

# Osnovi statistike

## Vježbe I

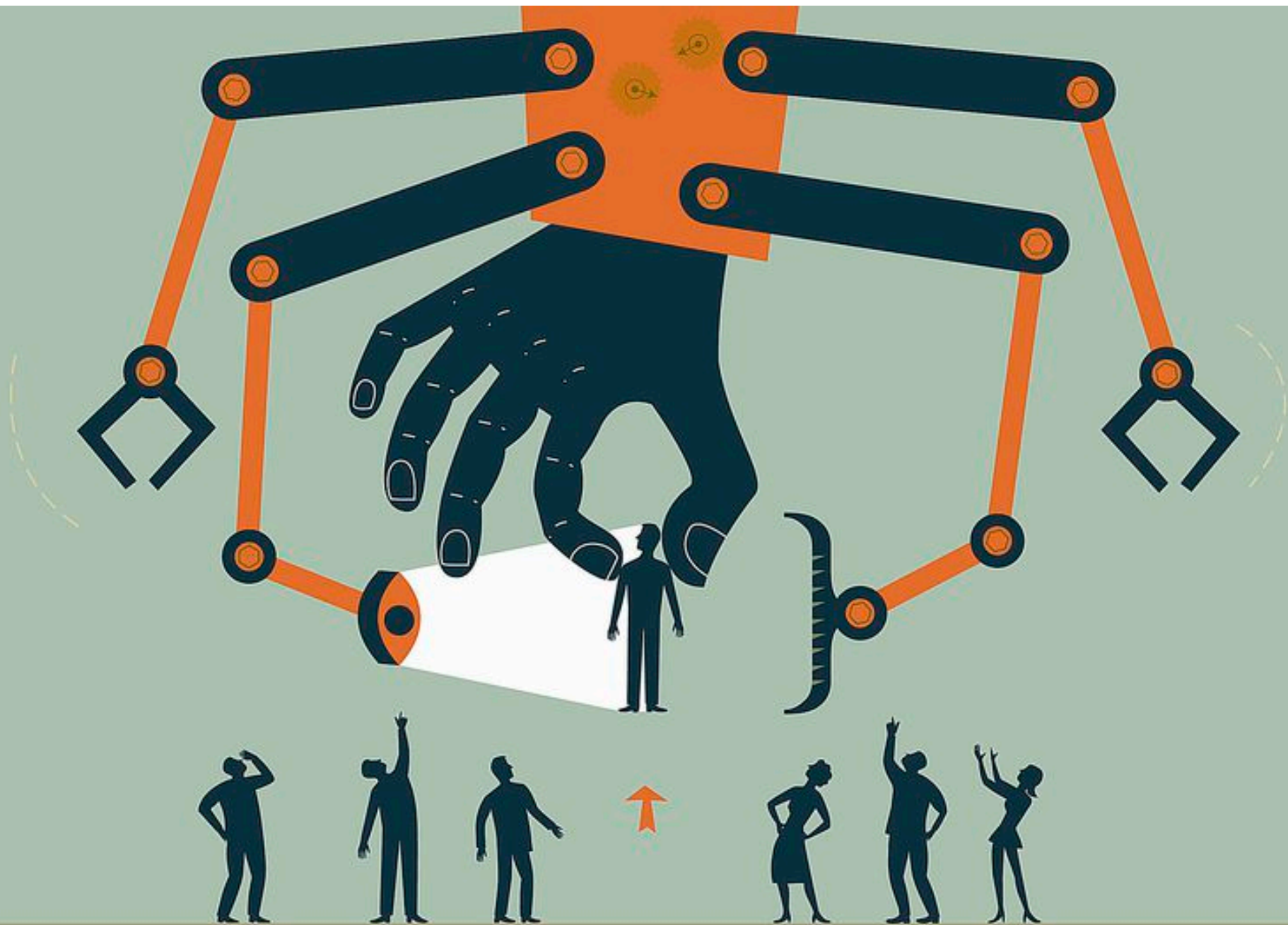
21.02.2018  
Nemanja Batrićević

# Osnovne karakteristike

- Statistika se najčešće definiše kao set matematičkih procedura za organizovanje i interpretiranje informacija
- Statistika stoga ima (najmanje) dvije funkcije:
  1. Organizovanje i sumiranje informacija
  2. Daje odgovor na pitanja koja su predmet našeg istraživanja

# Populacija i uzorak

- Populacija predstavlja cjelokupan set pojedinaca relevantnih za konkretno istraživačko pitanje
- Karakteristike populacije nazivamo – **parametrima**
- Uzorak je podskup pojedinaca uzetih iz populacije, koji predstavljaju cijelu populaciju u datoj studiji
  - *Slučajan i neslučajan uzorak*
- Karakteristike uzorka nazivamo - **statistika**

