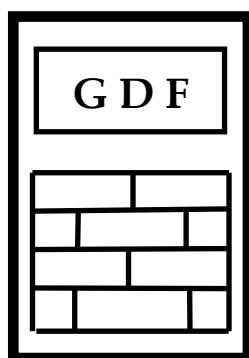


# **GDF DATA BANKS BULLETIN**

**HuPoTest – 50 years of research**



**VOL. 21 , No. 6**

**Bucharest, June 2017**

**ROMANIA**

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## Upon some features of global economic structure

In March 2017 the website of Microsoft (<http://www.msn.com/en-us/money/markets/>) described the share of major 20 countries covering 80% of world economy based on the data issued by International Monetary Fund (IMF) especially for Gross Domestic Product (GDP). Thorough similar study was made one year ago with interesting conclusions about the re-definition of richness and poorness [1].

The attached table contains row and retrieved data in view to reveal the main features shortly discussed below. Important to observe firstly that well known G-20 list differs with several countries from the actual list, namely Argentina, South Africa and European Union are replaced by Spain, Switzerland and Netherlands. In the left side of table the country rating A according to share (in %) to the global economy is considered. Figure 1 represents the perfect relationship between GDP and share and this means that practically these 20 countries cover almost overall global economy.

Figure 2 shows the relationship between country shares to global economy and rating A fairly described by normal exponential decay revealing the highly structured of global economy independently of population and surface of these countries.

On the right side of attached table the rating B according to the GDP/population (in \$/person) is considered. Figure 3 shows that their relationship can not be well described by normal exponential decay, but more important is that five groups (classes) of countries are clearly revealed and marked on the three columns in the table. The main feature of these groups consists in the fact that rich people and poor people separate progressively from group I to V, namely rich people become richer in smaller groups while poor people become poorer in greater groups. The similar analysis on each country for the correlation between personal fortunes (for instance bank accounts) and population will reveal the same normal exponential decay with increasing parameter b in absolute value along group I to V.

Significant example is the annual report on gross household income for each state and region in Australia [2]. These values are distributed on 5 social groups defining their income rating (1 for richest and 5 for poorest one). Figure 4 shows the two parameters for normal exponential decay for all states and regions. Although Australia is a country with high life style like Switzerland where the difference between social classes are small, the results show that there are clear differences both between states (WA=richest, TAS=poorest) and inside each one, so a linear relationship between a and b exists substantiating the above mentioned rule. Regions NT and ACT have a different social and economic structure in respect to the other ones.

**CONCLUSION:** Financial and social data must be considered together in view to report economic evolution of a human community.

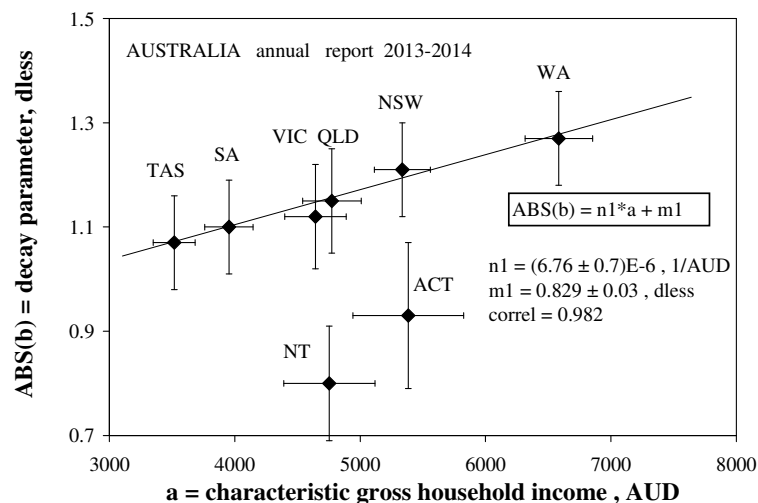


Figure 4.

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- [1] G.Dragan, Gold versus money. 1. An overview on main financial figures of world countries. 2. Rich, middle and poor countries., GDF Databanks.Bull., 19(1, 2) 2015.
- [2] Australian Bureau of Statistics, 6523.0 Household Income and Wealth, Australia, 2013–14, (2015); [www.abs.gov.au](http://www.abs.gov.au)

