

Global Challenges Confronting Humanity in the 21st Century

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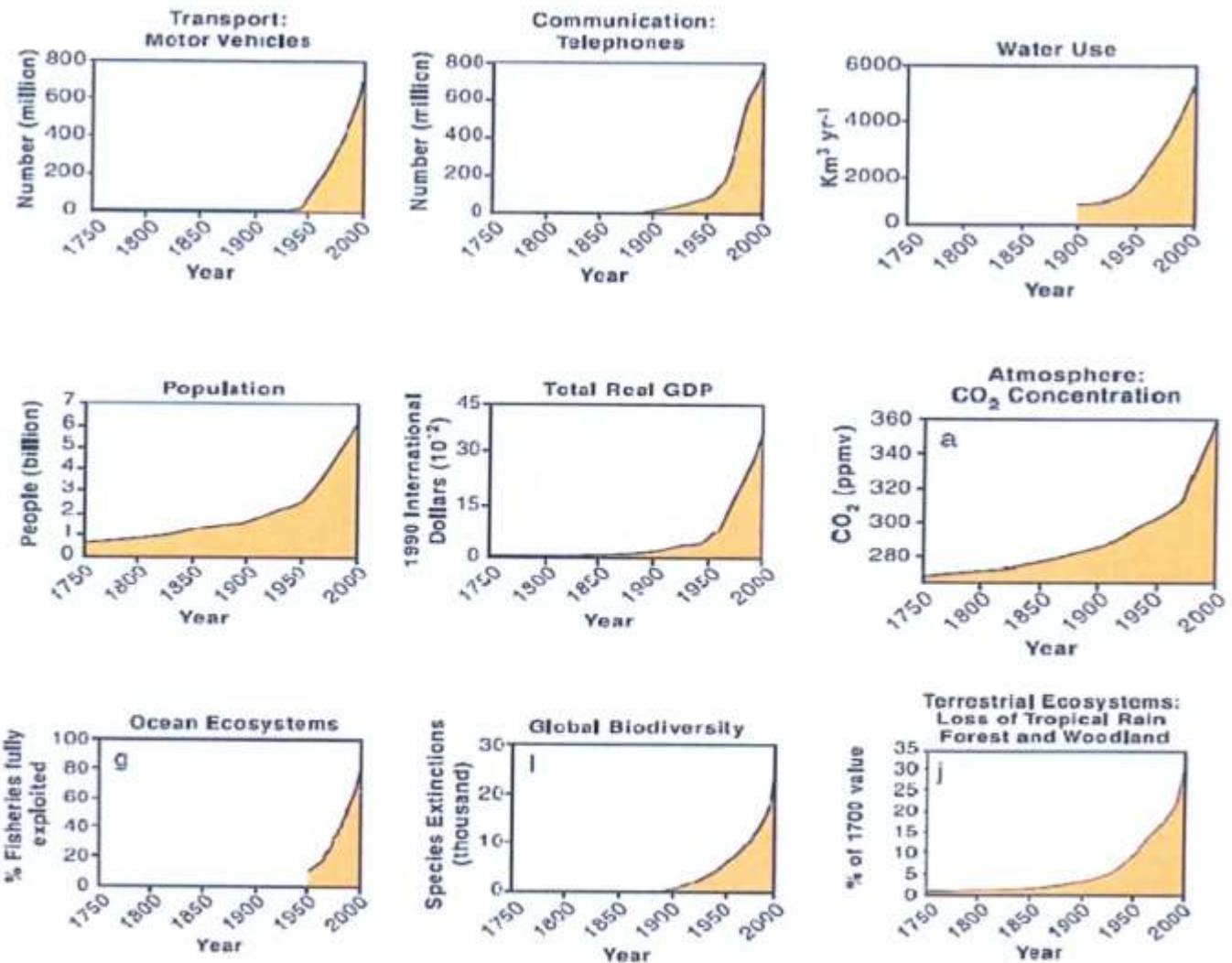


Figure 1: Taken from "Global Change and the Earth System: A Planet Under Pressure" (2004), W. Steffen, A. Sanderson, P.D. Tyson, J. Jäger, P.A. Matson, B. Moore III, F. Oldfield, K. Richardson, H.J. Schellnhuber, B.L. Turner, R.J. Wasson, published by Springer-Verlag Berlin Heidelberg New York.

