of the company Calipso S.A. Instead, the Earnings before interest and taxes shows clearly a decreasing trend.

The highest volatility in the period 2009-2012 is register by leverage ratio. It stood in the range [0,02351; 0,59799], with an average of 0,169177 and a high coefficient of variation, which shows that there are high variations in leverage ratio and predictability of leverage ratio is low.

In the following, we apply the Kalman filter on the company Calipso S.A. turnover and EBIT, using the financials data to estimate, smooth and forecast.



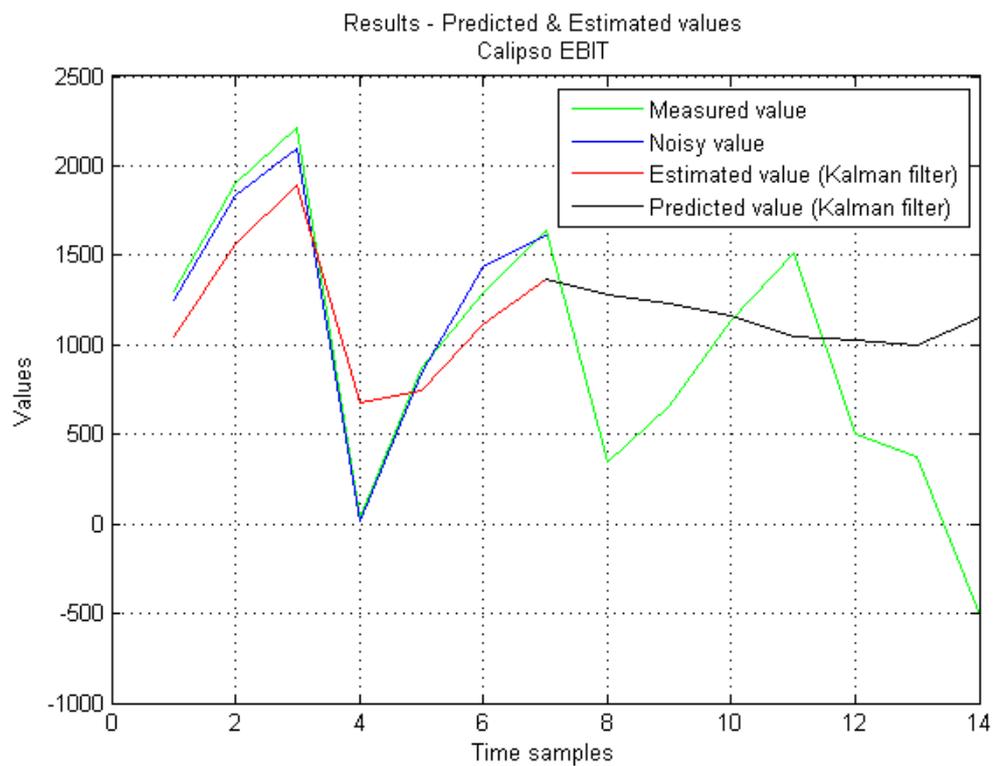
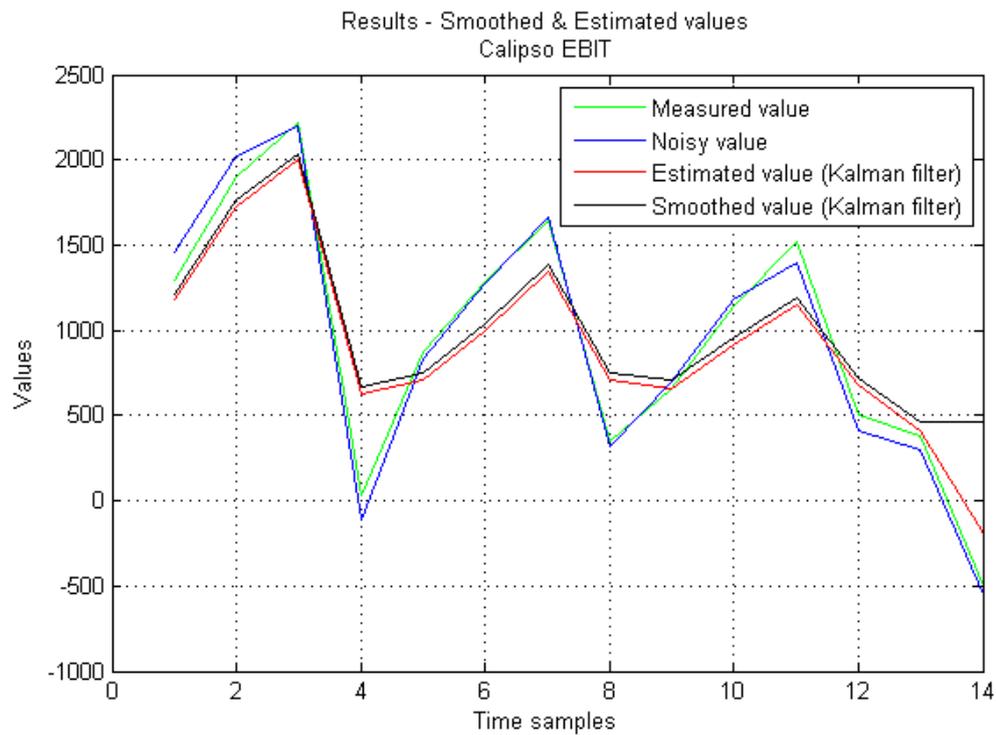


Figure no. 5.4.5.

In the case of Calipso S.A. company from the Fig. 5.4.5, we observe that:

- The trend, which is represented by the smoothed value, is descending for both turnover and EBIT;

- In the case of forecast, which is represented by the predicted value, when compared with the real measured value we observe that in the case of turnover the trend of predicted values is similar with the real data and in case of EBIT the trend of predicted values isn't similar with the real data.

SC Constructii Bihor SA, one of the most important players in the regional construction area, has developed major infrastructure projects, from which, the region has benefited greatly. The main activity of this company is focused on the realization of civil and industrial sewage water, apartment buildings, modernization and improvement of roads, bridges and road infrastructure. Constructii Bihor shares are listed on III-R, RASDAQ section of the Bucharest Stock Exchange under the symbol COBJ.

This company has in the last 5 years a permanent number of employees of over 200 and a turnover that exceed 10.000.000 euro so it has a significant role in the regional economy.