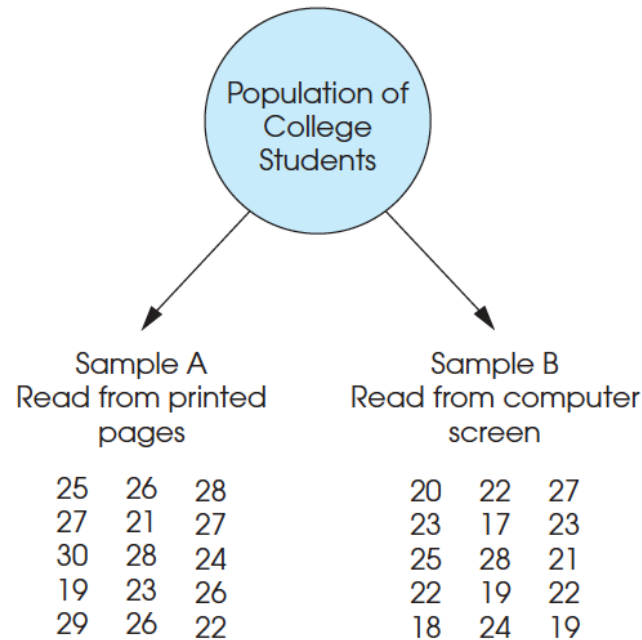


# Grane statistike

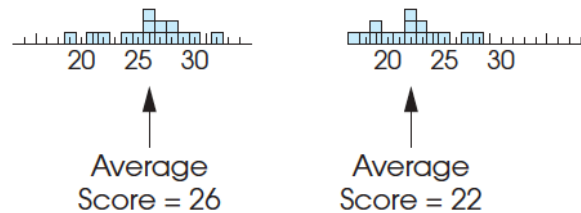
- **Deskriptivna statistika**
  - Mjere centralne tendencije
  - Mjere varijacije
- **Statističko zaključivanje** – tehnike generalizovanja na populaciju na osnovu uzorka
- **Uzoračka greška** – prirodno odstupanje (greška) koja postoji između *statistike* i *parametara*

**Step 1**  
*Experiment:*  
 Compare two  
 studying methods

*Data*  
 Test scores for the  
 students in each  
 sample



**Step 2**  
*Descriptive statistics:*  
 Organize and simplify



**Step 3**  
*Inferential statistics:*  
 Interpret results

The sample data show a 4-point difference between the two methods of studying. However, there are two ways to interpret the results.

1. There actually is no difference between the two studying methods, and the sample difference is due to chance (sampling error).
2. There really is a difference between the two methods, and the sample data accurately reflect this difference.

The goal of inferential statistics is to help researchers decide between the two interpretations.

**FIGURE 1.3**

The role of statistics in research.

# Skale mjerenja

- Nominalne
- Ordinalne
- Intervalne
- Racio (Skala odnosa)

# Prezentacija podataka

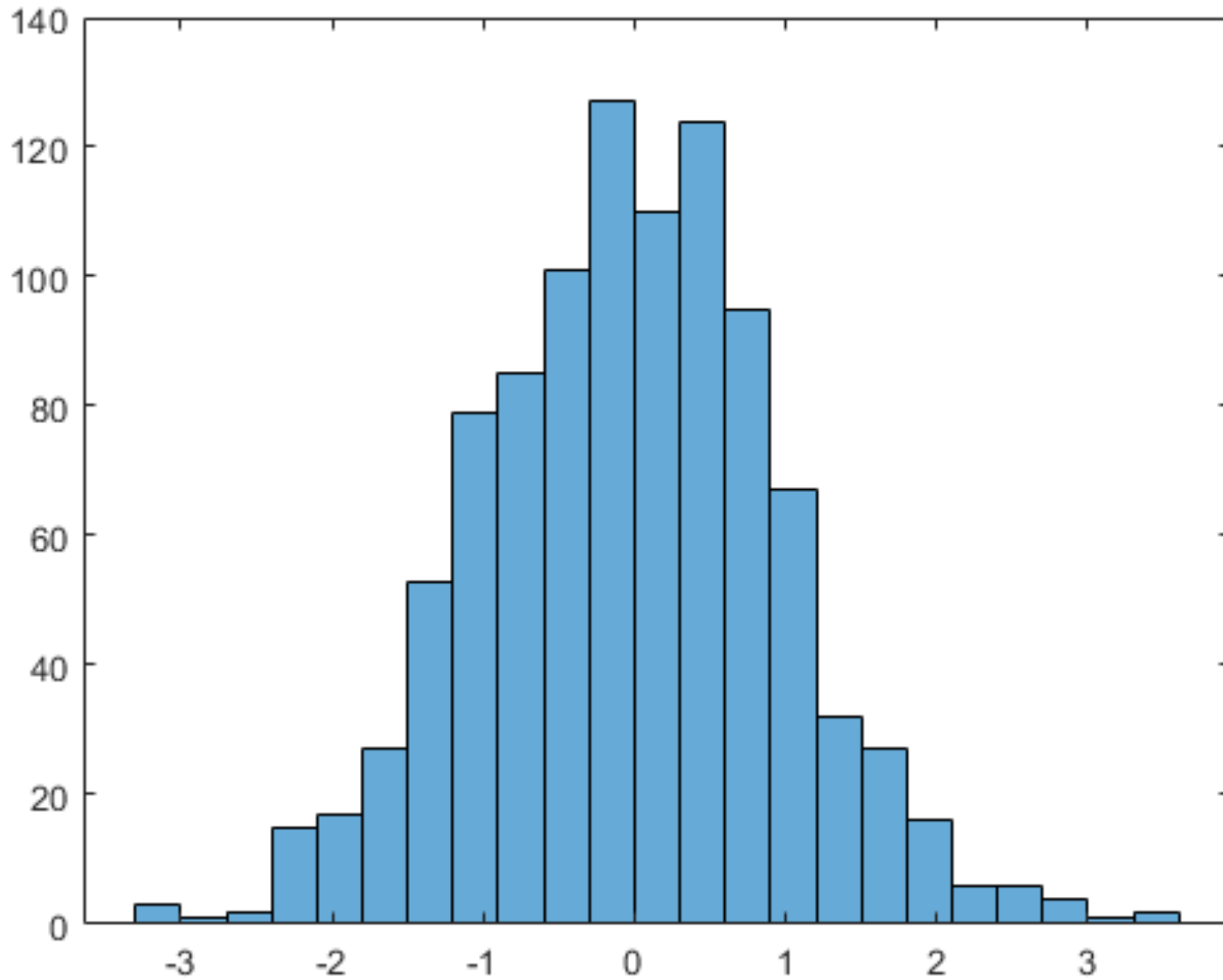
<i>Prikaz</i>	<i>Nominalna</i>	<i>Ordinalna</i>	<i>Intervalna</i>	<i>Skala odnosa</i>
<i>Tabelele frek.</i>	Da	Da	Da	Da
<i>Pita dijagram</i>	Da	Da	Ne	Ne
<i>Histogram</i>	Da	Da	Ne	Ne
<i>Dijagram rasturanja</i>	Ne	Ne/Da	Da	Da
<i>Vremenske serije</i>	Ne	Ne	Da	Da



