THE MODELING OF CERTAIN TAX ADMINISTRATION OPTIONS

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How big will be the receipts in budgetary execution? Lower? Bigger? Referring to last year, is the situation better? How much will the receipts be next month? These are questions which flow inevitably in the end of each month, especially in times of economic crisis. The same question can be made clear for each taxpayer separately.This article proposes an equation of revenues' forecasting at a moment of time pending on previous periods of revenues , a method to the financing budget deficit by reducing arrear and a way to increase the quality of the risk analysis corresponding to the tax control .

1 Revenue forecasts collection to the state budget using an economic model ARMA

An efficient fiscal policy could become very important at depression times.

This policy involves several parts like public collection of revenue, public expenditures and, finally, budget deficit financing.

During the crisis period, certain changes must occur in the dominant logic of fiscal management, which could lead either to cut budget deficit or to a more efficient financing.

The question is: „How can be used fiscal administration as an efficient leverage under crisis conditions?

The prognosis is especially useful in periods of economic crisis due to a much higher impact.

Addressing the forecast revenue of a taxpayer to the state budget becomes very important for the purpose of a modern profitability -risk approach, in which profitability expected is the date of a prediction of future revenues and the risk is given e.g. the risk of insolvency.

In this respect in the first part of the study will be made a prediction using an ARMA model of the revenue the state budget.

The data the analysis was carried out was requested under the Law No 544/2001 on free access to public information which is a will to ensure the observance of the Romanian state a constitutional right of citizens: free access to information.

Thus, the total amounts collected in a given period of the state budget was called in, budget state welfare, the national health insurance fund and the budget unemployment insurance for the national agency for fiscal administration for the 2007-2008 period.

The series of data on monthly revenues examined shows trend and that's why it was carried out the stationarized sequence using a new series given by totalbugetbun=totalbuget-totalbuget-3)-totalbuget (2) totalbuget (4) .

SERIE INITIALA		SERIE STATIONARIZATA	
LUNA /AN	**VENITURI**	**LUNA /AN**	**VENITURI**
2007M01	9236.500	2007M01	NA
2007M02	6625.650	2007M02	NA
2007M03	7295.790	2007M03	NA
2007M04	10956.60	2007M04	NA
2007M05	9257.720	2007M05	4572.780
2007M06	9445.650	2007M06	-2181.090
2007M07	11660.45	2007M07	-1258.080
2007M08	8889.480	2007M08	1142.710

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2007M09	9288.330	2007M09	-2560.050
2007M10	12560.65	2007M10	1456.370
2007M11	10212.27	2007M11	3694.910
2007M112	10977,58	2007M112	-1950,55
2008M01	14739.90	2008M01	1255.310
2008M02	9993.300	2008M02	1364.100
2008M03	10398.77	2008M03	-5106.440
2008M04	14429.08	2008M04	673.4600
2008M05	11323.80	2008M05	5671.630
2008M06	11256.99	2008M06	-3577.560
2008M07	15700.28	2008M07	346.1700
2008M08	10642.86	2008M08	2491.150
2008M09	11136.16	2008M09	-4497.310
2008M10	14522.81	2008M10	-563.3400
2008M11	10713.86	2008M11	463.120
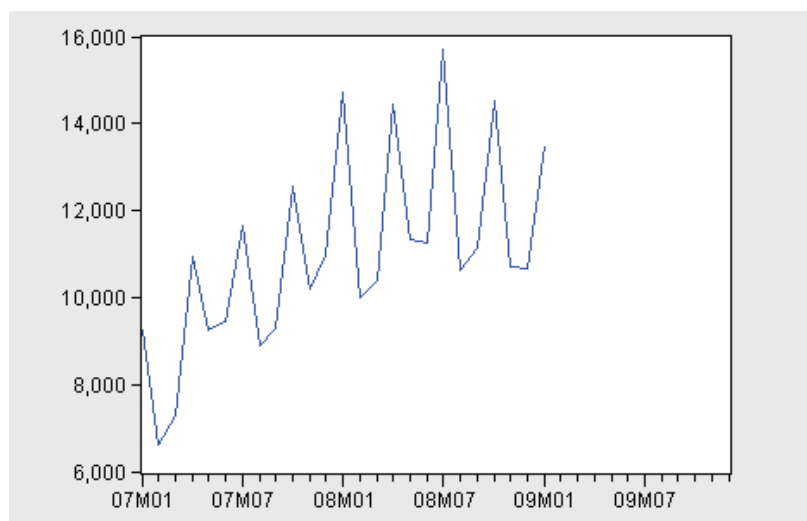
From the graphic representation of the initial series, we can observe a drop in revenues from the second period of 2008 fact characteristic for the year of economic crisis.

Analyzing the trend, we find out the increase of revenues during the 2008 tempered on the second half of the yea 2009.