Transformation of Society and Work

1800

2010

World population 978M

6900 M

Urban 3%

49%

Life Expectancy 27 y

69 y

World trade 3% WGDP

27% WGDP

Agriculture 85%

33.5% global WF

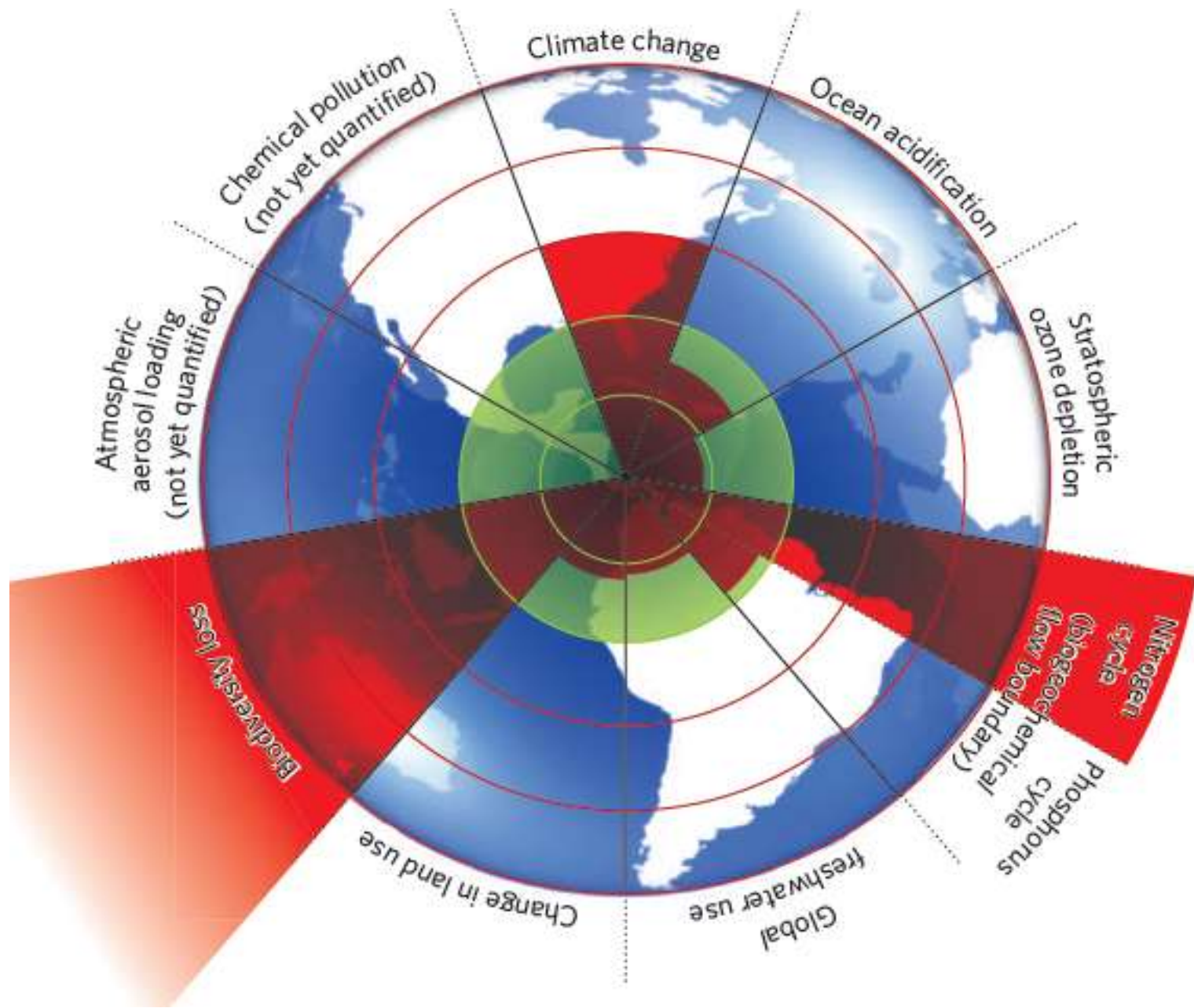
2 % USA WF

1950: 67%

GDP/c 1950: \$ 2000

\$ 6500

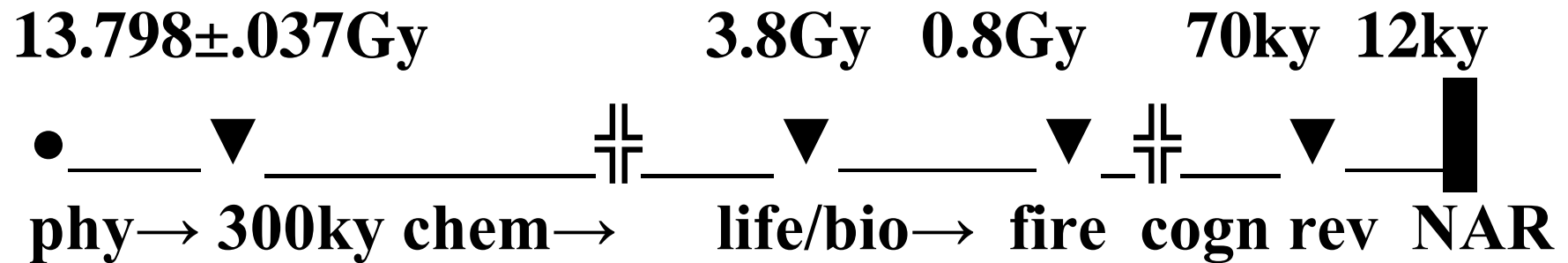
(1990 international dollars)



♠ *Ecological footprint = measure of human demands on environment (Rees, Wackernagel, 1992)*

EF	1970	1992	2007	2050(BAU)
	0.9	1.0	1.5	3.0

♠ *(Bankrupting Nature, A. Wijkman and J. Rockstrom)*



**“God forgives always, humans sometimes
and Nature never.”**

Contemporary world:

☀ *global*

☀ *fast changing*

♣ *interdependent*

♣ *uncertain, black swans)*

♠ **Destruction of natural and human capital**

Employment:

♠ *Low employment*

♠ *Underemployment*

♠ *Miss-, Mal- employment*

♠ *Unemployment*

Inequality

!Essential political task!

!Achievable!

“It was the best of times, it was the worst of times...”(Ch. Dickens, The Tale of Two Cities)