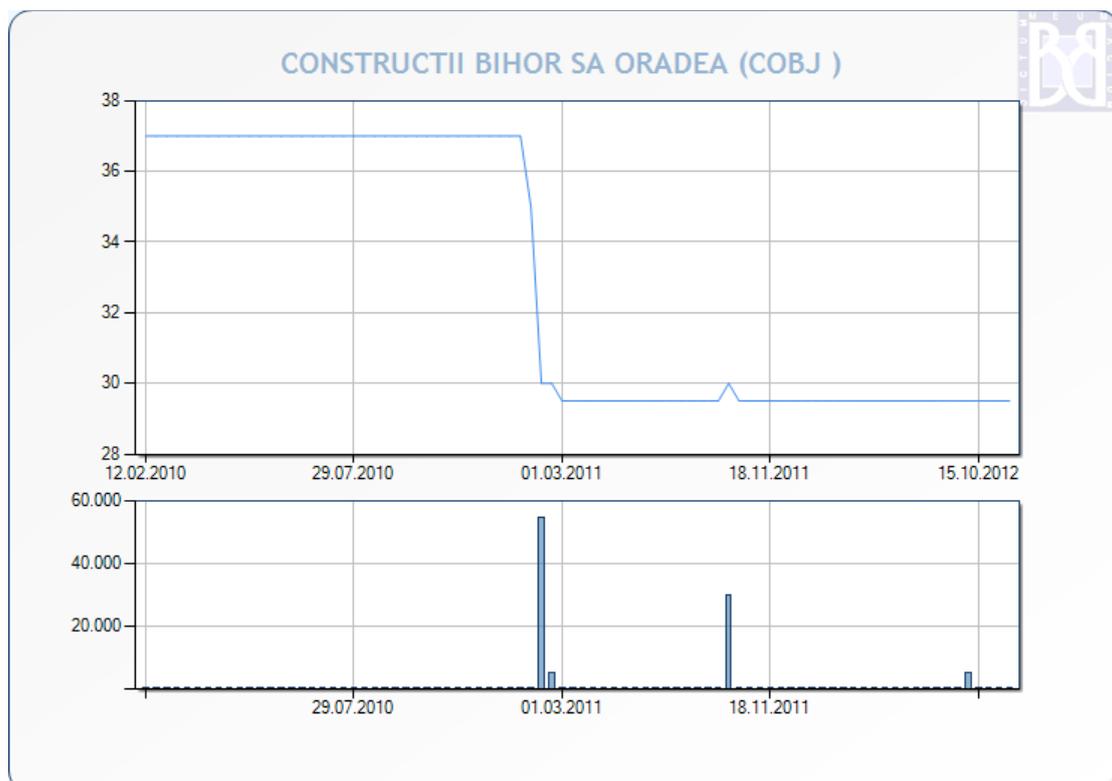


Figure no. 5.4.6. Last 3 years stock prices with Volum of transactions
Source: www.bvb.ro

data are in RON

Period	Turnover	Net income	EBIT	Net cash-flow	L	R _{DF}	R _{LG}	R _{LR}	ROA	ROE	Dr	Dst
2009 Q1	7538038	1188384	1388069	1360752	0,54	0,04	2,02	1,33	0,034	0,053	58,69	92,36
2009 Q2	21757604	1584358	2436505	2388297	0,57	0,03	2,09	1,36	0,056	0,068	67,35	14,96
2009 Q3	40487961	3037488	3537668	3479801	0,53	0,02	1,79	1,63	0,083	0,126	81,32	10,36
2009 Q4	54332970	1524158	1864684	1796983	0,57	0,01	1,99	1,87	0,044	0,067	66,12	7,67
2010 Q1	2881081	110361	167778	116264	0,41	0,01	2,14	1,97	0,005	0,005	216,8	44,40
2010 Q2	21757604	134463	206570	1820909	0,43	0,01	2,15	1,81	0,006	0,006	67,85	16,95
2010 Q3	25730422	1656694	2036250	2017027	0,55	0,01	1,38	0,95	0,051	0,071	88,43	10,94
2010 Q4	41287135	1120564	1536051	21513466	0,55	0,22	2,16	2,08	0,035	0,047	89,57	8,87
2011 Q1	1521108	298610	352044	298610	0,37	0,20	2,61	2,15	0,009	0,012	531,6	39,65
2011 Q2	13581889	812180	885676	883690	0,30	0,20	3,09	2,71	0,023	0,033	134,6	19,01
2011 Q3	30687061	1224946	1589188	1587202	0,39	0,24	2,78	2,27	0,037	0,049	95,27	10,92
2011 Q4	55443777	1212989	1879596	1877611	0,59	0,30	2,42	2,01	0,037	0,048	100,5	7,93
2012 Q1	6546864	179358	181344	179358	0,43	0,29	2,89	2,24	0,004	0,007	204,8	37,13
2012 Q2	55443777	1212989	1879596	1877611	0,59	0,30	2,42	2,01	0,037	0,048	50,13	16,48
2012 Q3	34817675	631713	633698	631713	0,59	0,28	2,38	1,96	0,012	0,024	120,4	30,87

Table no. 5.4.7. Evolution of the main indicators of the company Constructii Bihor S.A in the period 2009-2012

From the table 5.4.7., we see that until 2009 the leverage ratio is less than one and the rate financial debts recorded low values, less than 0,3, which shows that the company has very good financial autonomy.

General liquidity ratio and the current liquidity ratio recorded values more than 1, reflecting the fact that Constructii Bihor S.A is able to pay its short-term debts only from current assets owned. ROE and ROA recorded low values since 2011, so we can say that the activity within the company wasn't very efficient in term to fructification equity and total assets in the last two years. The average duration of collection of receivables is high and the rotational speed of fixed assets by the turnover is low, which is a weakness of the company. The average length of stocks rotation recorded good values.

From the table 5.4.8, we note that, in the period 2009-2012, the turnover stood in the range [1.521.108, 55.443.777], with an average of 27.587.664 Ron and a relatively low coefficient of variation, which shows that there are low variations in turnover, so a predictability of turnover is relatively high. From Figure no.5.4.9, we note that turnover shows a slightly increasing trend in the entire period analyzed, which is strength of the company Constructii Bihor S.A..

Indicators	Average	Minimum	Maximum	Standard deviation	Coefficient of variation
Turnover	27587664	1521108	55443777	19058900,39	0,690849
EBIT	1371648	167778	3537668	968977,8125	0,706433
Net cash-flow	2788620	116264	21513466	5259997,212	1,886237
L	0,494951	0,299781	0,593825274	0,09551758	0,192984
ROA	0,031399	0,00388	0,083093185	0,022341872	0,711548
ROE	0,044223	0,004804	0,126159279	0,032274854	0,729826

Table no. 5.4.8.

