PRE-ELECTIONAL DECREASE OF THE UNEMPLOYMENT RATE

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Abstract

Opportunistic business cycle models test whether the current government has the ability to reduce unemployment in pre-election period.

First opportunistic business cycle models tested regressions using unemployment rate as the dependent variable, and for explanatory variables used unemployment rate in the previous two periods and political dummy variable defined as unity several quarters prior to election and zero elsewhere. Such models did not find evidence of opportunistic cycle for unemployment.

Haynes and Stone in their model estimated regressions using unemployment as the dependent variable and sixteen dummy variables as explanatory variables (one for each quarter in the Presidential electoral term). Results showed that unemployment has roughly sinusoidal sixteen quarter cycle, where unemployment troughs on average the quarter of the election.

Mentioned models are tested with data for the United States for the period from 1948 to 2011 where regressions results coincide with models mentioned in the article.

Key words: *Unemployment, Opportunistic business cycle, Political economy*

1. TRADITIONAL OPPORTUNISTIC BUSINESS CYCLE

1.1. Nordhaus opportunistic business cycle model

Unemployment is, together with inflation, one of the main economic concerns of every government. It represents one of the main indicators that voters observe while evaluating the competence of the current government. There arises a question can the current government reduce unemployment in pre-

election period, at least for the short period of time, with the aim of leaving a good impression on voters with a consequence of enhancing the chance of re-election.

Opportunistic political business cycles try to answer the mentioned question, observing cycles in macroeconomic variables in relation with electoral cycles. They started to emerge in the mid 1970s, with the most influential Norhaus model.

These models assume the possibility of manipulating economic sizes due to the slow adjustment of inflation expectations to the economic situation. Therefore governments have the ability to stimulate the economy in the pre-election period and thus reduce unemployment, with the rise of inflation as a negative consequence occurring in the period after the election. (Nordhaus, 1989)

According to the opportunistic model the governments are trying to maintain a low inflation until the period immediately before the election. Then by the economic expansion (spurred by monetary expansion) they exploit the relations that are valid in the Phillips curve reducing the unemployment, while the inflation remains low due to low inflationary expectations. Inflation rises after the election, after the inflationary expectations adjust, and then the government tries to re-cut it by a restrictive monetary policy.

The existence of business cycles was tested by using autoregression, where as the dependent variable GDP growth was used, while as the independent variable were used GDP growth in the previous period and dummy variable that had value 1 in the election year and zero during the other years.

Those studies have found weak evidence for the existence of opportunistic cycles in developed countries. (www.econ.umd.edu/~drazen/working_papers/palgrave_pbusinesscycle.pdf)

1.1. Alesina rational opportunistic business cycle model

Rational opportunistic models developed in 1980-ies as a branch of game theory. They differed from the previous models by reducing the predictability of the impact of monetary policy on real economic values, and assuming that it is not possible to systematically deceive rational voters as they become aware of the government's motives for certain pre-election measures.

Under the influence of these assumptions rational opportunistic models reduced the intensity and probability of regular business cycles, and emphasized the dependence on the domestic and international context (thus small, closed economy have a greater opportunity to create a cycle), on the political-economic context and on the institutional, structural and strategic context in which government policy-making . Ability of the government to influence real economic values depends on many factors like the independence of the central bank, the exposure of the domestic economy the

world economy and on fixed or fluctuating exchange rate. Thus in countries with fixed exchange rates monetary policy is ineffective to create a cycle in the fiscal variables, while fiscal policy is effective. In countries with fluctuating exchange rates fiscal policy is ineffective and monetary effective.

Results of tested models from many authors found strong shifts in monetary and fiscal policies, instead finding shifts in actual sizes. It can be observed undoubted cyclicality in government transfers (social security, veterans aid), and cyclicality in tax benefits, public works and delaying layoffs and increased government spending. (Franzese, 2002)

Alesina and Roubini tested Nordhaus model taking into account the OECD countries in the period of 1960th-1987th years, using quarterly data for unemployment, GDP growth and inflation.