Tabela 5: *Efektivni broj partija u Crnoj Gori nakon parlamentarnih izbora*

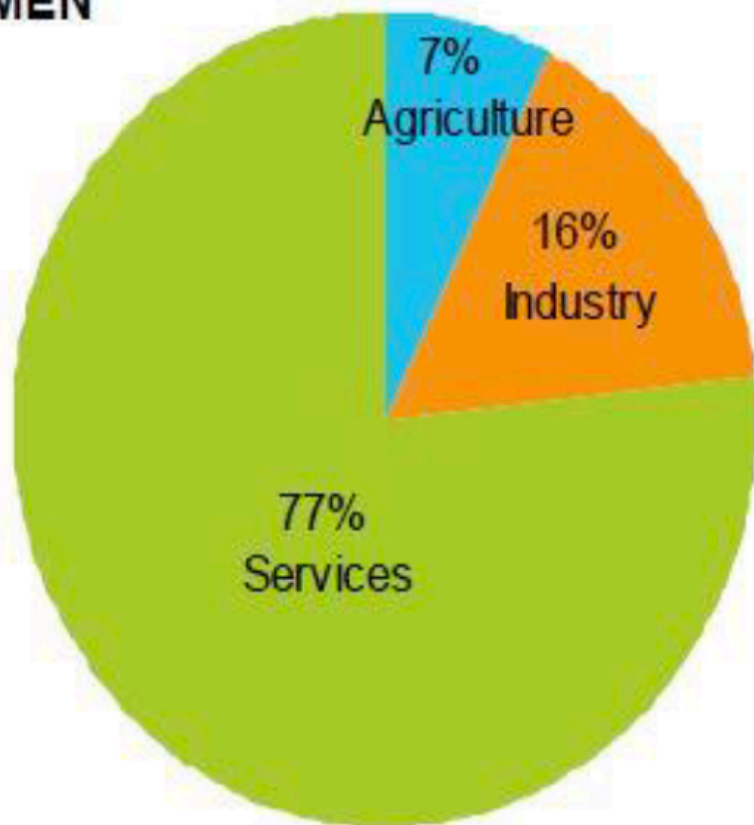
	Godina izbora	Broj partija koje su osvojile mandate	Efektivni broj partija
1.	1990.	11	2.1
2.	1992.	4	2.8
3.	1996.	6	2.3
4.	1998.	7	3.5
5.	2001.	8	3.9
6.	2002.	9	3.9
7.	2006.	16	4.8
8.	2009.	11	3.9
Prosječno		9	4.2