Our Successes during last 100 years

☀ Life Expectancy → x 2

☀ GDP → x 5

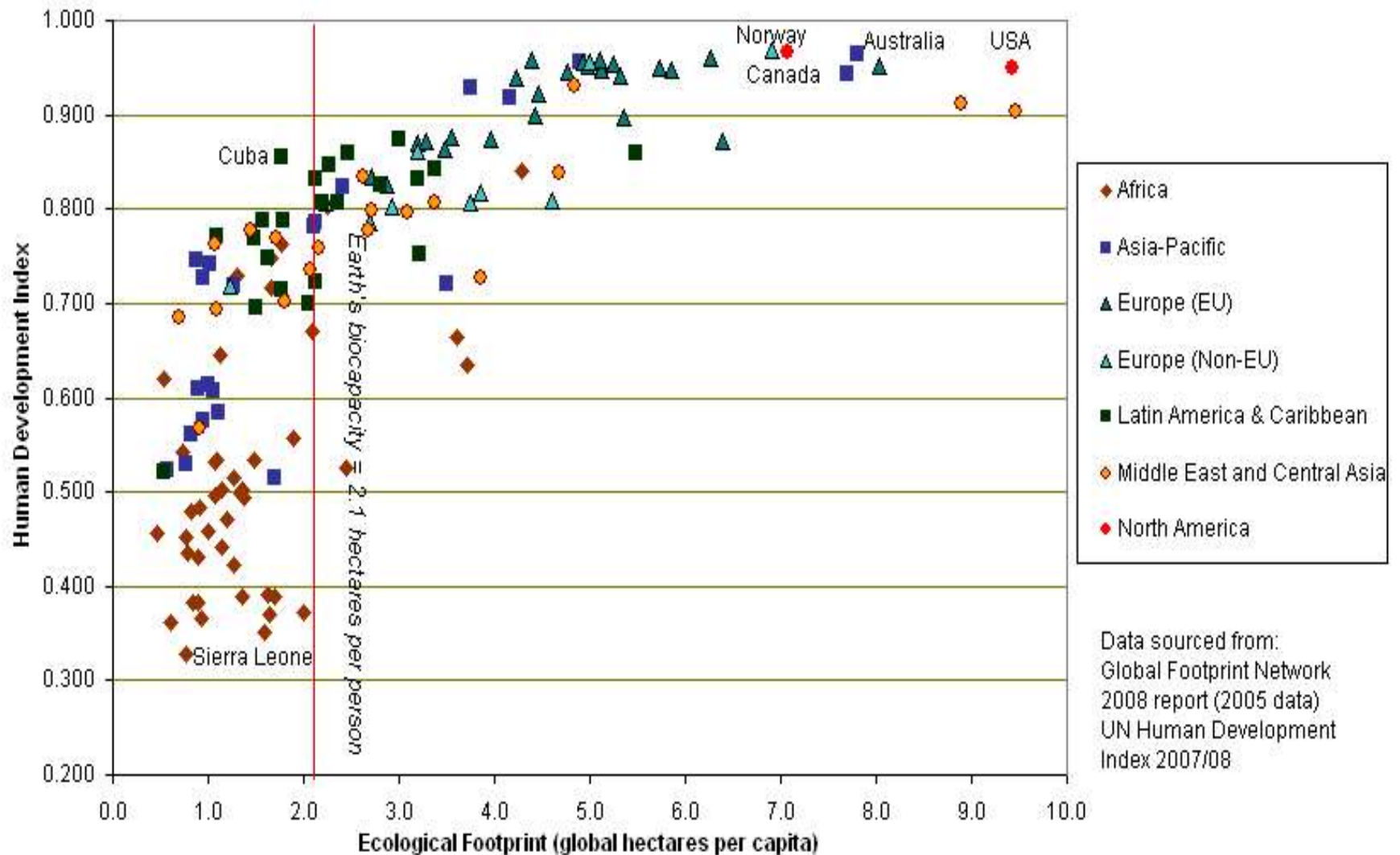
☀ Decolonization, Cold War end, WMDFZ (39% humankind, 115 sovereign states)

☀ More democracy: 1972: 43 states democratic
2002: 89 states (2.5 G person)

☀ Treaties: Montreal (1.1.1989 – ozone. “Most successful treaty”- Kofi Annan),

Ottawa (3.5.1996 - Landmine/not ratified: US, RF, China, India, Pakistan)

Human Welfare and Ecological Footprints compared



Natur(20c)	=	(10M)
Spanish flue	===	(60M)
WWI	=	(17M)
WWII	===	(60M)
Kor/Viet	=	(5.5M)

Democide(20c)	= $\frac{11}{11}$ ===	(262M)
Worldwide Poverty (1990-2013)	= $\frac{11}{11}$ === $\frac{11}{11}$ =	(432m)

WWP >> Democide (x2) >> wars (x3)



APPENDIX A: Russia – NATO Close Encounters – Baltic and North Sea



High risk incidents are shown in Red

Serious incidents are shown in Yellow

Near-routine incidents are shown in Blue

Miscellaneous incidents are shown in Green

This map details the geographical spread and threat level of incidents involving the Russian military and the forces of NATO and its partner states in the Baltic and North Sea area. An interactive version of [the map can be accessed here](#).