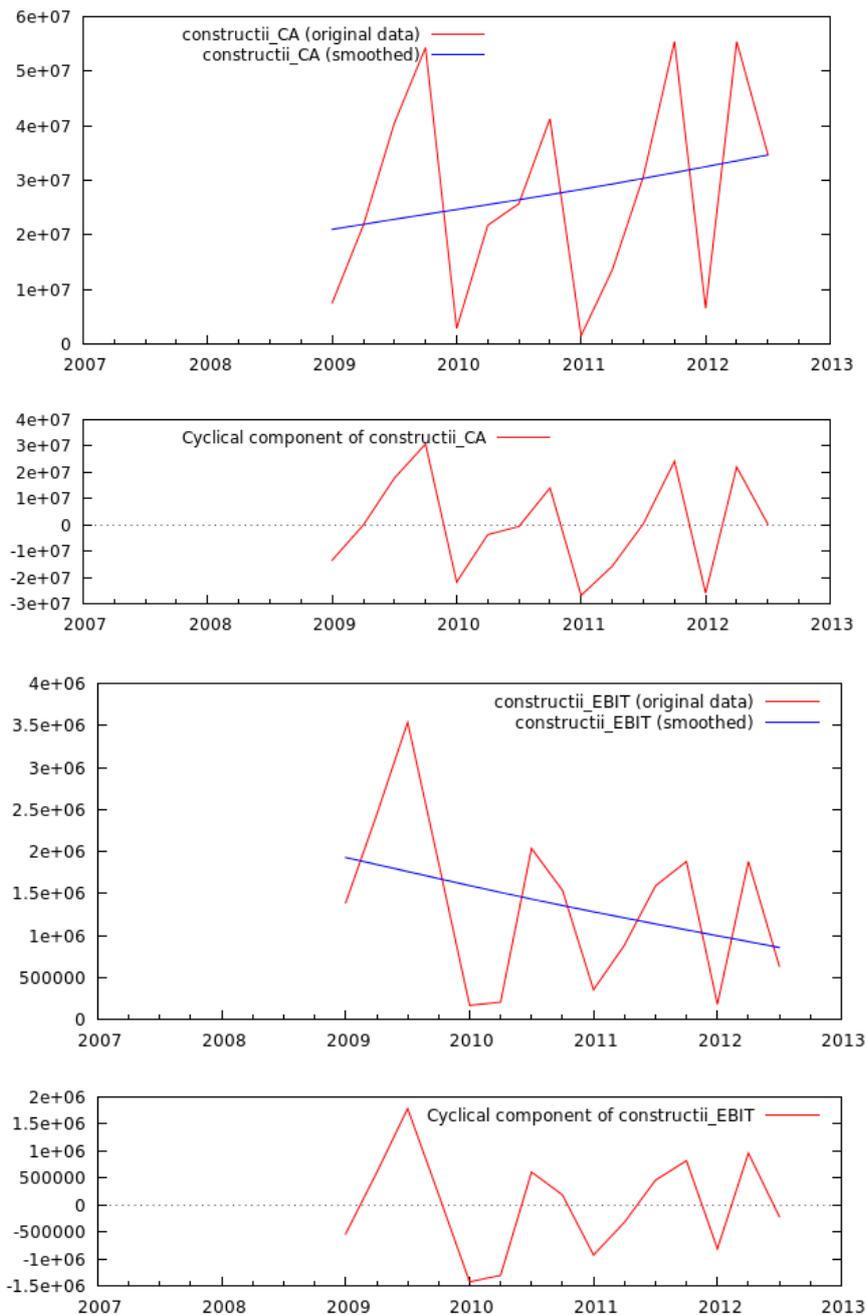
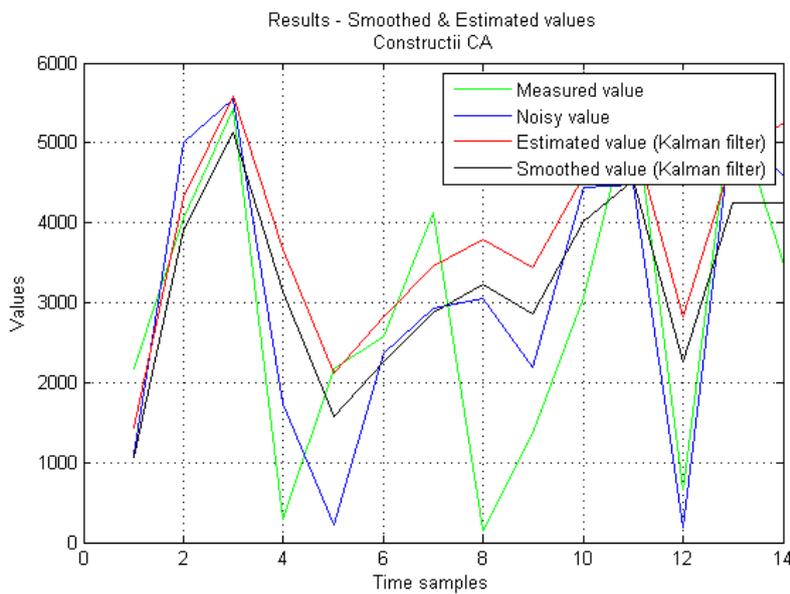
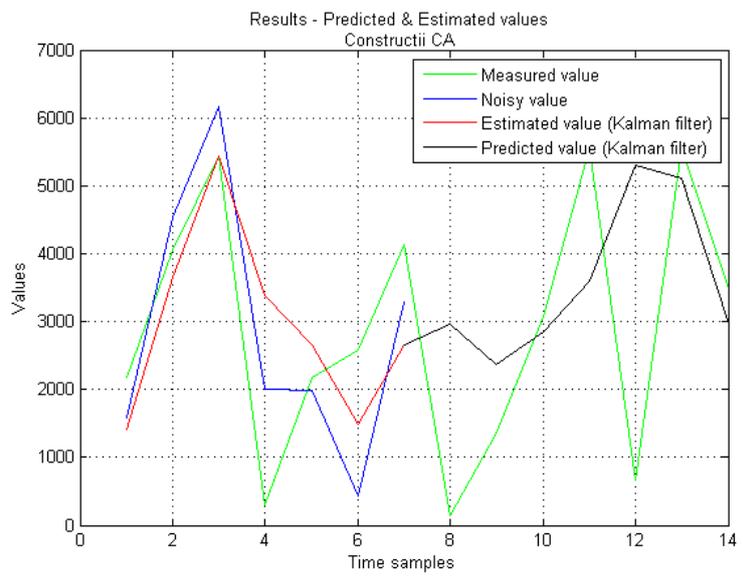


Figure no. 5.4.9. Turnover and EBIT trend

Instead, the Earnings before interest and taxes shows clearly a decreasing trend. Net Cash-flow stood in the range [116.264, 21.513.466], with an average of 2788620 Ron and a high coefficient of variation, which shows that there are high variations in cash-flow, so a predictability of cash-flow is low.

The lowest volatility in the period 2009-2012 is register by leverage ratio. It stood in the range [0,29978; 0,59382], with an average of 0,169177 and a very low coefficient of variation, which shows that there are very low variations in leverage ratio and predictability of leverage ratio is very high.

In the following, we apply the Kalman filter on the company Constructii Bihor S.A. turnover and EBIT, using the financials data to estimate, smooth and forecast.



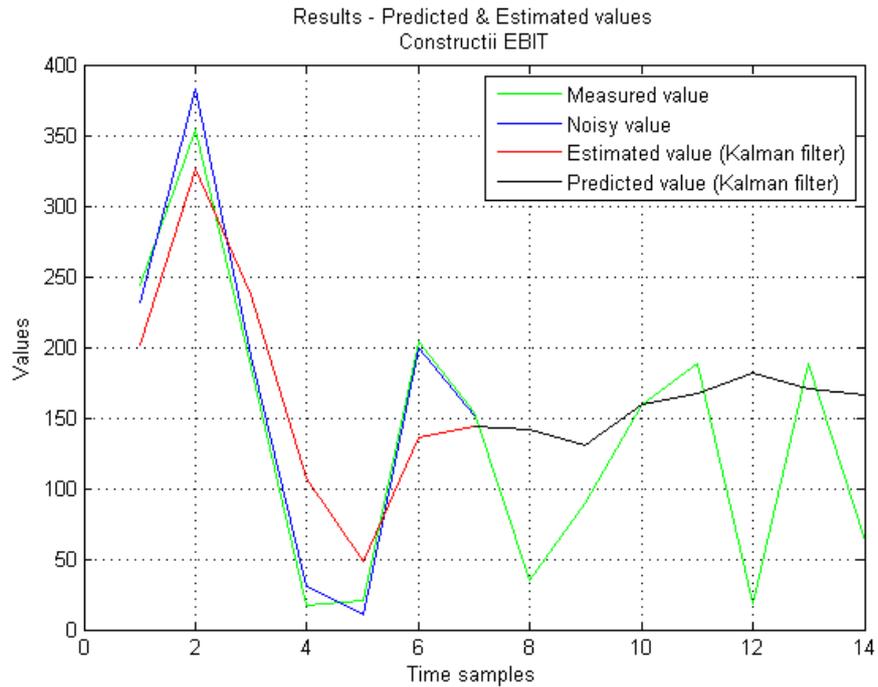


Figure no. 5.4.10

In the case of Constructii Bihor S.A. company from the Fig. 5.4.10, we observe that:

- The trend, which is represented by the smoothed value, is descending for the turnover;
- In the case of forecast, which is represented by the predicted value, when compared with the real measured value we observe that in the case of turnover and EBIT the trend of predicted values is similar with the real data.