## Tabela frekvencije

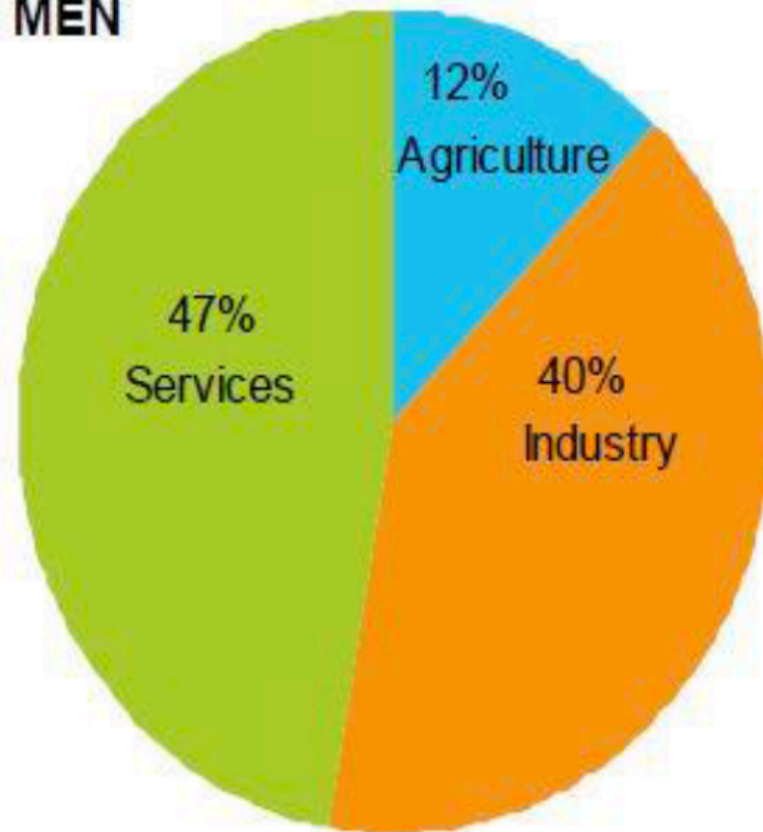


**Histogram**

## WOMEN

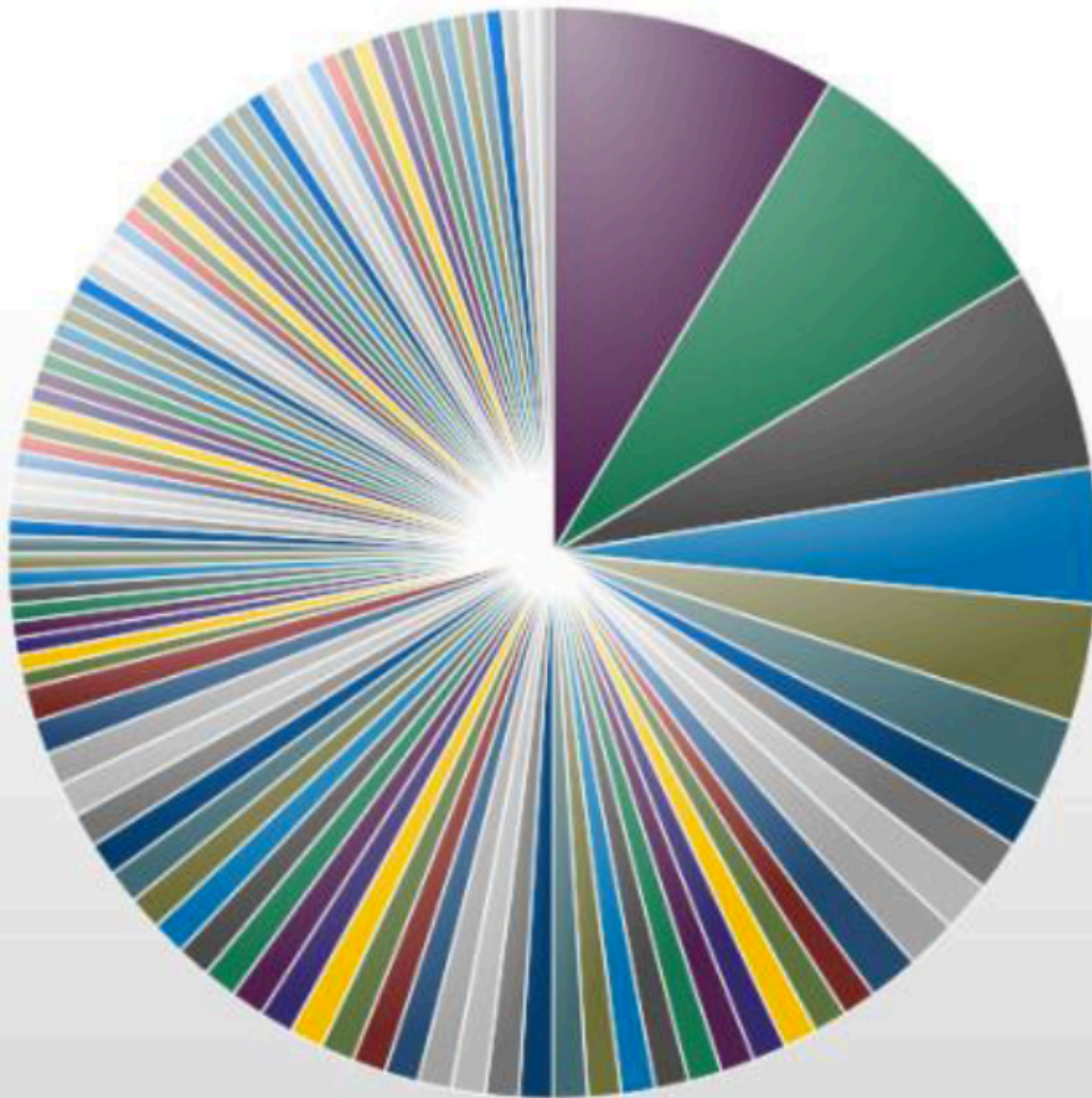


## MEN

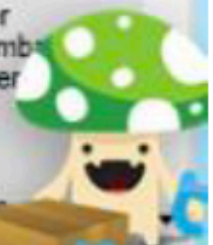


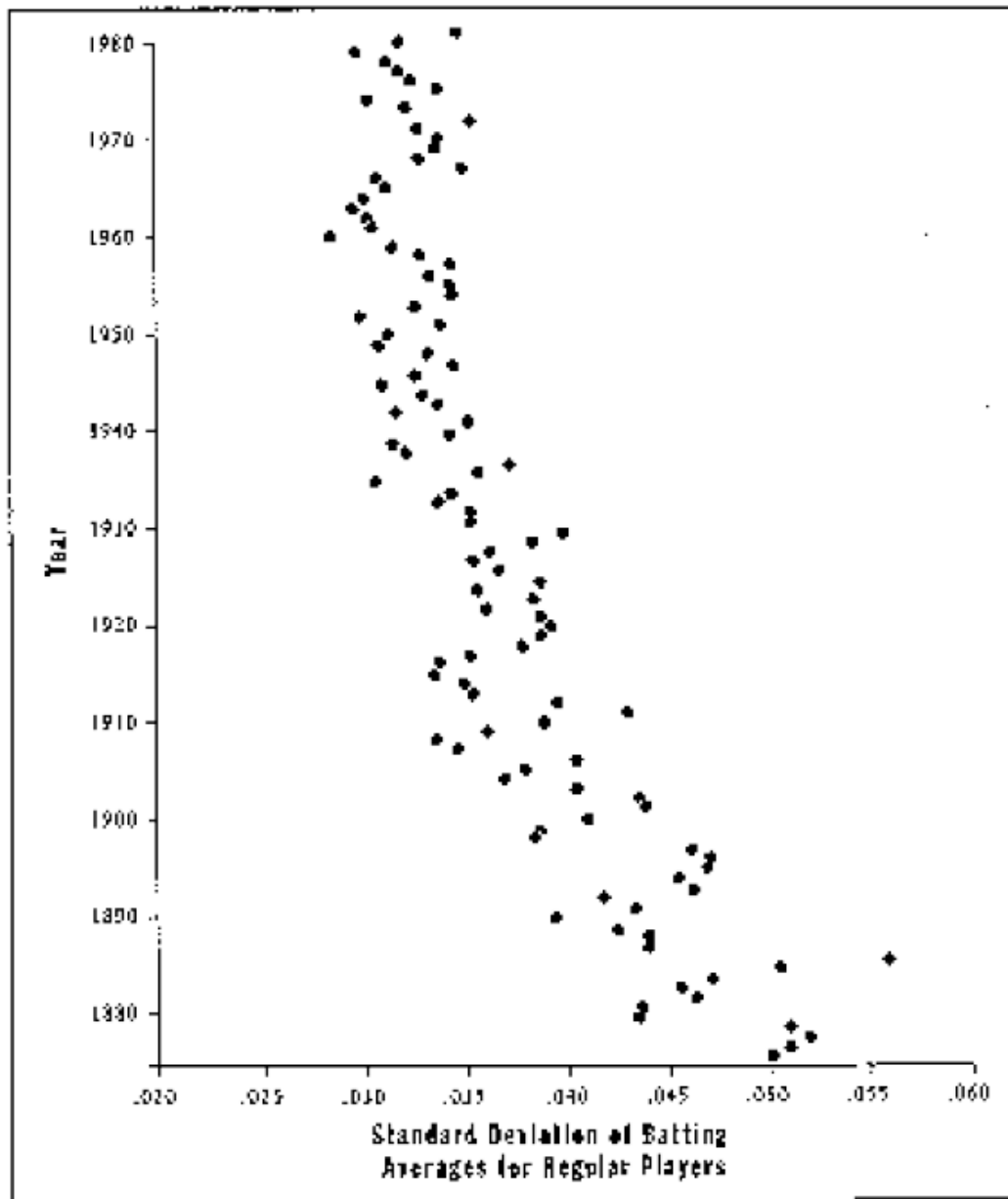
Source: UNECE Statistical Database

# Pita diagram



- download11
- suhd
- iggym
- paviles
- System
- silverfighter
- saurabhshah
- giographix
- DianaKhalil
- dotnetshoutout
- jeffsand
- LukCAD
- inkhead
- alexpuig
- phpcamp
- MSExpression
- hashajax
- marxwang
- del\_javascript
- james\_novak
- mmarkov
- katriendg
- engineerfinder
- ch9
- flashbrasil
- irhetric
- JungchanHsieh
- niceoutput
- ijross
- BrianBBrian
- Tunis
- pl\_sharepoint
- skroski
- Crssp
- timheuer
- jorgegamb
- JimDeger
- iBlend
- xgluxv
- peiklk
- Ivanlowe
- mivv

