THE INFLATION IN EUROPEAN UNION

Summary

The significance of stability of P.C.I. (Price consumer index) is reported in the situation of economy in which the price consumer index does not present tendencies of important change so much to inflation,- as down,- deflation. This is also the aim of E.E. (European Union), to maintain in a constant level the price consumer index. In this article we will present a model of forecast of inflation of E.E. in the 15 states, with result the possibility that is given to us to be able forecast with a great precision the inflation of separately states which it helps us to forecast also the inflation of E.E. of the 15 and to take in a short time the essential measures of economic policy, those who from them are feasible and to deter undesirable situations.

Analysis

As we began the analysis, we regressed the inflation of E.E. as dependent variable and the inflations of 15 states (see table 1 in the Annex) as independent variables. The model however presented autocorrelation and multicollinearity. We preferred remove certain variables. We should mark that the existence of multicollinearity does not always mean also problem and we will prove it with the forecast that we will make. Therefore as independent variables we selected the inflations of states: Germany, Portugal, Sweden, United Kingdom, Austria and Finland. The results of regression are presented below. It is reasonable that the signs of the specific variables to be positively. The variables are statistically important, the model is statistically important and the R^2 is high enough, that means it exists a very good statistical interpretation of model. Is presented however the problem of autocorrelation, as we see from the statistical Durbin - Watson.

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EU = - 0,0187 + 0,149 Austria + 0,276 Finland + 0,184 Germany + 0,109
Portugal + 0,0403 Sweden + 0,279 United Kingdom

Predictor        Coef     SE Coef          T        P       VIF
Constant     -0,01871     0,08726      -0,21    0,832
Austria       0,14883     0,05285       2,82    0,009      19,8
Finland       0,27647     0,04764       5,80    0,000      13,7
Germany       0,18384     0,03119       5,89    0,000       7,8
Portugal      0,10897     0,01358       8,02    0,000       2,3
Sweden        0,04029     0,02429       1,66    0,108       5,5
United K      0,27922     0,04053       6,89    0,000       1,8

S = 0,06091     R-Sq = 99,1%     R-Sq(adj) = 99,0%

Analysis of Variance

Source            DF          SS          MS         F        P
Regression         6     12,4924      2,0821    561,27    0,000
Residual Error    29      0,1076      0,0037
Total             35     12,6000

Durbin-Watson statistic = 2,39
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We selected states with diversity in the trend of the inflation. Moreover from the analysis of variance (ANOVA), that is presented, immediately below, we see that exists statistical difference between the inflations. Consequently our choice became with criteria of better adaptation in the model.

One-way analysis of variance						
Conclusion						
Group	*N*	*Sum*	*Mean*	*variance*		
Column 1	36	57,6	1,6	0,75314286		
Column 2	36	75,2	2,08888889	0,90844444		
Column 3	36	83,2	2,31111111	0,6415873		
Column 4	36	50,2	1,39444444	0,4588254		
Column 5	36	62,8	1,74444444	0,8448254		
Column 6	36	104,3	2,89722222	0,73742063		
Column 7	36	140,3	3,89722222	1,59170635		
Column 8	36	82,6	2,29444444	0,28053968		
Column 9	36	86,8	2,41111111	1,97301587		
Column 10	36	113,6	3,15555556	2,13225397		
Column 11	36	112,6	3,12777778	1,29749206		
Column 12	36	112,5	3,125	0,59964286		
Column 13	36	84,4	2,34444444	0,23511111		
Column 14	36	54,8	1,52222222	0,98234921		
Column 15	36	41,1	1,14166667	0,11507143		
ANALYSIS OF VARIANCE						
Source of variance	*SS*	*Degree of freedom*	*MS*	*F*	*P*	*criteria F*
Between groups	309,9393	14	22,1385185	24,5050015	9E-49	1,7106423
In the groups	474,3	525	0,90342857			
Total	784,2393	539				

We return in our model. As we reported we see that exists autocorrelation. Concretely the indicator DW it is found in the region, in that we do not know if it exists autocorrelation[1]. Nevertheless ,we will convert the data and will resolve the problem of autocorrelation with the repetitive method Cochrane – Orcutt[2]. The converted data are presented in the table 2 of Annex.