RATING A	country	share %	population millions	GDP \$trillion	share/GDP %/\$trillion	RATING B	country	GDP/person \$/person
1	USA	24.7	323.95	18.04	1.37	1	SWITZERLAND	80.92
2	CHINA	15.1	138000	11.01	1.37	2	USA	55.69
3	JAPAN	6.29	126.96	4.38	1.44	3	AUSTRALIA	54.38
4	GERMANY	4.65	81.41	3.36	1.38	4	MEXICO	44.13
5	UK	3.52	65.14	2.86	1.23	5	INDONESIA	44.13
6	FRANCE	3.31	66.63	2.42	1.37	6	NETHERLANDS	44.13
7	INDIA	2.99	131000	2.1	1.42	7	UK	43.91
8	ITALY	2.46	60.8	1.82	1.35	8	CANADA	42.71
9	BRAZIL	2.35	207.85	1.77	1.33	9	GERMANY	41.27
10	CANADA	2.04	36.29	1.55	1.32	10	FRANCE	36.32
11	S-KOREA	1.87	50.62	1.38	1.36	11	JAPAN	34.50
12	RUSSIA	1.69	146.52	1.33	1.27	12	ITALY	29.93
13	AUSTRALIA	1.67	24.64	1.34	1.25	13	S-KOREA	27.26
14	SPAIN	1.66	46.42	1.2	1.38	14	SPAIN	25.85
15	MEXICO	1.41	17	0.750	1.88	15	SAUDI ARABIA	20.48
16	INDONESIA	1.25	17	0.750	1.67	16	TURKEY	9.13
17	NETHERLANDS	1.02	17	0.750	1.36	17	RUSSIA	9.08
18	TURKEY	0.978	78.67	0.718	1.36	18	BRAZIL	8.52
19	SWITZERLAND	0.881	8.29	0.671	1.31	19	CHINA	0.08
20	SAUDI ARABIA	0.848	31.54	0.646	1.31	20	INDIA	0.02
<b>TOTAL</b>		<b>80.7</b>			<b>average</b>			<b>1.39</b>
					<b>stdev</b>			<b>0.15</b>

source of data: www.msn.com; www.imf.org

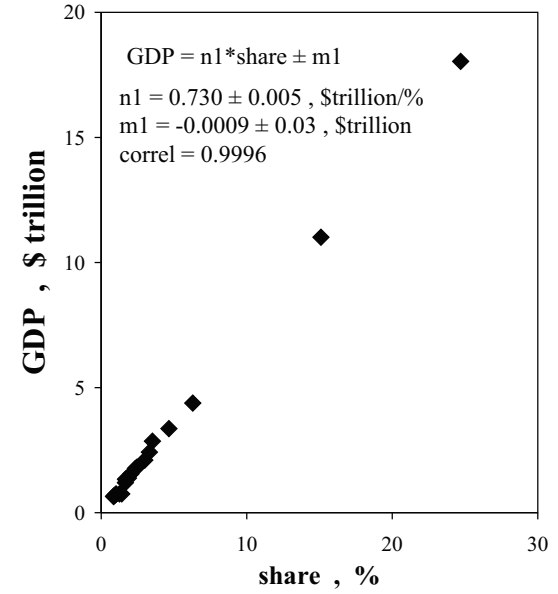


Figure 1.

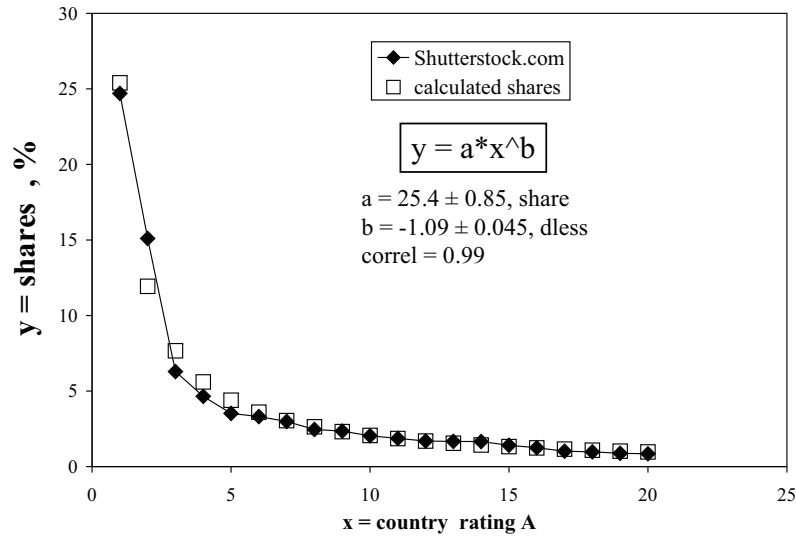


Figure 2.