Doomsday clock (Bulletin of Atomic Scientists)

1947 7 min to Midnight

1953 3 - 2 min to Midnight

(USA and USSR test H-bombs)

1989 17 min – end Cold War

January 14, 2014 5 min

(destruction of natural, human and social capitals)

January 22, 2015 3 min

(? As bad as 1953 + Ukraine, ISIL)

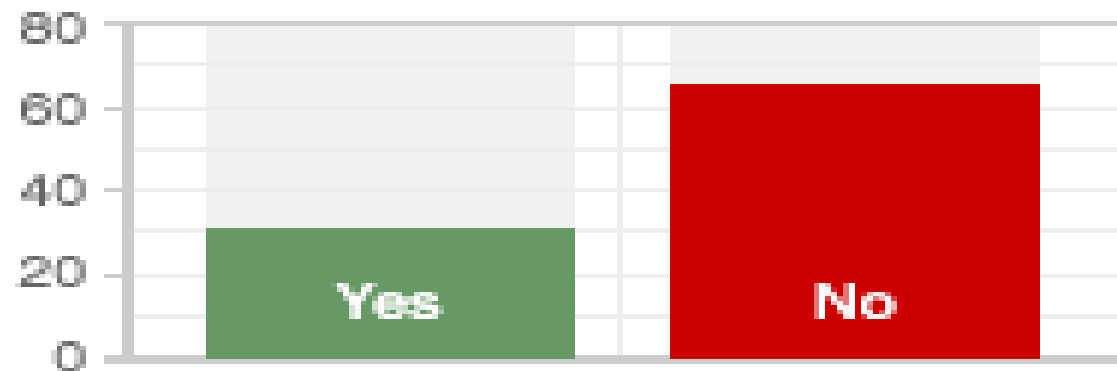
[Sep 26, 1983 – the day the world almost died –

Stanislav Petrov:

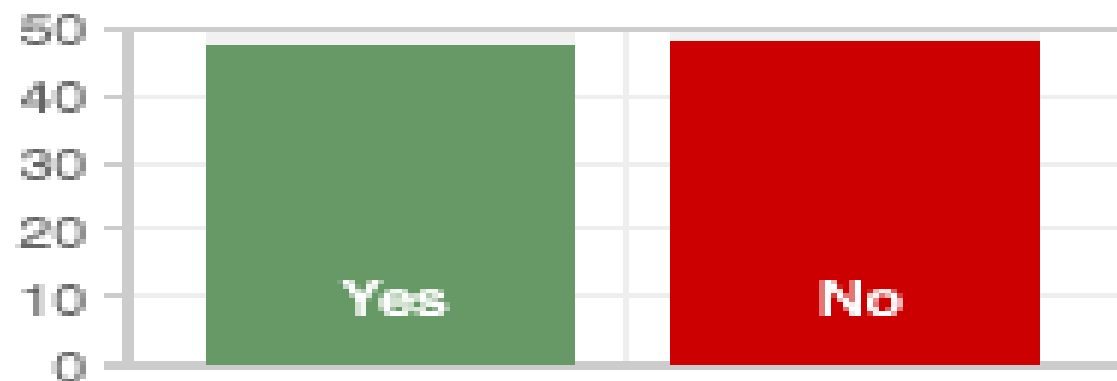
flying time ICBM - US-USSR = 12 min]

GOVERNMENT AND ELECTIONS

Is your country governed by the will of the people? (Global response)