Then we forecast the inflations of particular states, with various methods, for the month in October 2001. The methods that were used were selected with base certain criteria. (Jeffrey Jarrett, 2003 Athens). The forecasts for the month of October have as follows:

Germany	Portugal	Sweden	United Kingdom	Austria	Finland
2,05	4,16	3,2	1,27	2,35	2,37

1. Andreas A. Kintis, (1982) Econometrics, Volume A, Publications Gutenberg, Pages 274-280.
2. Guzarati N. Damodar, "Basic Econometrics", McGraw - Hill International Editions, Economic Series, Third Edition, New York 1995, pages 430-433.

We convert also these prices and we regress the new model in order to forecast the inflation of E.E. for the month of October. The results are following:

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The regression equation is
C51 = 0,117 + 0,169Germany + 0,0822Portugal - 0,0466Sweden +
0,224U.K. + 0,240Austria + 0,0999Finland.

Predictor        Coef     SE Coef          T        P
VIF
Constant       0,1168      0,1107       1,06    0,301
Germany        0,16853     0,03799       4,44    0,000
10,2
Portugal       0,08217     0,01485       5,54    0,000
2,3
Sweden        -0,04657     0,03823      -1,22    0,234
9,4
U.K.           0,22435     0,05497       4,08    0,000
2,6
Austria        0,24005     0,06352       3,78    0,001
25,0
Finland        0,09993     0,04880       2,05    0,051
13,6

S = 0,07291     R-Sq = 98,5%     R-Sq(adj) = 98,1%

Analysis of Variance

Source            DF          SS          MS         F
P
Regression         6      8,9796      1,4966    281,54
0,000
Residual Error    26      0,1382      0,0053
Total             32      9,1178

Source       DF      Seq SS
Germany       1      8,4026
Portugal      1      0,2638
Sweden        1      0,0655
U.K.          1      0,0000
Austria       1      0,2254
Finland       1      0,0223

Unusual Observations
Obs        C45        C51         Fit      SE Fit    Residual
St Resid
 23       2,93     2,2736      2,1098      0,0233      0,1638
2,37R

R denotes an observation with a large standardized residual

Durbin-Watson statistic = 2,16

Predicted Values for New Observations
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New Obs	Fit	SE Fit	95,0% CI	95,0% PI
1	2,2049	0,0351	(2,1326; 2,2771)	(2,0385; 2,3713)

The fitted price is 2,2049, as the actual is 2,0.

CONCLUSION

We saw that we can forecast the trend of inflation. Of course, we should not satisfied in these results, after many times the inflation can be unanticipated. In any case we should stress that usually exists inflation of cost (or supply) and no demand. What usually happens is: The increase emanates or from part of businessmen, that increase the prices of products in order to leave a margins of profit, because the increase of cost the productive and functional factors. Usually however this increase is greater than the increase of cost so the result is the increase of the inflation. The second phenomenon is that powerful working trade unions require increases of wage and day labours. In the point that this increases do not exceed the increase of mean productivity of work of author problems in the businessmen. From the moment however where they exceed it, they increase the cost of work. The businessmen face this problem with removing the increase in the consumers, increasing the prices of products, so the result is the increase of the cost of life.