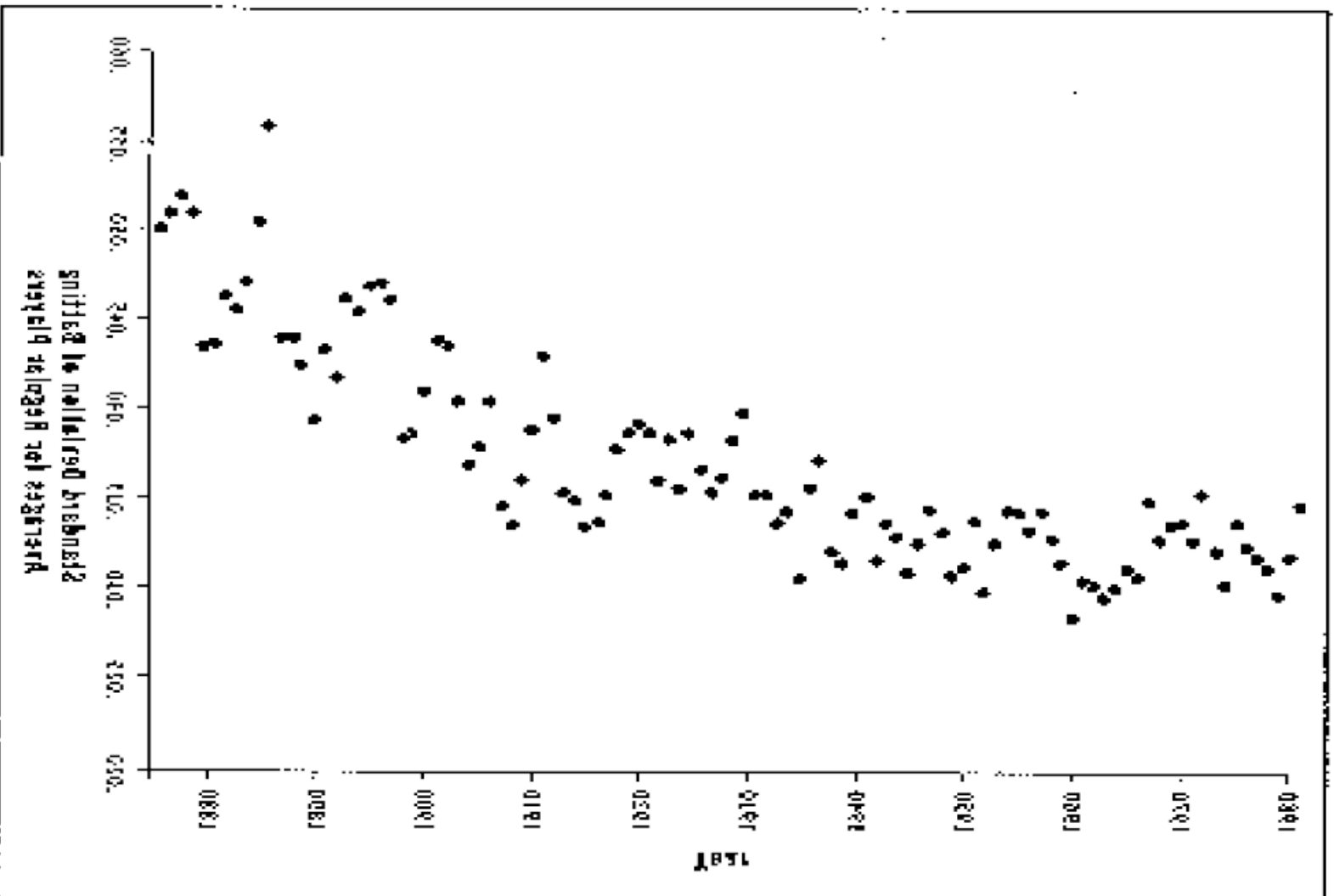




# Dijagram rasturanja

FIGURE 16

Standard deviation of batting averages for all full-time players by year for the first 100 years of professional baseball. Note the regular decline.