Regressions that were tested contained the current unemployment (i.e. the current GDP growth) as the dependent variable while as the independent variables the unemployment growth (i.e. GDP growth) in the last two periods and the dummy variable which was 1 in periods of 4, 6 and 8 quarters before the election and zero in the other periods. Regressions which related to inflation contained current inflation as the dependent variable while as the independent variables contained changes in inflation in the last two periods and the dummy variable which was 1 in 4 quarters after the election and zero in the other periods.

On the basis of the test results authors concluded that there is no impact of elections on the unemployment and GDP. However, the dummy variable that refers to the growth of inflation is significant at the significance level of 1%, which means the cyclical movement of inflation depending on the election. Increase of the inflation appears as late as after the election and lasts from 3-5 months.

Those results suggest the possibility of the existence of manipulation with monetary and fiscal instruments (which is particularly proven for government transfers to targeted groups of voters (Rogoff and Sibert, 1988)) in the pre-election period, where such manipulation fails to affect real economic activity (fails to reduce unemployment and GDP growth), but is reflected in the consequential rise of inflation rate. (Alesina and Roubini, 1992.)

Testing opportunistic business cycle model with quarterly data for the U.S. unemployment rate from January 1948. to January 2011. the regression equation which displays the influence of the pre-election period on the change in the unemployment rate has the following appearance:

$$Un_t = \beta_0 + \beta_1 Un_{t-1} + \beta_2 Un_{t-2} + \beta_3 DUM + \varepsilon_t$$

,where Un_t indicates the current unemployment rate, β_0 constant, Un_{t-1} and Un_{t-2} the unemployment rate in the previous two quarters, and DUM denotes dummy variable which takes the value 1 in the quarters preceding the election, and the value 0 in the other cases.

Several models have been tested in which a dummy variable took on a value of 1 for periods of 2 quarters up to 6 quarters before the election.

Based on the regression equation $Un_t = Un_{t-1} + DUM_i$ (i = 2, 3 ... 6) the p-value for the dummy variable took on large values compared to conventional significance level α (where the dummy variable took on a value of 1 for the pre-election periods of 2,3,4,5 and 6 quarters), so the results do not support the theory of a government manipulating economic sizes with the aim of influencing voters.

In Table 1 is the example of the results of the regression equation when the dummy variable takes the value 1 two quarters before the election.

Table 1: THE REGRESSION RESULTS FOR $U_t = \beta_0 + \beta_1 U_{t-1} + \beta_2 U_{t-2} + \beta_3 DUM2$[1]

Dependent Variable: UN				
Method: Least Squares				
Date: 02/25/12 Time: 19:14				
Sample (adjusted): 1948Q3 2011Q1				
Included observations: 251 after adjustments				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.312528	0.072168	4.330.557	0.0000
UN(-1)	1.621.246	0.047592	3.406.557	0.0000
UN(-2)	-0.674689	0.048014	-1.405.189	0.0000
DUM2	-0.010400	0.057416	-0.181135	0.8564
R-squared	0.965714	Mean dependent var		5.745.817
Adjusted R-squared	0.965298	S.D. dependent var		1.623.974
S.E. of regression	0.302522	Akaike info criterion		0.462483
Sum squared resid	2.260.534	Schwarz criterion		0.518666
Log likelihood	-5.404.162	Hannan-Quinn criter.		0.485092
F-statistic	2.319.058	Durbin-Watson stat		1.828.072
Prob(F-statistic)	0.000000			

2. DEVELOPED OPPORTUNISTIC BUSINESS CYCLE

2.1. Haynes and Stone model

Haynes and Stone in their analysis tested the impact of presidential elections on economic sizes (on unemployment, real GDP and inflation) along with the influence on the political sizes (on the money growth rate and adjusted budget surplus).