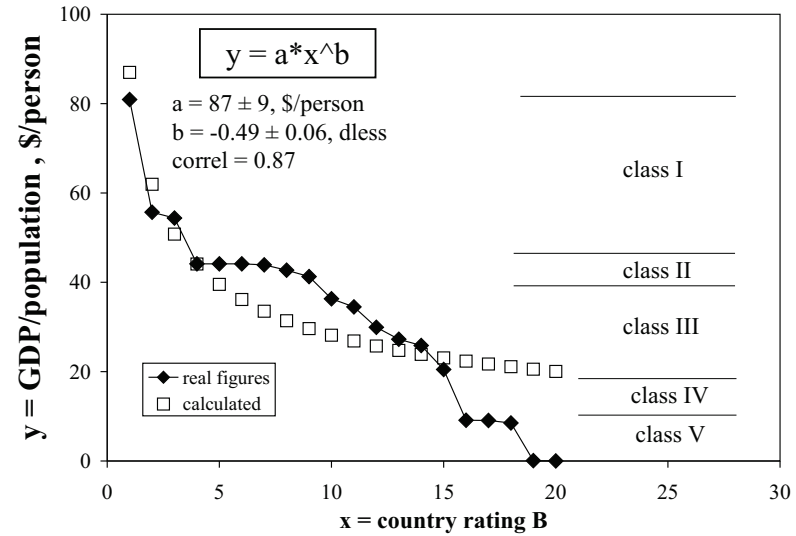


Figure 3.

## Eurovision song contest 2017

Some important features of Eurovision Song Contest (ESC) were revealed in previous notes [1, 2]. It is important to repeat that final results have mostly social contribution. Any hit has a life span characterized by a specific decay in popularity. In the case of ESC, the impact of each song is essential because they are presented in prime audition. This impact depends on the social context first as any event published by international media. The social distribution of this impact has a normal exponential decay over the all presented songs, so the most proper fit of this phenomenon can be described by the function: points (votes) =  $a \cdot \exp(b \cdot \text{rating})$ . It is important to mention that this function describes most of social phenomena like recently studied of social distribution of richness [3]. In view to compare these results along many ESC editions, standard parameters were defined, namely points (votes) gained by each song expressed in percentages (%points) as function of resulted rating [1, 2]. Another important result revealed in previous notes is that with minor exceptions given by local arrangements, the winner songs had bigger number of votes in good agreement with the general decay exponential rule (correlation coefficients > 0.95).

Figure 1 shows the evolution of absolute points (votes) obtained by ESC winner songs over 1994 - 2017 in comparison with %points in Figure 2. Figure 3 shows the phylogeny of all ESC on this period of time by considering the exponential dependence of %points vs rating. In this way it is possible to compare basic features of all considered ESC, namely by quality of songs defining the competition level at each ESC. There are two aspects defining the competition level: (i) the %point of winner song (parameter a) and (ii) the exponential decay of impact for overall songs (parameter b). Figure 4 shows the variation of parameter a along the ESC on the above mentioned time period. Figures 2 and 4 are very close, but not identical due by different competition level of each ESC. Figure 5 shows phylogenies of several ESC editions for finals and semifinals. The main differences arise from different voting conditions, but both of them reveal the same competition level order as expressed by the distribution of ESC editions along the two straight lines.