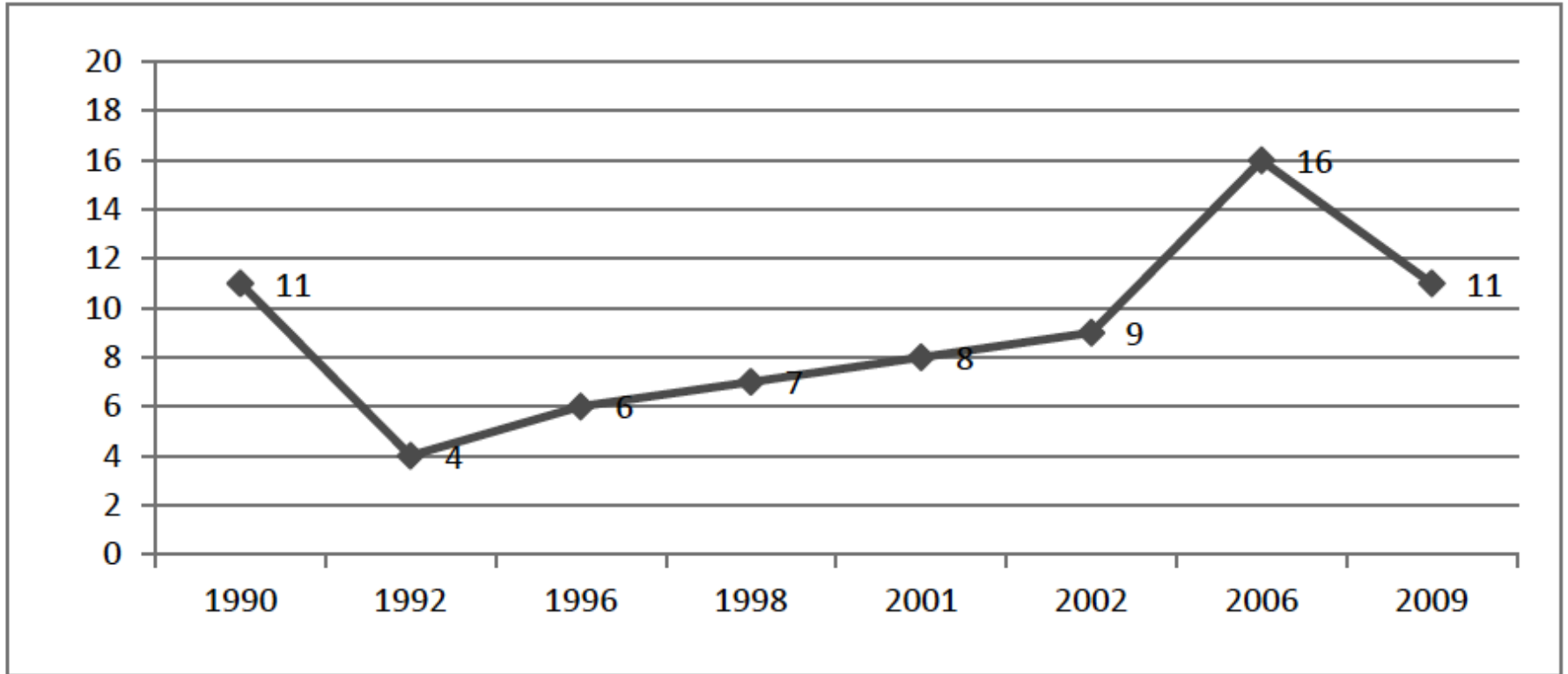


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Dijagram rasturanja

Grafik 4: *Grafički prikaz broja partija koje su osvojile mandate po izborima*



**Vremenska serija**

# Varljiva statistika



# 2012 PRESIDENTIAL RUN

GOP CANDIDATES



**FOX**

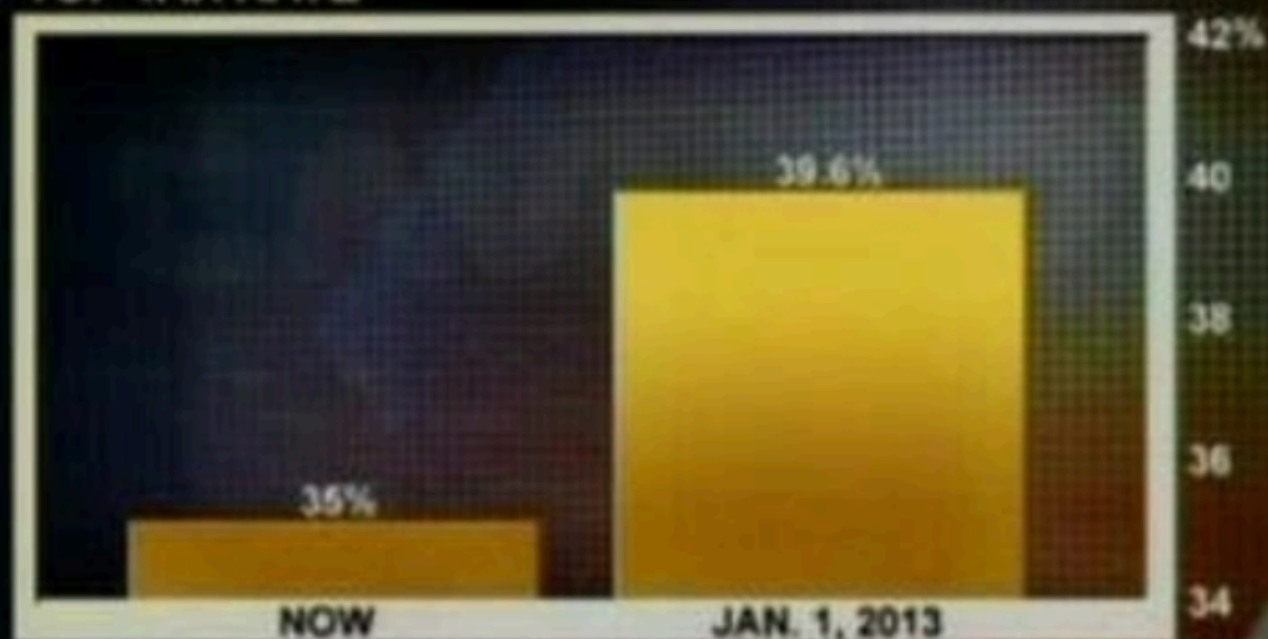
47'