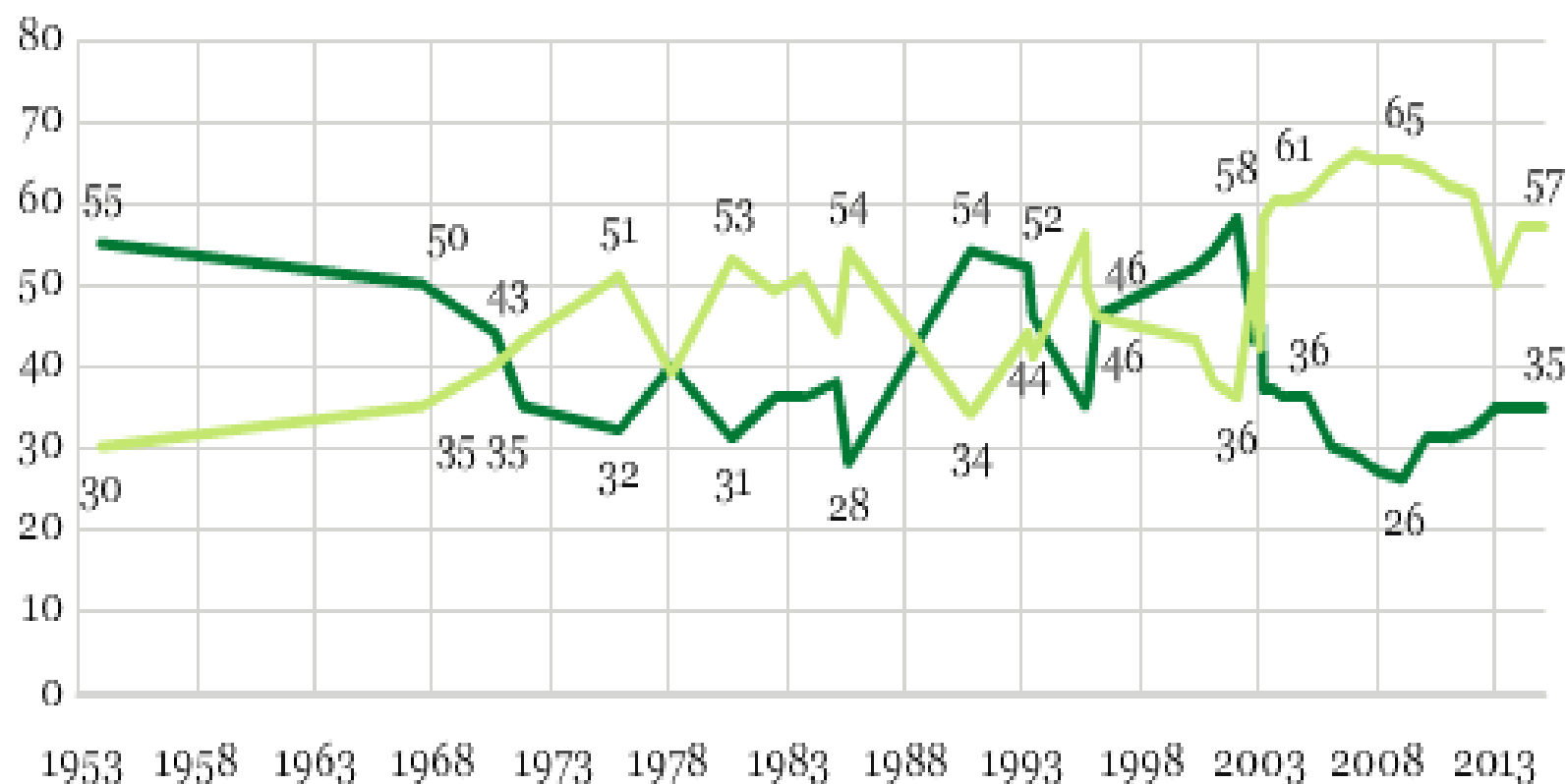
Are your elections free and fair?