5. Research report on SC Metalica SA and SC Simbeton Oradea SA

Author: Boloş Marcel Ioan

S. C. Metalica SA has a long and diverse history in the local and regional economy of Oradea and Bihor. SC Metalica S.A. Oradea comes from handicraft cooperatives "Minszki Lajos" founded in 1949 in Oradea, whose main activity was the production in small series of products household boilers, drums, white laundry, etc.

After 1990, Metalica SA kept a steady position in the national economy, being almost every year one of the top three national companies in the sector of appliances. Currently, the main products offered by the company are gas cookers, gas cooking heaters, solid fuel heating stoves.

Metalica shares are listed on III-R, RASDAQ section of the Bucharest Stock Exchange under the symbol MEOR. This company has in the last 5 years a permanent number of employees of over 150 and a turnover that exceed 5.000.000 euro/year, so it has a significant role in the regional economy.

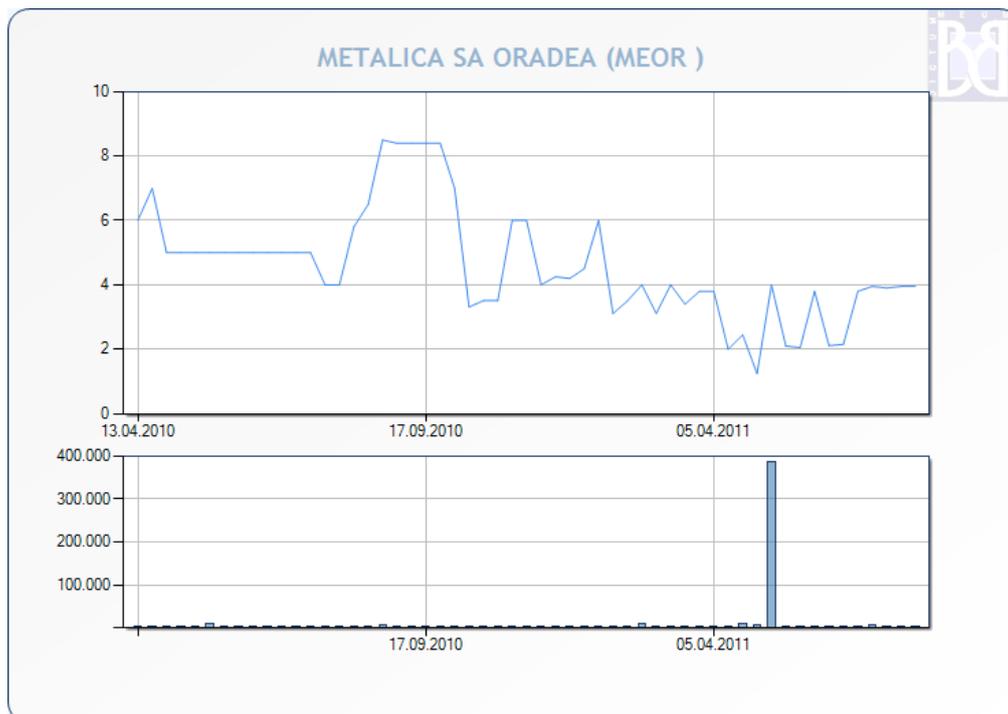


Figure no. 5.5.1. Last 3 years stock prices with Volum of transactions

Source: www.bvb.ro

Accounting and financial information from the period 2007-2012 were collected from www.bvb.ro of financial reports quarterly, half-yearly and annual submitted by the companies: S.C.Metalica S.A. and S.C.Simbeton SA.

data are in RON

Period	Turnover	Net income	EBIT	L	R _{FE}	R _{DF}	R _{LG}	R _{LR}	ROA	ROE	Dr	Dst	Da
2007 S2	19833542	376313	724182	0,56	0,30	0,01	1,77	1,09	0,03	0,02	156,38	107,54	0,83
2008 S1	11325745	433809	636983	0,49	0,18	0,00	1,95	1,11	0,03	0,03	136,69	105,43	0,48
2008 S2	19878683	148265	439267	0,59	0,21	0,00	1,80	0,76	0,02	0,01	127,47	175,19	0,81
2009 S1	7968697	-214064	-33352	0,70	-3,29	0,00	1,67	0,94	0,00	-0,01	233,17	180,65	0,31
2009 S2	20582499	91001	338848	0,76	0,36	0,00	1,64	1,03	0,01	0,01	227,71	137,32	0,71
2010 S1	6684971	-576108	-327907	1,93	-1,90	0,00	1,56	0,99	-0,01	-0,09	347,88	199,42	0,24
2010 S2	19591922	113003	735040	0,89	0,65	0,00	1,74	1,24	0,02	0,01	343,23	137,36	0,58
2011 S1	9678205	-177532	98466	0,86	11,05	0,00	1,77	1,15	0,00	-0,01	305,44	167,18	0,30
2011 S2	23438072	27043	609636	1,29	0,79	0,00	1,23	0,65	0,03	0,00	132,22	117,48	1,00
2012 S1	10026225	30477	327141	1,38	0,52	0,00	1,24	0,65	0,01	0,00	164,08	152,67	0,41

Table no. 5.5.2. Evolution of the main indicators of the company Metalica S.A in the period 2007-2012

From the table 5.5.2., we see that until 2010 the leverage ratio is less than one and the rate financial debts recorded very low values, almost 0, which shows that the company had very good financial autonomy. But since 2011, the leverage ratio becomes more than 1 and financial expenses ratio is more than 0,6, which shows that the company is dependent on short term debts.

General liquidity ratio recorded values more than 1, and the current liquidity ratio is relatively good reflecting the fact that Metalica S.A is able to pay its short-term debts only from current assets owned. ROE and ROA were recorded very low values throughout the period analyzed, so we can say that the activity within the company wasn't very efficient in term to fructification equity and total assets in the last two years. The average duration of collection of receivables and the average length of stocks rotation recorded very high values, which is a weakness of the company, showing that it can face a lack of liquidity.

From the table 5.5.3, we note that, in the period 2007-2012, the turnover stood in the range [6.684.971, 23.438.072], with an average of 14.900.856 Ron and a low coefficient of variation, which shows that there are low variations in turnover, so a predictability of turnover is high. From Figure no.5.5.4, we note that turnover shows a relatively constant trend, which is strength of the company Metalica S.A..