[1] data retrived from http://research.stlouisfed.org/fred2, and analyzed in EViews 7

They estimated regressions where macroeconomic and macropolitical values were used as the dependent variable, while 16 dummy variables were used as independent variables (one for each quarter of the presidential election cycle), which is the model which had been neglected by all previous analysts.

In their analysis they used quarterly values for the period from 1951 to 1986 year in the United States.

Based on 3 separate regressions for unemployment, GDP and inflation results show 16 quarter cycles, that are approximately sinusoidal, where unemployment reaches its lowest value in the quarter of elections, GDP reaches its maximum value 1 quarter before the election, and inflation its lowest value 3 quarters before election. Regressions reject the hypothesis that the dummy values are constants.

Obtained dummy variables are shown in Figure 1.

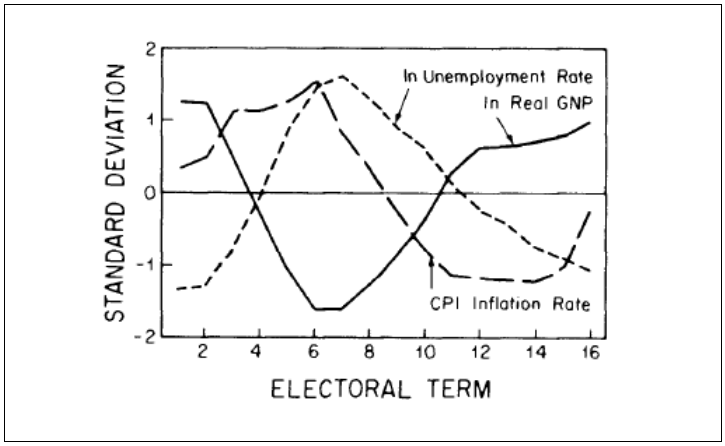

Figure 1: GDP, UNEMPLOYMENT AND INFLATION DURING ELECTION CYCLE (Haynes and Stone, 1989)

Haynes and Stone also tested the impact of the electoral cycle on macropolitical variables – on the logarithm of the money growth rate (M1) and the cyclically adjusted budget surplus.

These values were used as the dependent variable, while 16 dummy variables were used as the independent variables. Results of testing indicate the existence of sinusoidal, apparently periodic behavior of both variables as can be seen in the Figure 2.

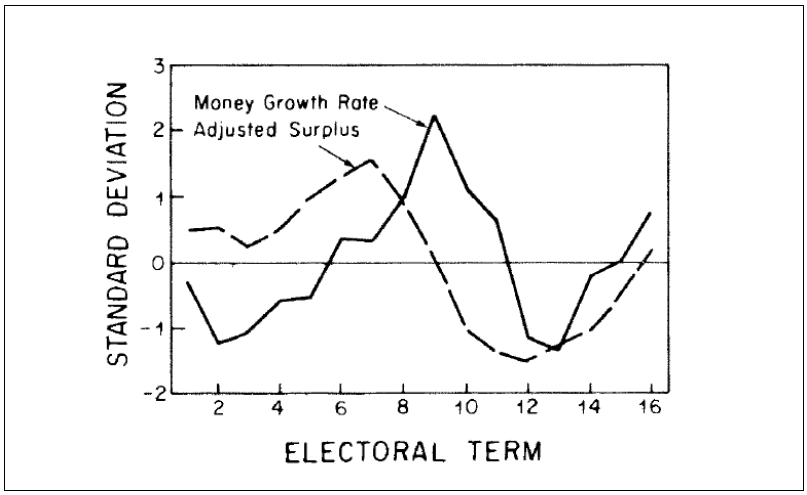

Figure 2: MONEY GROWTH AND BUDGET SURPLUS DURING ELECTION CYCLE (Haynes and Stone,1989)

With the aim of confirming their results the authors tested whether the results obtained for the macroeconomic value were in accordance with the results obtained for the macropolitical values.