Annex

*Source EUROSTAT
Table 1

Austria	Belgium	Finland	France	Germany	Greece	Ireland	Italy	Luxemburg	Netherlands	Portugal	Spain	Denmark	Sweden	United Kingdom	EU	Year	Month
0,3	1	0,5	0,3	0,2	3,3	2,1	1,5	-1,4	2,1	2,5	1,5	1,2	0	1,6	0,9	1999	JAN
0,2	1	0,9	0,3	0,1	3,1	2,3	1,4	0,6	2	2,7	1,8	1,3	0,2	1,5	1	1999	FEB
0,2	1,3	0,9	0,4	0,5	3	2	1,4	0,6	2	2,8	2,1	1,7	0,5	1,7	1,2	1999	MAR
0,1	1,1	1,3	0,5	0,8	2,6	2	1,3	1,3	1,9	2,7	2,3	1,7	0,3	1,5	1,2	1999	APR
0,4	0,8	1,4	0,4	0,4	2	2,3	1,5	1,3	2,1	2,1	2,1	1,6	0,3	1,3	1,1	1999	MAY
0,2	0,7	1,2	0,3	0,4	1,5	2,1	1,4	1,2	2,1	2,1	2,1	1,9	0,4	1,4	1	1999	JUN
0,3	0,7	1,4	0,4	0,6	1,6	1,9	1,7	-0,3	1,8	1,9	2,1	2	0,2	1,3	1,1	1999	JUL
0,5	0,9	1,3	0,5	0,7	1,4	2,4	1,6	1,4	2,5	1,8	2,3	2,4	0,8	1,3	1,2	1999	AUG
0,6	1,3	1,4	0,6	0,8	1,3	2,6	1,9	1,6	2	1,9	2,5	2,4	1,1	1,2	1,2	1999	SEP
0,8	1,4	1,6	0,8	0,9	1,7	2,8	2	1,9	1,8	1,8	2,4	2,6	1	1,2	1,3	1999	OCT
1	1,6	1,9	1	1	2	3	2,1	1,9	2	1,9	2,7	2,7	0,8	1,3	1,4	1999	NOV
1,7	2,1	2,2	1,4	1,4	2,3	3,9	1,7	2,3	1,9	1,7	2,8	3,1	1,2	1,2	1,7	1999	DEC
1,4	0,3	2,3	1,7	2,9	2,4	4,4	2,2	3,5	1,6	1,9	2,9	2,8	1	0,8	1,8	2000	JAN
2	2,1	2,7	1,5	2,1	2,6	4,6	2,4	2,6	1,5	1,6	3	2,8	1,4	1	1,9	2000	FEB
2	2,5	3,2	1,7	2,1	2,8	5	2,6	3	1,6	1,4	3	3	1,4	0,7	1,9	2000	MAR
1,8	2,3	2,5	1,4	1,6	2,1	5	2,4	3,2	1,7	1,9	3	2,9	1	0,6	1,7	2000	APR
1,6	2,4	2,7	1,6	1,5	2,6	5,1	2,5	2,9	2	2,4	3,2	2,8	1,3	0,5	1,7	2000	MAY
2,4	3	3,1	1,9	2	2,2	5,4	2,7	4,4	2,5	2,8	3,5	2,9	1,4	0,8	2,1	2000	JUN
2	1,7	2,9	2	2	2,6	5,9	2,6	4,7	2,8	3,3	3,7	2,8	1,3	1	2,1	2000	JUL
1,9	3,5	2,9	2	1,8	2,9	5,7	2,6	3,7	2,5	3,6	3,6	2,2	1,4	0,6	2	2000	AUG
2,3	3,9	3,4	2,3	2,6	3	5,5	2,6	4,2	2,9	3,6	3,7	2,7	1,3	1	2,5	2000	SEP
2,2	3,7	3,4	2,1	2,4	3,8	6	2,7	4,3	3,2	3,7	4	2,8	1,3	1	2,4	2000	OCT
2,3	3,7	3,3	2,2	2,6	4	6	2,9	4,5	2,9	3,6	4,1	2,7	1,8	1	2,6	2000	NOV
1,8	3	2,9	1,7	2,3	3,7	4,6	2,8	4,3	2,9	3,8	4	2,3	1,3	0,9	2,3	2000	DEC
2,2	2,7	2,9	1,4	2,2	3,2	3,9	2,7	2,9	4,6	4,4	3,8	2,3	1,6	0,9	2,2	2001	JAN
1,8	2,5	2,7	1,4	2,5	3,5	3,9	2,7	2,9	5	4,9	4	2,3	1,5	0,8	2,3	2001	FEB
1,9	2,2	2,5	1,4	2,5	3,2	4,1	2,6	3	5	5,1	4	2,2	1,7	1	2,3	2001	MAR
2,6	2,9	2,8	2	2,9	3,7	4,3	3	2,7	5,5	4,6	4	2,6	3	1,1	2,6	2001	APR
2,9	3,1	3,3	2,5	3,6	3,9	4,1	2,9	3,8	5,4	4,9	4,2	2,8	3,1	1,7	3,1	2001	MAY
2,6	3	3	2,2	3,1	4,5	4,3	2,9	2,7	5,1	4,6	4,2	2,2	3	1,7	2,8	2001	JUN
2,8	2,7	2,6	2,2	2,6	4,2	4	2,8	2,4	5,3	4,3	3,8	2,3	2,9	1,4	2,6	2001	JUL
2,4	2,5	2,7	2	2,6	4	3,7	2,8	2,5	5,2	4	3,8	2,5	3	1,8	2,6	2001	AUG
2,4	1,9	2,6	1,6	2,1	4	3,8	2,6	1,9	5,3	4,1	3,4	2,1	3,3	1,3	2,4	2001	SEP