Indicators	Average	Minimum	Maximum	Standard deviation	Coefficient of variation
Turnover	14900856	6684971	23438072	6286285,792	0,421874
EBIT	354830,4	-327907	735040	352168,8746	0,992499
L	0,944959	0,489667	1,927575452	0,45375883	0,480189
ROA	0,013781	-0,01166	0,030176975	0,013604335	0,987159
ROE	-0,00314	-0,08618	0,027445131	0,031918523	-10,1647

Table no. 5.5.3.

Instead, the Earnings before interest and taxes shows a slightly decreasing trend. EBIT stood in the range [-327.907, 735.040], with an average of 354.830,4 Ron and a relatively high coefficient of variation, which shows that there are relatively high variations in EBIT, so a predictability of EBIT is low.

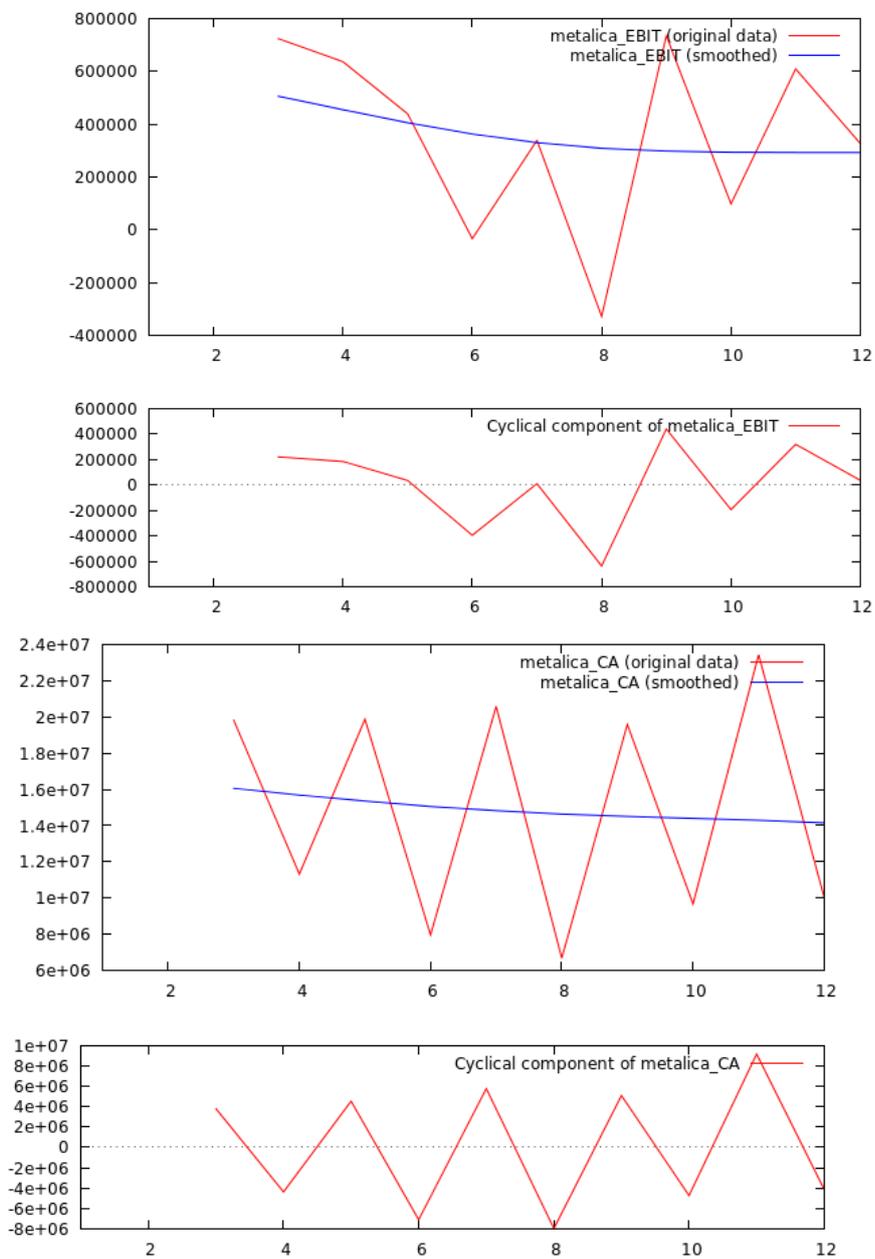
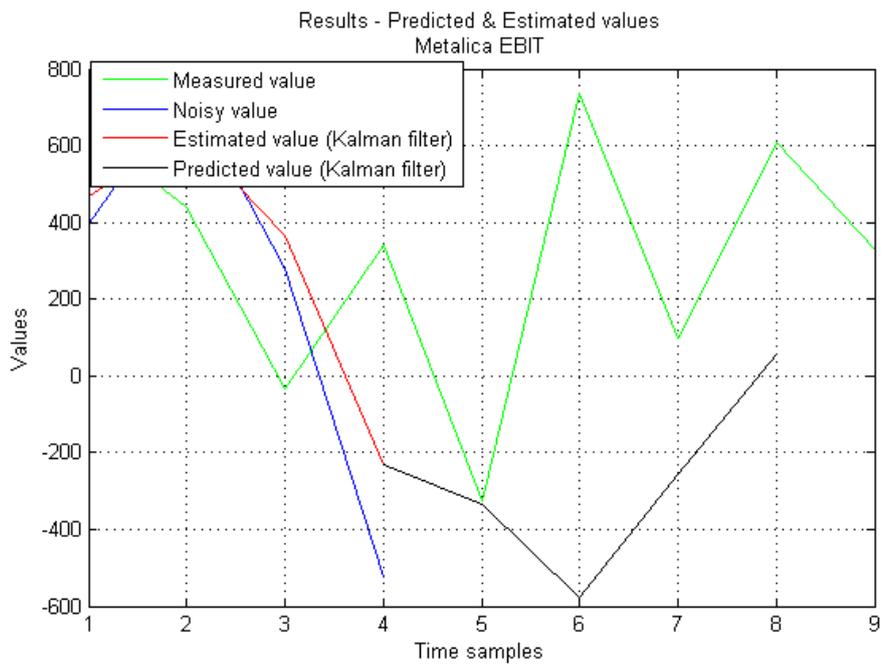
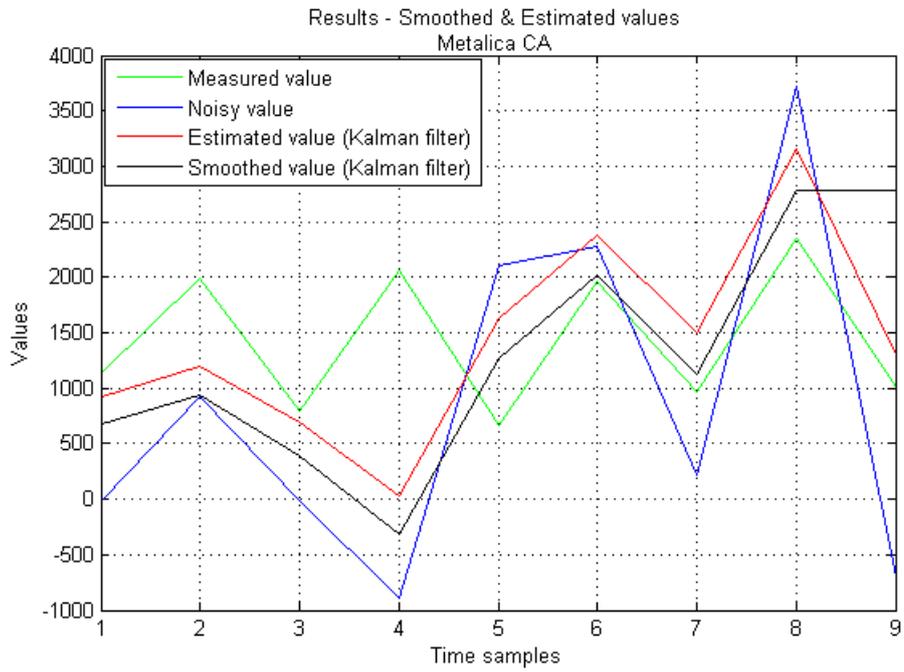