Affirmation consisted of three steps. First, authors estimated the impact of changes in macropolitical on changes of macroeconomic values. Second, based on the 16 dummy variables that were derived for the money supply and budget surpluses authors anticipated cyclical patterns for macroeconomic values. In the end, they compared the actual and predicted values related to macroeconomic variables.

In the first step, it has been proven that there exists a highly significant relationship between money growth and GDP, unemployment and inflation (where a lag between money growth and the effect on unemployment and growth of GDP is about one year), while there has been found no significant relationship between the budget surplus and macroeconomic values. Using the mentioned relationship and 16 dummy variables that describe the money supply and budget surpluses, authors have calculated 16 variables that predict unemployment, real GDP and inflation. Predicted unemployment and inflation have cyclical character, with higher values in the first two years, and lower values during the next two years, that is during the pre-election period. Estimated GDP has larger values than its mean value during the two years preceding the election.

Comparison of predicted values with the actual values led to the conclusion that there is a strong positive correlation for all three variables. The correlation between actual and predicted values was 0.62 for unemployment, 0.72 for GDP, and 0.73 for inflation, significantly at the 5% level.

Authors tested traditional models with the same data, and on the basis of traditional models they found no significant support for opportunistic electoral model. Therefore authors concluded that previous

negative findings of the electoral cycles in economic values were untrue, because of the false assumptions of those models. (Haynes and Stone,1989). Testing the opportunistic model with regressions set up like in the model of Haynes and Stone using quarterly data for the U.S. unemployment rate for the period from January 1948 to January 2011 regression used the current unemployment rate as the dependent variable, and for the independent variables used the unemployment rate in the previous two quarters and 16 dummy variables where the $DUM_i = 1$ for the i-th quarter before the election, and in other cases zero.

Based on such regressions the existence of cyclical movements in the unemployment rate for the period of 16 quarters has been affirmed as it is evident from the results in Table 2.

Table 2: THE REGRESSION RESULTS FOR $U_t = \beta_0 U_{t-1} + \beta_1 U_{t-2} + \beta_2 DUM1 + \beta_3 DUM2 + \beta_4 DUM3 + \beta_5 DUM4 + \beta_6 DUM5 + \beta_7 DUM6 + \beta_8 DUM7 + \beta_9 DUM8 + \beta_{10} DUM9 + \beta_{11} DUM10 + \beta_{12} DUM11 + \beta_{13} DUM12 + \beta_{14} DUM13 + \beta_{15} DUM14 + \beta_{16} DUM15 + \beta_{17} DUM16$ [2]

Dependent Variable: UNRATE				
Method: Least Squares				
Date: 03/04/12 Time: 18:44				
Sample (adjusted): 1948Q3 2011Q1				
Included observations: 251 after adjustments				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
UNRATE(-1)	1.623.625	0.048902	3.320.161	0.0000
UNRATE(-2)	-0.675764	0.049303	-1.370.635	0.0000
DUM1	0.254746	0.100984	2.522.636	0.0123
DUM2	0.335276	0.100694	3.329.662	0.0010
DUM3	0.398860	0.104427	3.819.528	0.0002
DUM4	0.178931	0.104876	1.706.120	0.0893
DUM5	0.299384	0.105425	2.839.786	0.0049
DUM6	0.276541	0.106021	2.608.362	0.0097
DUM7	0.221799	0.106114	2.090.185	0.0377
DUM8	0.294988	0.106247	2.776.425	0.0059
DUM9	0.292946	0.106139	2.760.017	0.0062
DUM10	0.297552	0.105764	2.813.363	0.0053
DUM11	0.276887	0.104996	2.637.118	0.0089
DUM12	0.350642	0.103804	3.377.920	0.0009
DUM13	0.419171	0.102982	4.070.343	0.0001
DUM14	0.250136	0.102443	2.441.718	0.0154
DUM15	0.350861	0.101643	3.451.907	0.0007
DUM16	0.351686	0.101293	3.471.953	0.0006
R-squared	0.967100	Mean dependent var		5.745.817
Adjusted R-squared	0.964700	S.D. dependent var		1.623.974
S.E. of regression	0.305118	Akaike info criterion		0.532778
Sum squared resid	2.169.164	Schwarz criterion		0.785599
Log likelihood	-4.886.358	Hannan-Quinn criter.		0.634519
Durbin-Watson stat	1.808.543			