Table 2

Germany	Portugal	Sweden	United Kingdom	Austria	Finland	EU	Year	Month	Germany	Portugal	Sweden	United Kingdom	Austria	Finland	EU	Year	Month
0,198	2,475	0	1,58	0,267	0,267	0,89	1999	JAN	2,204	3,1264	1,5768	0,868	2,6176	3,4672	1,8688	2000	JUN
0,1272	3,04	0,2	1,7176	0,2408	0,968	0,8776	1999	FEB	2,272	3,6808	1,4904	1,1088	2,3264	3,3216	1,8144	2000	JUL
0,5136	3,1672	0,5272	1,904	0,2272	1,0224	1,064	1999	MAR	2,072	4,0488	1,5768	0,736	2,172	3,2944	1,7144	2000	AUG
0,868	3,0808	0,368	1,7312	0,1272	1,4224	1,0368	1999	APR	2,8448	4,0896	1,4904	1,0816	2,5584	3,7944	2,228	2000	SEP
0,5088	2,4672	0,3408	1,504	0,4136	1,5768	0,9368	1999	MAY	2,7536	4,1896	1,4768	1,136	2,5128	3,8624	2,06	2000	OCT
0,4544	2,3856	0,4408	1,5768	0,2544	1,3904	0,8504	1999	JUN	2,9264	4,1032	1,9768	1,136	2,5992	3,7624	2,2736	2000	NOV
0,6544	2,1856	0,2544	1,4904	0,3272	1,5632	0,964	1999	JUL	2,6536	4,2896	1,5448	1,036	2,1128	3,3488	1,9464	2000	DEC
0,7816	2,0584	0,8272	1,4768	0,5408	1,4904	1,0504	1999	AUG	2,5128	4,9168	1,7768	1,0224	2,4448	3,2944	1,8872	2001	JAN
0,8952	2,1448	1,2088	1,3768	0,668	1,5768	1,0368	1999	SEP	2,7992	5,4984	1,7176	0,9224	2,0992	3,0944	2,0008	2001	FEB
1,0088	2,0584	1,1496	1,3632	0,8816	1,7904	1,1368	1999	OCT	2,84	5,7664	1,904	1,1088	2,1448	2,8672	1,9872	2001	MAR
1,1224	2,1448	0,936	1,4632	1,1088	2,1176	1,2232	1999	NOV	3,24	5,2936	3,2312	1,236	2,8584	3,14	2,2872	2001	APR
1,536	1,9584	1,3088	1,3768	1,836	2,4584	1,5096	1999	DEC	3,9944	5,5256	3,508	1,8496	3,2536	3,6808	2,7464	2001	MAY
3,0904	2,1312	1,1632	0,9632	1,6312	2,5992	1,5688	2000	JAN	3,5896	5,2664	3,4216	1,9312	2,9944	3,4488	2,3784	2001	JUN
2,4944	1,8584	1,536	1,1088	2,1904	3,0128	1,6552	2000	FEB	3,0216	4,9256	3,308	1,6312	3,1536	3,008	2,2192	2001	JUL
2,3856	1,6176	1,5904	0,836	2,272	3,5672	1,6416	2000	MAR	2,9536	4,5848	3,3944	1,9904	2,7808	3,0536	2,2464	2001	AUG
1,8856	2,0904	1,1904	0,6952	2,072	2,9352	1,4416	2000	APR	2,4536	4,644	3,708	1,5448	2,7264	2,9672	2,0464	2001	SEP
1,7176	2,6584	1,436	0,5816	1,8448	3,04	1,4688	2000	MAY									

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