Figure no. 5.5.4. Turnover and EBIT trend

The highest volatility in the period 2009-2012 is register by ROE, which shows that there are very large variations in ROE and predictability of ROE is very low.



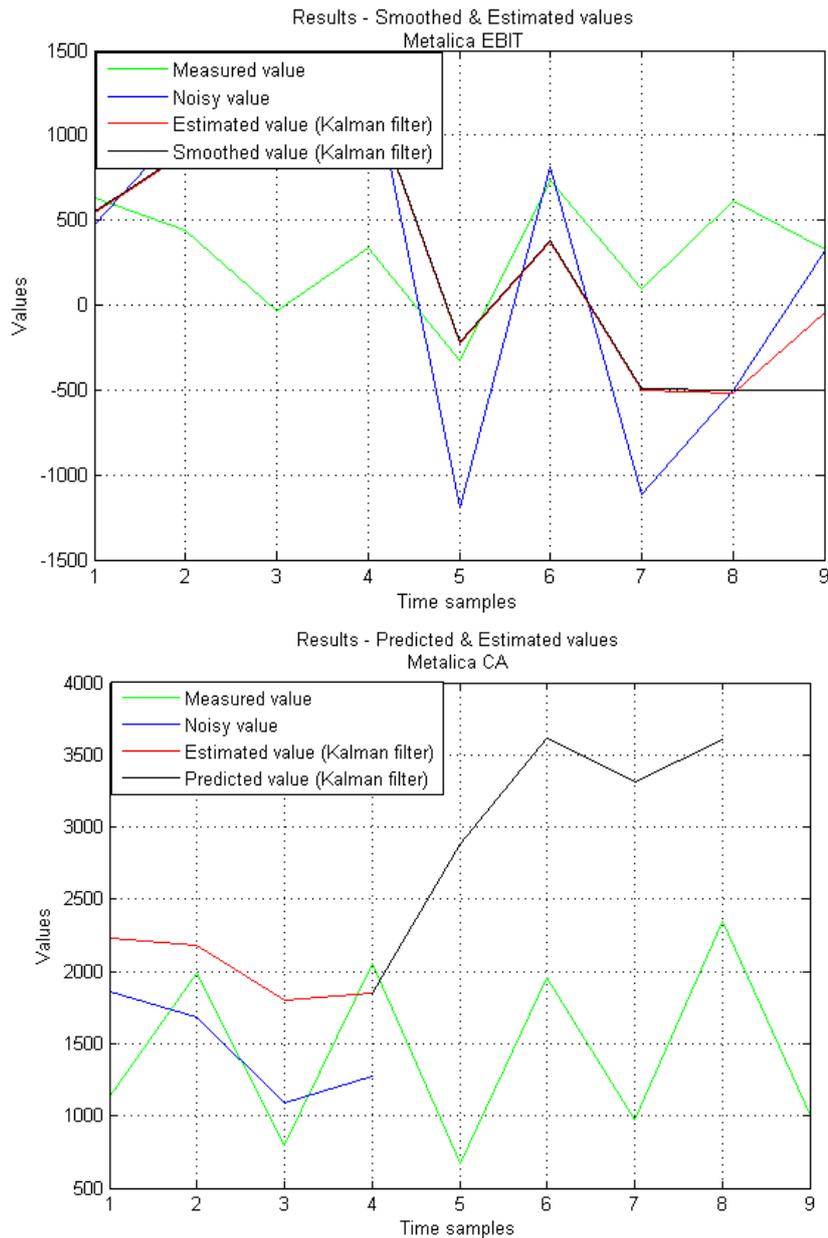


Figure no. 5.5.5

The graphs above are the result of applying the Kalman filter on the company Metalica S.A. turnover and EBIT, using the financials data to estimate, smooth and forecast.

In the case of Metalica S.A. company from the Fig. 5.5.5, we observe that:

- The trend, which is represented by the smoothed value, is ascending for the turnover and descending for EBIT;
- In the case of forecast, which is represented by the predicted value, when compared with the real measured value we observe that in the case of turnover and EBIT the trend of predicted values isn't similar with the real data.

SC Simbeton Oradea SA is a company that activates in the sector of manufacturing of concrete products for construction. It has a stable activity in it's area, although from the last years, causes by the economic crisis. Its core business of manufacturing of concrete products for construction is spread over 4 counties, so we can argue it's role in the regional economic development.

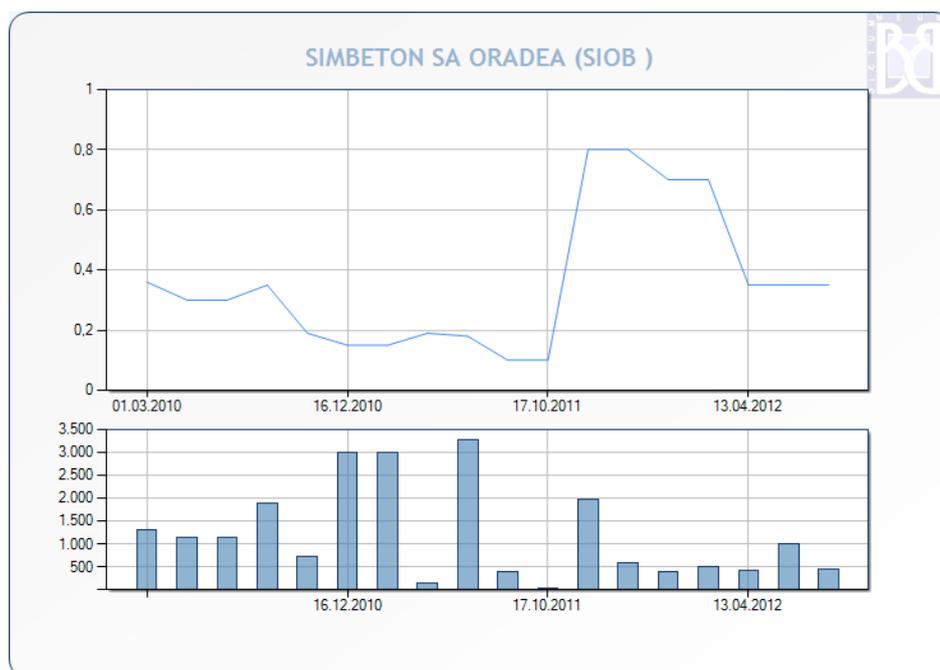


Figure no. 5.5.6. Last 3 years stock prices with Volum of transactions
Source: www.bvb.ro

Simbeton Oradea shares are listed on III-R, RASDAQ section of the Bucharest Stock Exchange under the symbol SIOB. This company has in the last 5 years a permanent number of employees of over 50 and a turnover that exceed 1.000.000 euro/year, so it has a significant role in the regional economy.