[2] data retrived from http://research.stlouisfed.org/fred2, and analyzed in EViews 7

2.2. Letterie and Swank model

Haynes and Swank models found that cyclical unemployment exists during the reign of the Republicans, while it does not exist during the reign of the Democrats.

Letterie and Swank found explanation of this phenomenon by offering a different approach to the unemployment trends during the presidential cycle than it has been claimed by opportunistic models. The authors argue that voters vote for the party which better fits current economic situation, namely they vote for Republicans when the inflationary pressures are high and for Democrats when the inflationary pressures are low and real GDP is below its trend.

According to this model the Republicans are elected when inflationary pressures are high and they fight against high inflation with restrictive politics. They apply restrictive policy in the first half of their term, which decreases the growth rate of GDP during the first two years of their mandate. Once the inflationary pressures are restrained, the real GDP has a tendency to rise in the second half of the term. For Democrats the reverse process can be noticed by which the GDP growth tends to be higher during the first two years of their term, and lower during the following two years, as shown in Figure 3.

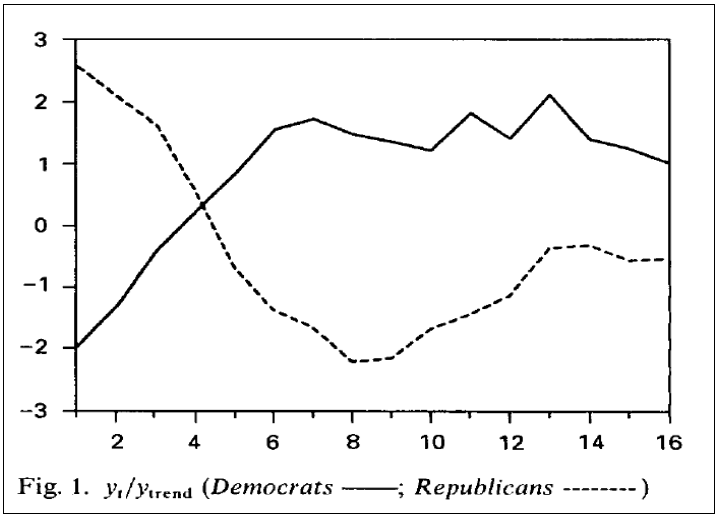

Figure 3: GDP GROWTH RATE DURING THE REIGN OF DEMOCRATIC AND REPUBLICAN GOVERNMENT (Letterie and Swank, 1997)

On the basis of these observations Letterie and Swank come to the conclusion that the movement of the growth rate of GDP during the election cycle derives from the dynamics of the economic system, instead of the electoral goals of government which tries to manipulate economic sizes in order to mislead voters. (Letterie and Swank,1997).

Results of tested regression equations for Republicans and Democrats with quarterly data for the U.S. unemployment rate during January 1948 to January 2011 show that the unemployment cycles exist during Republicans period of reign, while cycles have not been observed during Democrats reign. Such results are not in line with the theory Letterie and Swank, according to which during the Democrats reign there should exist a cycle, but with different phases of ups and downs than the cycle that can be seen during the Republicans reign.