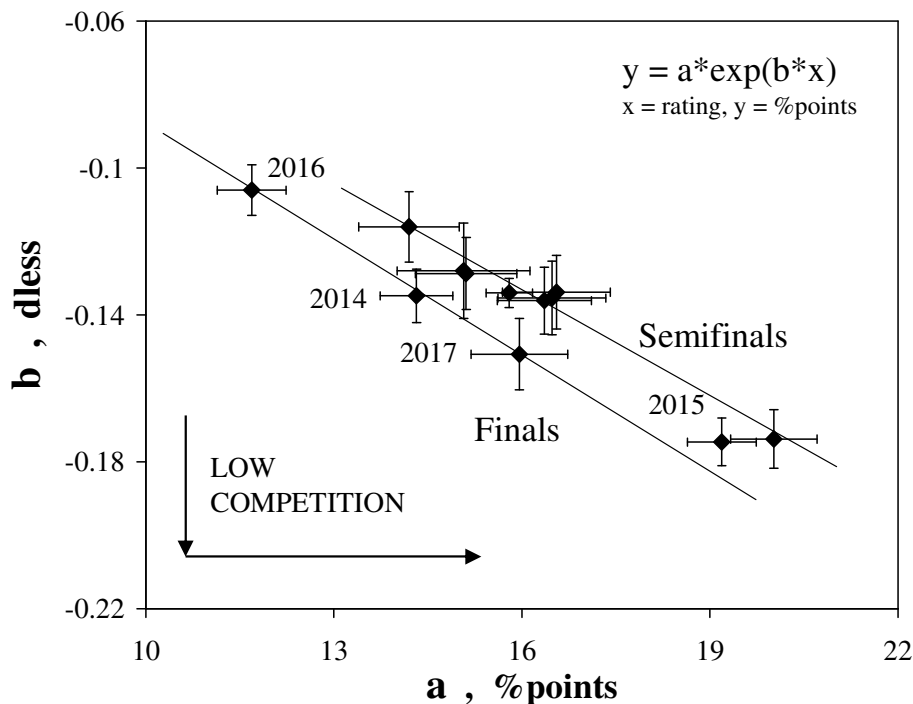
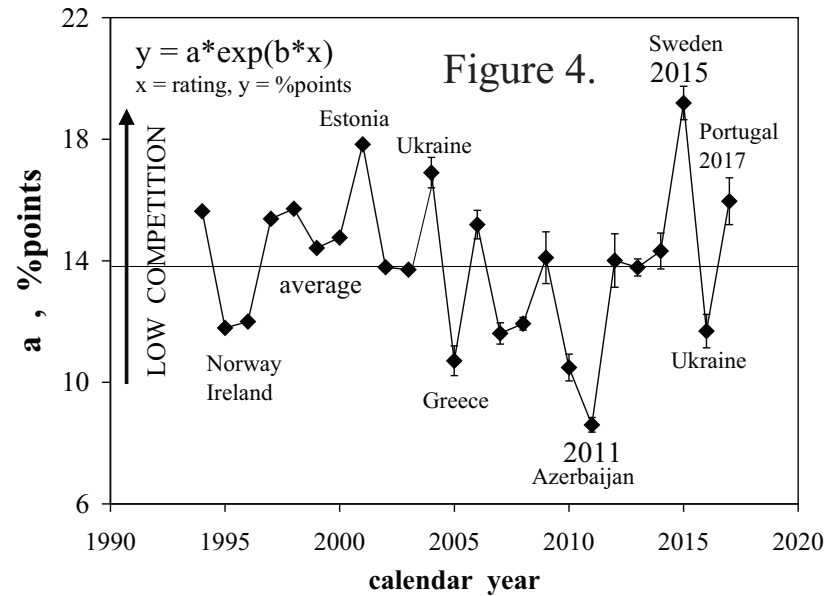
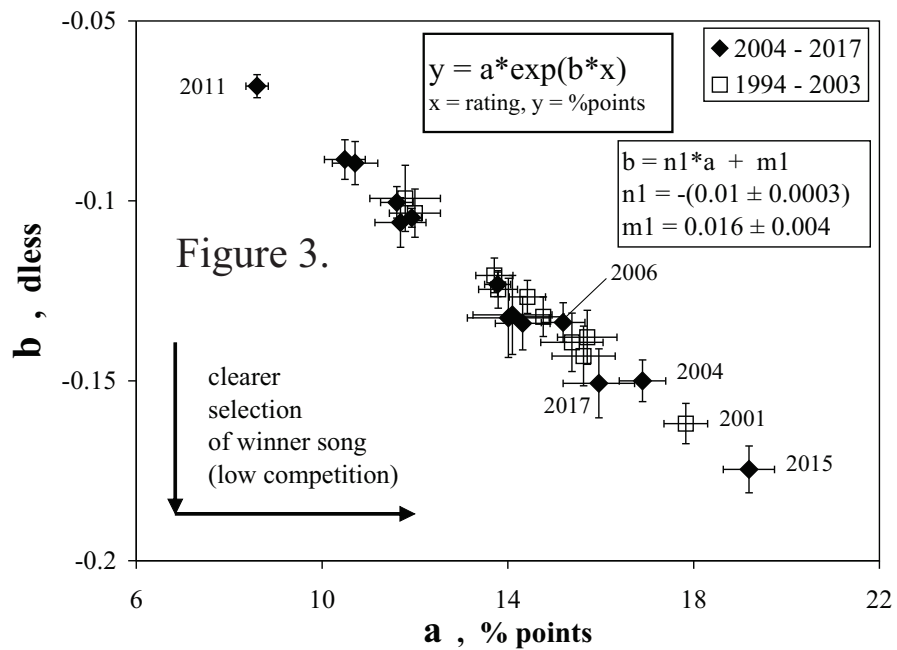
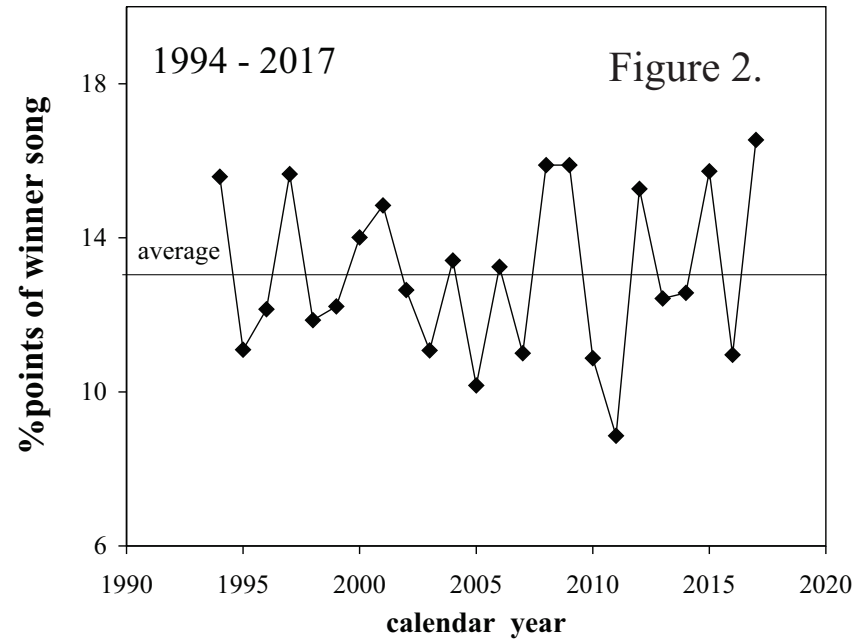
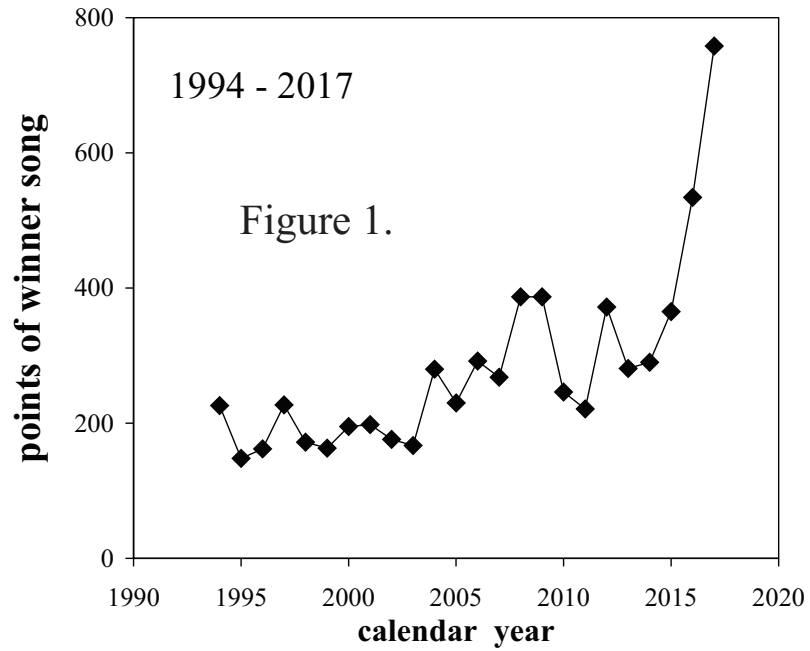