From the table 5.5.7., we see that the anual leverage ratio is less than one, which shows that the company had financial autonomy. Instead, net income, operating profit and net cash flow recorded negative values on almost all analyzed period which is a warning regarding a possible bankruptcy of the this ompany.

Data are in RON

Period	Turnover	Net income	EBIT	L	R _{EF}	R _{LG}	R _{LR}	ROA	ROE	Dr	Dst	Da
2009 Q1	679569	-221	38311	0,14	-0,21	0,56	0,50	0,08	0,00	3,84	2,00	1,35
2009 Q3	2615793	-444686	-270674	0,06	-0,62	1,96	1,53	-0,32	-0,06	48,51	20,41	3,08
2009 Q4	2796494	-663829	-425425	0,55	-0,53	0,23	0,17	-0,02	-0,06	86,78	51,63	0,15
2010 Q1	247756	-154915	-96501	2,29	-0,55	0,04	0,04	-0,02	-0,11	24,19	5,73	0,05
2010 Q2	1200158	-227432	-120608	0,61	-0,75	0,20	0,12	-0,01	-0,02	87,54	84,33	0,06
2010 Q3	2473506	-106498	-249341	1,03	1,27	0,23	0,15	-0,01	-0,01	95,66	82,05	0,12
2010 Q4	4103292	-157768	44743	0,57	2,16	0,43	0,32	0,00	-0,01	42,10	16,74	0,23
2011 Q1	351685	-134642	-97362	3,94	-0,36	0,10	0,10	-0,01	-0,13	94,32	6,11	0,02
2011 Q2	1357092	-216381	-150733	0,47	-0,42	1,06	0,74	-0,01	-0,02	78,86	53,34	0,08
2011 Q3	3016781	218891	359963	5,44	0,25	0,18	0,16	0,02	0,19	34,74	3,97	0,16
2011 Q4	4392997	182544	379103	0,24	0,27	4,29	3,94	0,03	0,02	61,11	6,45	0,29
2012 Q1	304392	-140526	-127549	0,19	-0,10	2,28	2,17	-0,01	-0,01	196,85	10,59	0,02
2012 Q2	1038597	-282251	-260414	0,37	-0,09	0,63	0,37	-0,02	-0,03	57,58	67,40	0,07
2012 Q3	1809767	-427576	-398991	3,01	-0,08	0,81	0,42	-0,02	-0,37	77,47	80,45	0,09

Table no. 5.5.7. Evolution of the main indicators of the company Simbeton Oradea S.A in the period 2009-2012

General liquidity ratio and the current liquidity ratio recorded fluctuating values and very low in the past year reflecting the fact that Simbeton Oradea S.A is unable to pay its short-term debts only from current assets owned. ROE and ROA were recorded very low or negative values throughout the period analyzed, so we can say that the activity within the company wasn't very efficient in term to fructification equity and total assets in the last two years. The average duration of collection of receivables and the average length of stocks rotation recorded very fluctuating and relatively high values, which is a weakness of the company, showing that it can face a lack of liquidity.

Indicators	Average	Minimum	Maximum	Standard deviation	Coefficient of variation
Turnover	1884848	247756	4392997	1377170,402	0,730653
EBIT	-98248,4	-425425	379103	241371,39	-2,45675
L	1,350131	0,058481	5,437419242	1,672495103	1,238765
ROA	-0,02254	-0,31861	0,076235743	0,08907623	-3,9519
ROE	-0,04443	-0,37079	0,189567882	0,118894685	-2,67624

Table no. 5.5.8.

From the table 5.5.8, we note that, in the period 2009-2012, the turnover stood in the range [247.756, 4.392.997], with an average of 1.884.848 Ron and a relatively low coefficient of variation, which shows that there are low variations in turnover, so a predictability of turnover is relatively high.

From Figure no.5.5.9, we note that both turnover and EBIT shows a constant trend, which is strength of the company Simbeton Oradea S.A.

EBIT stood in the range [-425.425, 379.103], with an average of 98.248,4 Ron and a very high coefficient of variation, which shows that there are very high variations in EBIT, so a predictability of EBIT is very low.

