

Trabalho Final



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<https://drive.google.com/drive/folders/170dhnNcWA5ywmkOVrSl0nPoalmrgwVQ?usp=sharing>

Introdução

Esse trabalho tem como intuito analisar as variáveis explicativas para o gasto em militarismo nos EUA durante o período de 1940 à 1987.

Metodologia

Inicialmente identificamos as possíveis variáveis explicativas. Em seguida fazemos uma regressão linear múltipla e, por fim, testamos a significância de categorias de variáveis explicativas..

Base disponível

ID #	Variable name	Descriptive label
0	const	
1	year	
2	ug	unadjusted annual government outlays (\$ billions)
3	um	total U.S. military outlays (\$ billions)
4	gnpdef	implicit deflator for federal government purchases, base 1972
5	hdem	percent of democrats in the house of representatives
6	sdem	percent of democrats in the senate
7	pres	party of the president in office: Rep = 1 Dem = 0
8	elect	1 for Presidential election years, 0 otherwise
9	reagan	1 for the years of Reagan presidency, 0 otherwise
10	opp	1 when the Senate majority party opposed President
11	ww2	1 during 1941-1945, 0 elsewhere
12	kwar	1 during the Korean war period, 1951-1953, 0 elsewhere
13	vwar	1 during the Vietnam war period, 1965-1969, 0 elsewhere
14	krus	1 for years when Krushchev was in office, 0 otherwise
15	gorb	1 for years when Gorbachev was in office, 0 otherwise
16	salt	1 after the SALT I treaty, 0 before
Annual: Full range 1940 - 1987		

Regressão linear múltipla

```
Coefficients:
      Estimate Std. Error t value Pr(>|t|)
(Intercept)  64.30569   19.84501   3.240  0.00273 **
hdem         -0.91666    0.46001  -1.993  0.05462 .
sdem          0.46399    0.44885   1.034  0.30878
pres         17.21620    5.44622   3.161  0.00336 **
elect        -1.58503    3.47918  -0.456  0.65168
reagan       -37.93575   12.26294  -3.094  0.00401 **
opp          -2.65604    5.94991  -0.446  0.65822
ww2           8.70310    7.15016   1.217  0.23217
kwar         14.06505    7.79215   1.805  0.08020 .
vwar         21.54895    6.21503   3.467  0.00148 **
krus         14.70300    5.19710   2.829  0.00788 **
gorb        -16.52975   13.31994  -1.241  0.22336
salt         -7.68506    9.05732  -0.848  0.40228
gnpdef       -1.18622    0.33852  -3.504  0.00134 **
ug           0.59856    0.09434   6.345 3.51e-07 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 9.462 on 33 degrees of freedom
Multiple R-squared:  0.9858,    Adjusted R-squared:  0.9798
F-statistic: 164.1 on 14 and 33 DF,  p-value: < 2.2e-16
```

Teste de significância conjunta 1 - contraponto democrata

```
restrito <- lm(um ~ pres + reagan + reagan + ww2 + kwar + vwar + krus + gorb + salt + gnpdef + ug,  
data=USA)
```

```
USA$res <- restrito$residuals
```

```
pred1 <- lm(res ~ hdem + sdem + pres + elect + reagan + reagan + opp + ww2 + kwar + vwar + krus +  
gorb + salt + gnpdef + ug, data=USA)
```

```
R2 <- 0.1215
```

```
limiar <- nrow(USA) * R2
```

```
qchisq(.05,4,,FALSE)
```

```
pchisq(limiar, 4,,FALSE)
```

Chi crítico = 9.487

Chi calculado = 5.832

p-valor = 0.212

Não rejeitamos H0

Teste de significância conjunta 2 - URSS

Separação entre períodos históricos distintos: guerra e pós guerra.

Variáveis:

kwar, vwar, krus

gorb, salt

Chi crítico = 7.815

Chi calculado = 14.707

p-valor = 0.002

Rejeitamos H0

Chi crítico = 5.991

Chi calculado = 2.859

p-valor = 0.239

Não rejeitamos H0

Database

data10-4 U.S military expenditures

Disponível em: gretl > Open Data > Sample File >
Ramanathan