Table 3: THE REGRESSION RESULTS FOR $U_t = \beta_0 U_{t-1} + \beta_1 U_{t-2} + \beta_2 DUM1 + \beta_3 DUM2 + \beta_4 DUM3 + \beta_5 DUM4 + \beta_6 DUM5 + \beta_7 DUM6 + \beta_8 DUM7 + \beta_9 DUM8 + \beta_{10} DUM9 + \beta_{11} DUM10 + \beta_{12} DUM11 + \beta_{13} DUM12 + \beta_{14} DUM13 + \beta_{15} DUM14 + \beta_{16} DUM15 + \beta_{17} DUM16$ *DURING THE REIGN OF DEMOCRATIC PRESIDENT* [3]

Dependent Variable: UNRATE				
Method: Least Squares				
Date: 03/04/12 Time: 19:02				
Sample (adjusted): 3 109				
Included observations: 107 after adjustments				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
UNRATE(-1)	1.110.901	0.104356	1.064.529	0.0000
UNRATE(-2)	-0.187347	0.108863	-1.720.943	0.0887
DUM1	0.218327	0.317090	0.688534	0.4929
DUM2	0.383803	0.315570	1.216.221	0.2271
DUM3	0.440301	0.335843	1.311.034	0.1932
DUM4	0.271692	0.335336	0.810208	0.4200
DUM5	0.410570	0.334932	1.225.831	0.2235
DUM6	0.376183	0.336783	1.116.987	0.2670
DUM7	0.299220	0.339153	0.882257	0.3800
DUM8	0.297119	0.350106	0.848653	0.3984
DUM9	0.309132	0.355216	0.870265	0.3865
DUM10	0.347909	0.364873	0.953506	0.3429
DUM11	0.225309	0.374487	0.601647	0.5489
DUM12	0.231996	0.379348	0.611565	0.5424
DUM13	0.374880	0.380262	0.985848	0.3269
DUM14	0.460629	0.375195	1.227.708	0.2228
DUM15	0.369296	0.379919	0.972038	0.3337
DUM16	2.212.044	0.317295	6.971.578	0.0000
R-squared	0.879910	Mean dependent var		5.502.804
Adjusted R-squared	0.856972	S.D. dependent var		1.686.878
S.E. of regression	0.637962	Akaike info criterion		2.091.181
Sum squared resid	3.622.263	Schwarz criterion		2.540.816
Log likelihood	-9.387.818	Hannan-Quinn criter.		2.273.457
Durbin-Watson stat	2.036.768			

[3] data retrived from http://research.stlouisfed.org/fred2, and analyzed in EViews 7

However, affirmative results for cycle during Republican term may be due to the fact that Republicans keep an eye on inflation, so that they have the ability to increase it in the pre-election period, and thus stimulate the economy which will have the impact of lowering the unemployment rate. Democrats do not reduce the unemployment rate because they are not able to do so because of the inflation, which is high at the end of their term, and not because the government does not have the aim of trying to manipulate voters as claimed by Letterie and Swank.

Regression results during the reign of the Democrats can be seen in Table 3, according to which the existence of cyclical unemployment is not visible.

TESTING PRE-ELECTIONAL DECREASE OF THE UNEMPLOYMENT RATE WITH CROATIAN DATA

In Croatia, unlike the United States, the parliament has more power than the president. Therefore, when testing the government's attempt of manipulation with the unemployment rate, decline in the unemployment rate should be observed in relation to the parliamentary elections instead of the presidential.

Croatian data related to the unemployment rate show visible annual cycles due to seasonal character of the Croatian economy. However four-year cycles were not found by testing the Haynes and Stone model with Croatian data. Neither was pre-election unemployment rate decline found in Croatia testing Nordhaus model.

It is possible that this is because the consistent database relating to the unemployment rate cannot be found prior to 1996 which is a rather short period of time. Also parliamentary elections were not maintained in equal cycles (they were held 1990, 1992, 1995, 2000, 2003, 2007 and 2011).

Future analysis concerning Croatian government pre-election manipulation should try to prove the existence of cyclicality in government transfers, tax benefits, public works and delaying layoffs and increased pre-election government spending.

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