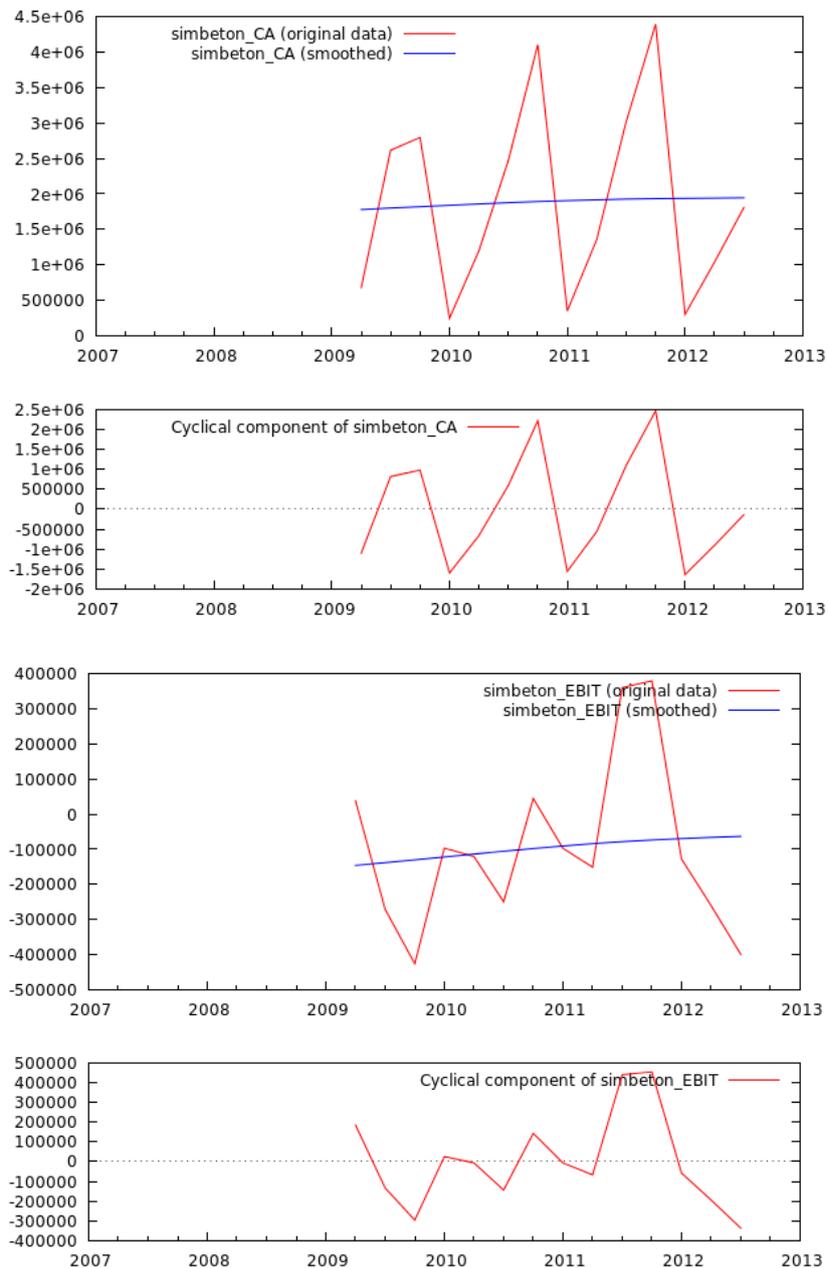
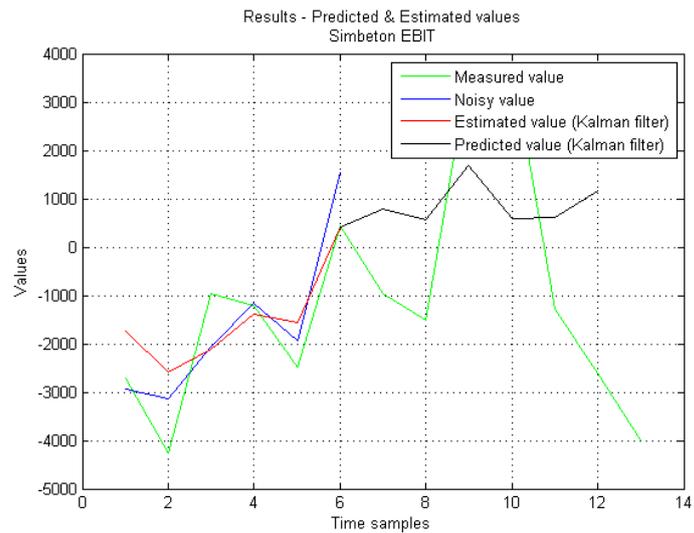
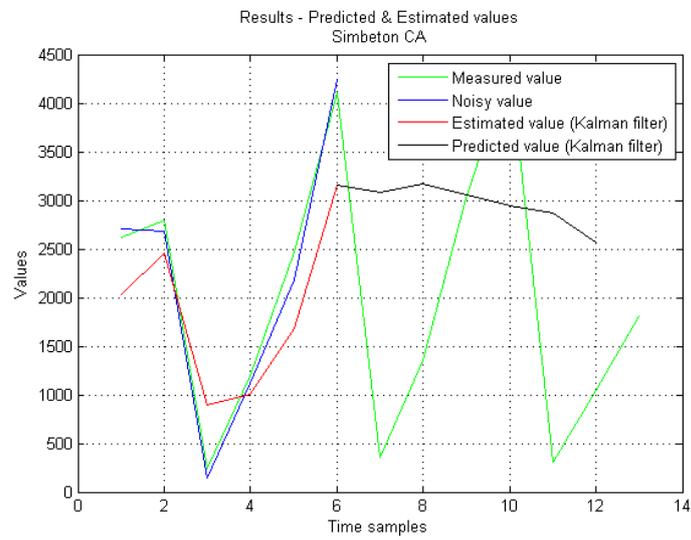
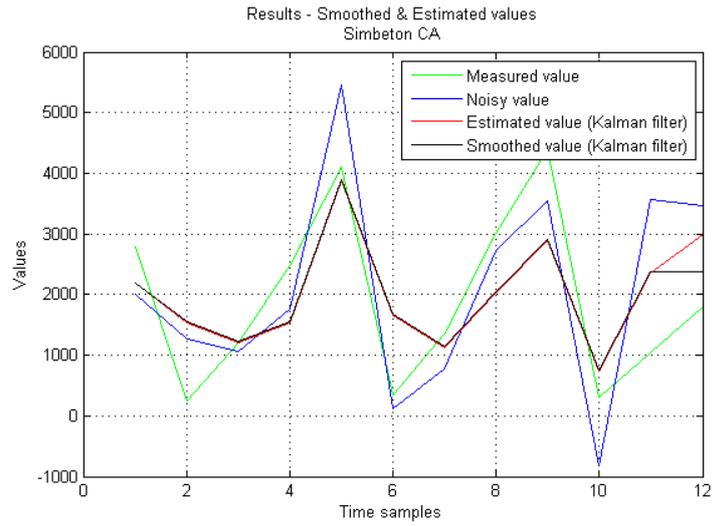


Figure no. 5.5.9. Turnover and EBIT trend

The highest volatility in the period 2009-2012 is register by ROE and ROA, which shows that there are very large variations in ROA and ROE and predictability of ROA and ROE is very low.



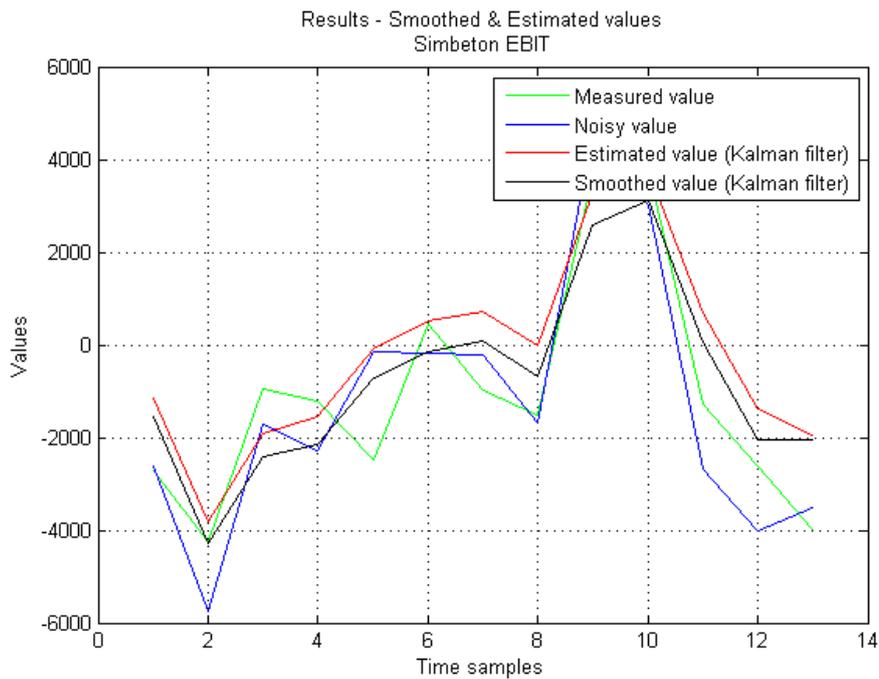


Figure no. 5.5.10

In the case of Simbeton Oradea S.A. company from the Fig. 5.5.10, we observe that:

- The trend, which is represented by the smoothed value, is descending for both the turnover and EBIT;
- In the case of forecast, which is represented by the predicted value, when compared with the real measured value we observe that in the case of turnover and EBIT the trend of predicted values isn't similar with the real data.

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.

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