

Where does gold grows ? 2016 Olympic medals prediction.

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Outline

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1. Presentation of the subject

Variabes

- Host effect: playing at home is an advantage
- GDP per capita: a rich country generally win more
- Population: Skilled athletes more likely to be found in populated countries
- Former results: Medal count at the previous games

1. Presentation of the subject some issues and improvement

- The GDP and the population don't explain all the result

name	code	Pop	Gdp	2012	2008
Jamaica	JAM	2709300	9159	12	11
Ethiopia	ETH	84730000	1191	7	7
Turkey	TUR	75627384	15001	5	8

2. Modelisation of the medals prediction

First model

- Medals as a function of the host, gdp, pop, total

```

Equation: EQ01  Workfile: OLYMPICS2008::Untitled
View|Proc|Object|Print|Name|Freeze|Estimate|Forecast|Stats|Resids
-----
Estimation Command:
=====
LS MEDALS C HOST GDP POP TOTAL

Estimation Equation:
=====
MEDALS = C(1) + C(2)*HOST + C(3)*GDP + C(4)*POP + C(5)*TOTAL

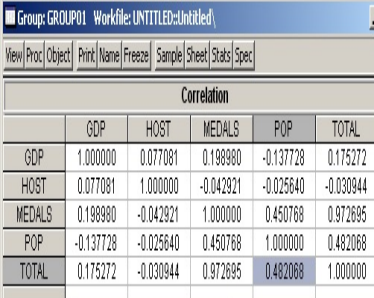
Substituted Coefficients:
=====
MEDALS = -0.0227061103985 - 2.72898061407*HOST + 3.03718380882e-05
          *GDP - 1.56877605816e-09*POP + 0.960578071224*TOTAL

```

2. Modelisation of the medals prediction

First model

- correlation matrix



The screenshot shows a software window titled "Group: GROUP01 Workfile: UNTITLED::Untitled\" with a menu bar containing "View", "Proc", "Object", "Print", "Name", "Freeze", "Sample", "Sheet", "Stats", and "Spec". Below the menu bar is a table titled "Correlation" with the following data:

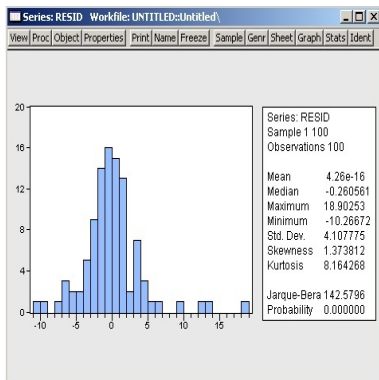
	GDP	HOST	MEDALS	POP	TOTAL
GDP	1.000000	0.077081	0.198980	-0.137728	0.175272
HOST	0.077081	1.000000	-0.042921	-0.025640	-0.030944
MEDALS	0.198980	-0.042921	1.000000	0.450768	0.972695
POP	-0.137728	-0.025640	0.450768	1.000000	0.482068
TOTAL	0.175272	-0.030944	0.972695	0.482068	1.000000

- Result : We did not take account of the population for the second model

2. Modelisation of the medals prediction

First model

- Jarque Bera Test

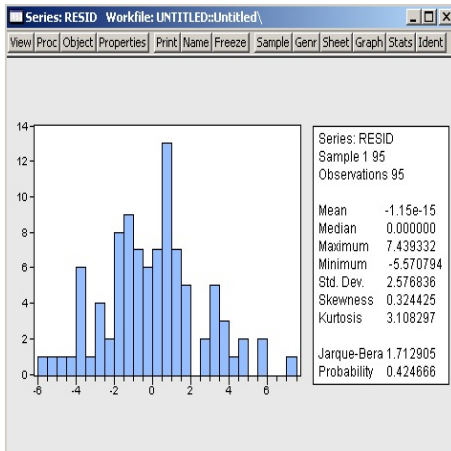


- Result : We removed Australia, Cuba, Iran, Japan and Russia

2. Modelisation of the medals prediction

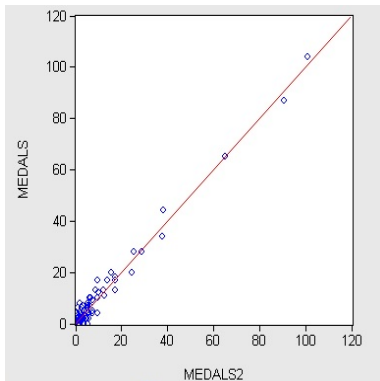
Second model

- New Jarque Bera test:



2. Modelisation of the medals prediction second model

- Regression line



- Prediction close to reality

2. Modelisation of the medals prediction second model

R-squared

Ramsey RESET Test

F-statistic	0.091901	Prob. F(1,90)	0.7625
Log likelihood ratio	0.096957	Prob. Chi-Square(1)	0.7555

Test Equation:

Dependent Variable: MEDALS

Method: Least Squares

Date: 05/21/13 Time: 10:46

Sample: 1 95

Included observations: 95

	Coefficient	Std. Error	t-Statistic	Prob.
C	0.162898	0.449932	0.362050	0.7182
TOTAL	0.892267	0.049078	18.18076	0.0000
GDP	1.99E-05	1.74E-05	1.141502	0.2567
HOST	21.43514	2.804333	7.643576	0.0000
FITTED^2	0.000181	0.000596	0.303152	0.7625

R-squared	0.974855	Mean dependent var	8.210526
Adjusted R-squared	0.973528	S.D. dependent var	16.25979
S.E. of regression	2.645496	Akaike info criterion	4.834790
Sum squared resid	629.8784	Schwarz criterion	4.969205
Log likelihood	-224.6525	Hannan-Quinn criter.	4.889104
F-statistic	865.2352	Durbin-Watson stat	2.197130
Prob(F-statistic)	0.000000		

3. Prevision of the medals in 2016

Result

- Some result

	2012	2016
Great Britain	65	60
Brazil	17	37
China	87	79
United States of America	104	95
France	34	32

END

- Thank you for your attention
Questions?