Figure 5.

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- [1] G.Dragan, Eurovision song contest. I. Basic social aspects, GDF Databanks Bull., 17(8) 2013.
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- [3] G.Dragan, Upon some features of global economic structure, GDF Databanks Bull., 21(6) 2017.



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publications	<ul style="list-style-type: none"> <li>● &gt;100 scientific papers</li> <li>● &gt;70 scientific communications</li> <li>● 17 patents</li> <li>● 5 books</li> </ul>
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1997	1	2	Guide of good practice in metrology (Romanian)	AFI
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			practice.(Plenary lecture at the 19 <sup>th</sup> SRH National Congress, 21-22 September 2004, Bucharest, Romania)	
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2005	9	2	A new technique for temperature measurement and calibration. National Society of Measurements (NSM). Important warning for T-calibrator users: MSA has chose metrology well calibrators from Fluke (Hart Scientific).	F
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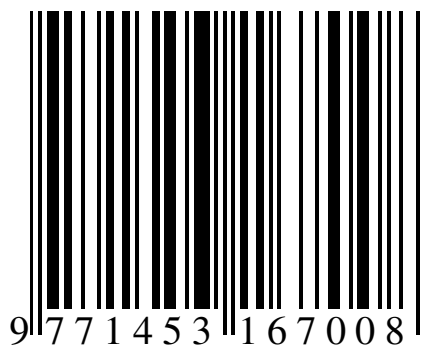
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