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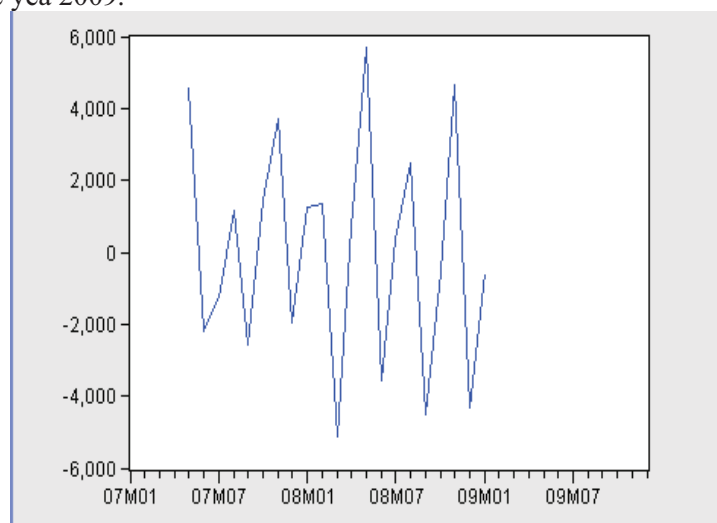
For the stationarized series an equation of forecasting was considered for a process ar (3) ma (6) obtaining the ar and ma coefficients and which can help in predicios.

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Dependent Variable: TOTALBUGETBUN
Method: Least Squares
Date: 03/12/09  Time: 10:52
Sample (adjusted): 2007M08 2009M01
Included observations: 18 after adjustments
Convergence achieved after 8 iterations
MA Backcast: 2007M02 2007M07
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	Coefficient	Std. Error	t-Statistic	Prob.
AR(3)	0.806079	0.160310	5.028236	0.0001
MA(6)	0.946325	0.073726	12.83573	0.0000

R-squared	0.862689	Mean dependent var	-27.13556
Adjusted R-squared	0.854107	S.D. dependent var	3161.924
S.E. of regression	1207.727	Akaike info criterion	17.13531
Sum squared resid	23337682	Schwarz criterion	17.23424
Log likelihood	-152.2178	Hannan-Quinn criter.	17.14895
Durbin-Watson stat	1.702523		

Inverted AR Roots	.93	-.47-.81i	-.47+.81i	
Inverted MA Roots	.86+.50i	.86-.50i	.00-.99i	-.00+.99i
	-.86+.50i	-.86-.50i		
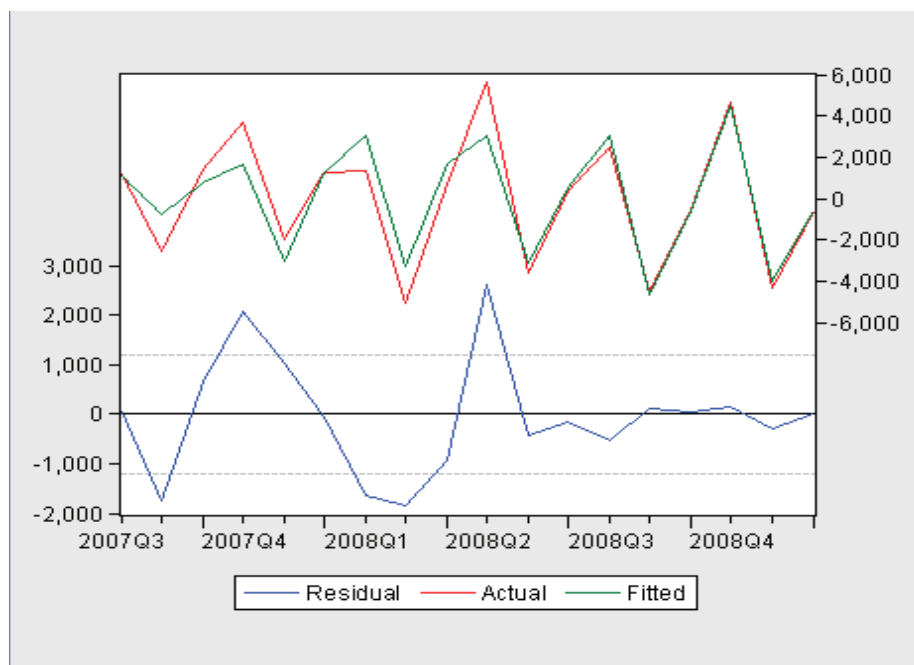
2 Possibility of financing public deficit

Budget expenses which are not financed through revenue and fiscal ones may lead to an inflammation of the aggregated demand and to inflation. Financing budget deficit through loans or by inflation might be a much better alternative by reducing arrears. And the need to maintain public debt at a sustainable level imposes appropriate measures.