SOURCE: OPINIONS

DYNAMIC

# IF BUSH TAX CUTS EXPIRE

## TOP TAX RATE



8:01 p ET

**FOX**  
BUSINESS

TOP STORIES

TECHNOLOGY

CONSUMER


WITH THE JUSTICE DEPARTMENT AND ACQUIRES FULL T

DOW 13008.68  $\nabla$  64.33

S&P 1379.32  $\nabla$  5.98

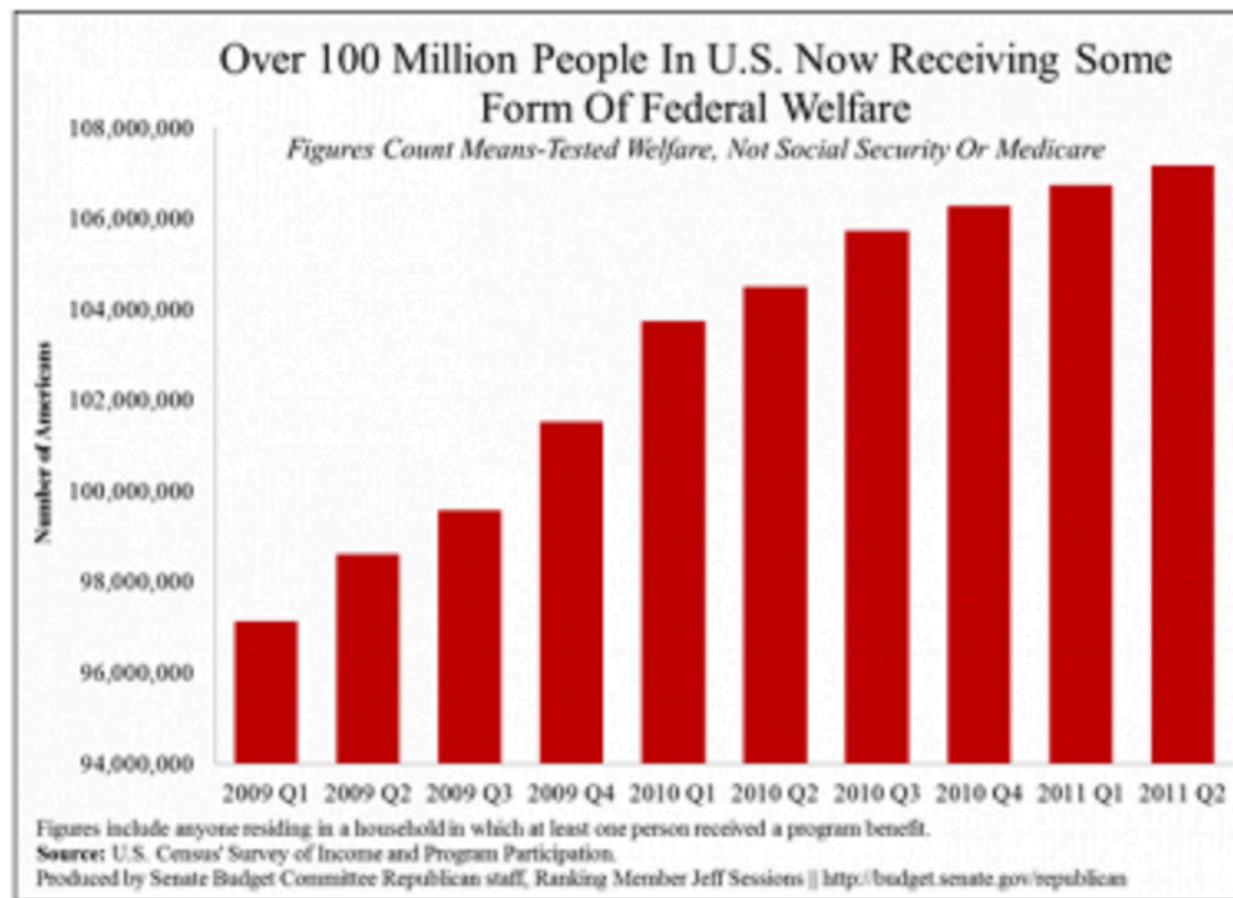
NASDAQ 2939.52  $\nabla$  6.32

# Over 100 Million Now Receiving Federal Welfare

2:40 PM, AUG 8, 2012 • BY DANIEL HALPER 



A new chart set to be released later today by the Republican side of the Senate Budget Committee details a startling statistic: "Over 100 Million People in U.S. Now Receiving Some Form Of Federal Welfare."



# UNEMPLOYMENT RATE

## UNDER PRESIDENT OBAMA



2011

SOURCE: BUREAU OF LABOR STATISTICS



AR WAR AND A TROOP WITHDRAWAL AT THE E/ NAS FUT 2,292.50