Among the methods of recouping the goods subject enforcement exists, as well, the procedure of giving in payment. So, under the Fiscal Code Procedures, except those with deduction at source

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and accessories relating thereto, the local budgets claims may be extinguished by passing into public ownership of the State.The minute of seizure for goods which will be recovered under the Fiscal Code Procedures will include a description of movable goods and estimated price of each, according to the appreciation of the fiscal officer, their identification and their specification, quoting the status and any particular signs of each good.

On the other hand, the entities that carry out public procurements draw up annual procurement plans in which appears the description of goods subject to be purchased.

Development of the procedure for putting in payment for financing public procurement may be more effective by the creation of "a market" in which is possible to confront the national demand corresponding public procurement and supply on assets held hostages, ensuring the financing of public institutions by arrears.

Thus, is possible to extend the measure on other goods, other than buildings, but also a simplified procedure which would allow selling goods in this manner whenever necessary. The solution is to match to offer with the demand, at national level, by using the same primary keys of two specific public finance documents : the minutes of seizure and the yearly plan on procurement.

The existence of a national database, to use the same primary key in the property held hostages, but also of the goods that will be the subject of public procurement and comparing them periodically would lead to a cheap financing of acquisition of public fiscal arrears .

3. The use of the signal related to the decrease of the own capitals profitability in the application of the tax control option

In order to increase the quality of the risk analysis corresponding to the tax control, an index used as a signal, as well as the use of form recognition techniques are useful.

In order to determine an efficient signal indicator, a group of 111 companies having the same object of activity, respectively wood processing, were considered and data was excerpted from the Trade Registry, from the balance sheets submitted by these economic agents, also calculating the specific risk and profitability indexes, respectively:

Non-current assets, Stocks, Customers, Investments, petty cash and accounts, Current assets, Own capital, Debts > 1 year, Suppliers, Loans <1 year, Dividends, Bank loans, Debts <1 year, Liabilities, the Operational capital need, the Variation of the Operational capital need, Net current assets, the Variation of the Current assets, the Turnover, Sales, Income tax, Net profit, Roa, Roe, Current liquidity rate, Quick liquidity rate (acid test), Cash rate, Debts rate, Levier, Number of employees, Altmann score.

The result was a database, the fields whereof were the financial analysis indexes.

Next, we tried, through form recognition techniques (using an audit software analysis package that generates rules), to determine specific rules to be found in the data.

The result was a rule according to which, if the number of employees at the bankrupts companies is 1, the own capitals profitability is low

GENERAL DETAILS:
File Name: D:\doctorat\anul 2\de publicat\date.mdb
Total No. of Records: 111
All Rules
Minimum Probability of If-then Rules: 0.95
Minimum Accuracy Level of Formula Rules: 0.95
Minimum Number of Cases in a Rule: 10
If the no. of employees is 1.00
and altmannn score is bankruptcy
Then
The profitability of own capital is -0.33 ... 0.48 (average = 0.01)
Rule's probability: 1.000

The rule exists in 13 records.
Significance Level: Error probability <   0.01

Any and all companies, regardless of whether they are in the business development stage or in the production capacities maintenance stage, needs to attract resources for the financing of its operations.

An important aspect in the management of a Company is the management of the direct financing cost, such as the interest rate or the rate granted to the shareholders for their participation to the company's capital.

The fact that the financing sources coming from the shareholders are free of charge is not very much noted.lower profitability is induced by the low risk, which also depends on the field of activity.

If the profitability of the own capital falls under a certain limit, this can be a sign that can also be used by the tax administrations in the identification of tax evasion.

The relationship between profitability and risk can, however, be modified, as compared to tax evasion outside the market game, i.e. the profitability can be greater due to the avoidance of tax, through the failure to declare income, or through additional income due to the legal VAT reimbursements.

Thus, there can be cases of VAT reimbursements for assets (stocks, non-current assets), followed by the payer's ceasing his activity, after having obtained important VAT amounts, to be reimbursed to the state

Even if the turnover trend, the current liquidity, the patrimony solvency are positive and the value of the assets is high, a low profitability of the own capital can be an indicator of tax evasion, in the context of the high assets volatility.

Thus, a low profitability of the own capital (net profit/own capital) during a longer period of time can be used as a signal in applying the tax control initiation option.

4 Conclusion

This article proposes an equation of revenues' forecasting at a moment of time pending on previous periods of revenues , a method to the financing budget deficit by reducing arrear and a way to increase the quality of the risk analysis corresponding to the tax control .

This would provide a more complex picture on this phenomenon and especially an equation to predict who might substantiate a specific target that he may choose the tax and a forecast of supplies to the public loans.

During the economic crisis technical analysis of the revenue may lead to a credible source that prediction may be used in decisions effectively.

5 References

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