SOURCE: BBC/Gallup International

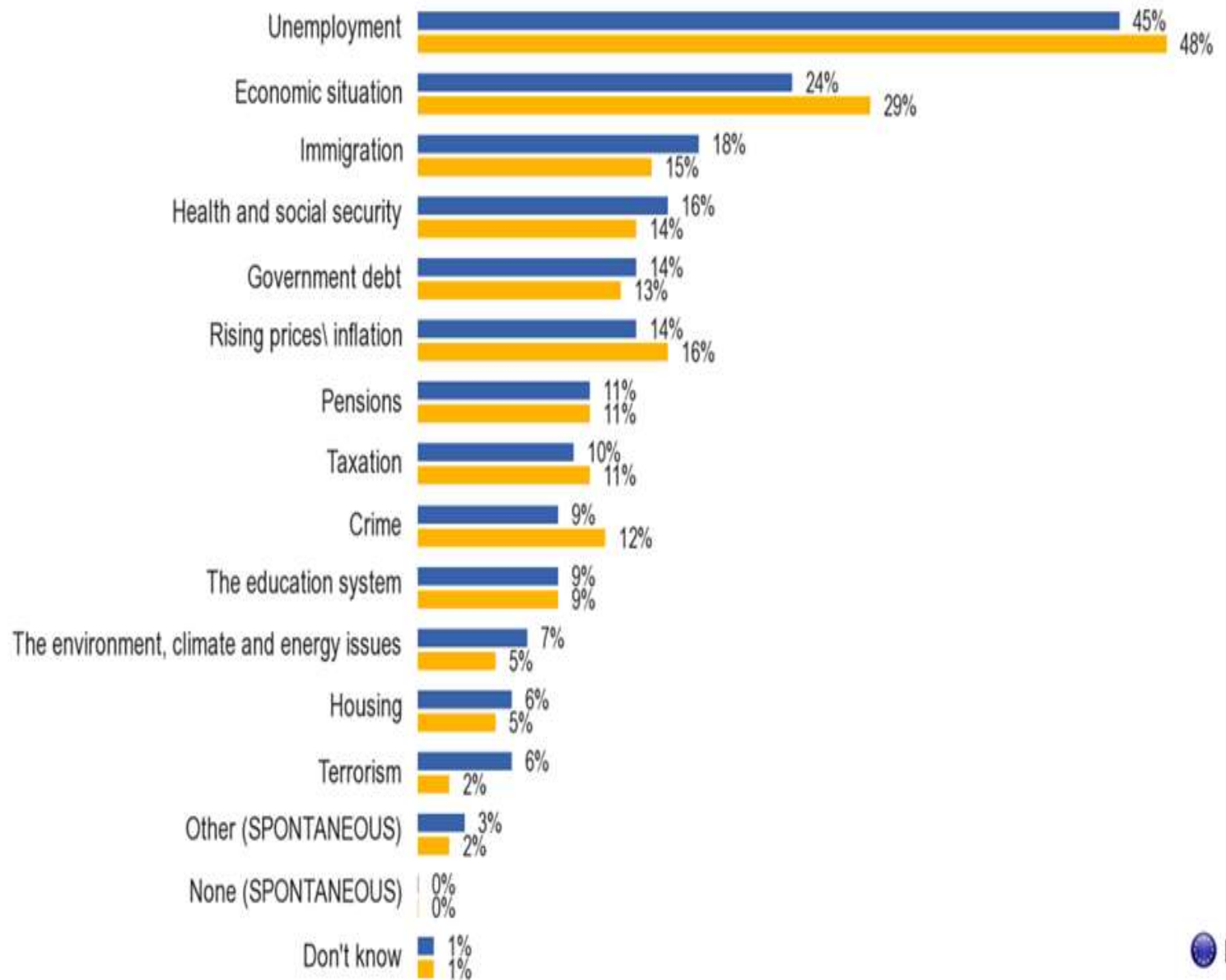
Do you think the United Nations is doing a good job or a poor job in trying to solve the problems it has had to face?

■ % Good job ■ % Poor job



GALLUP®

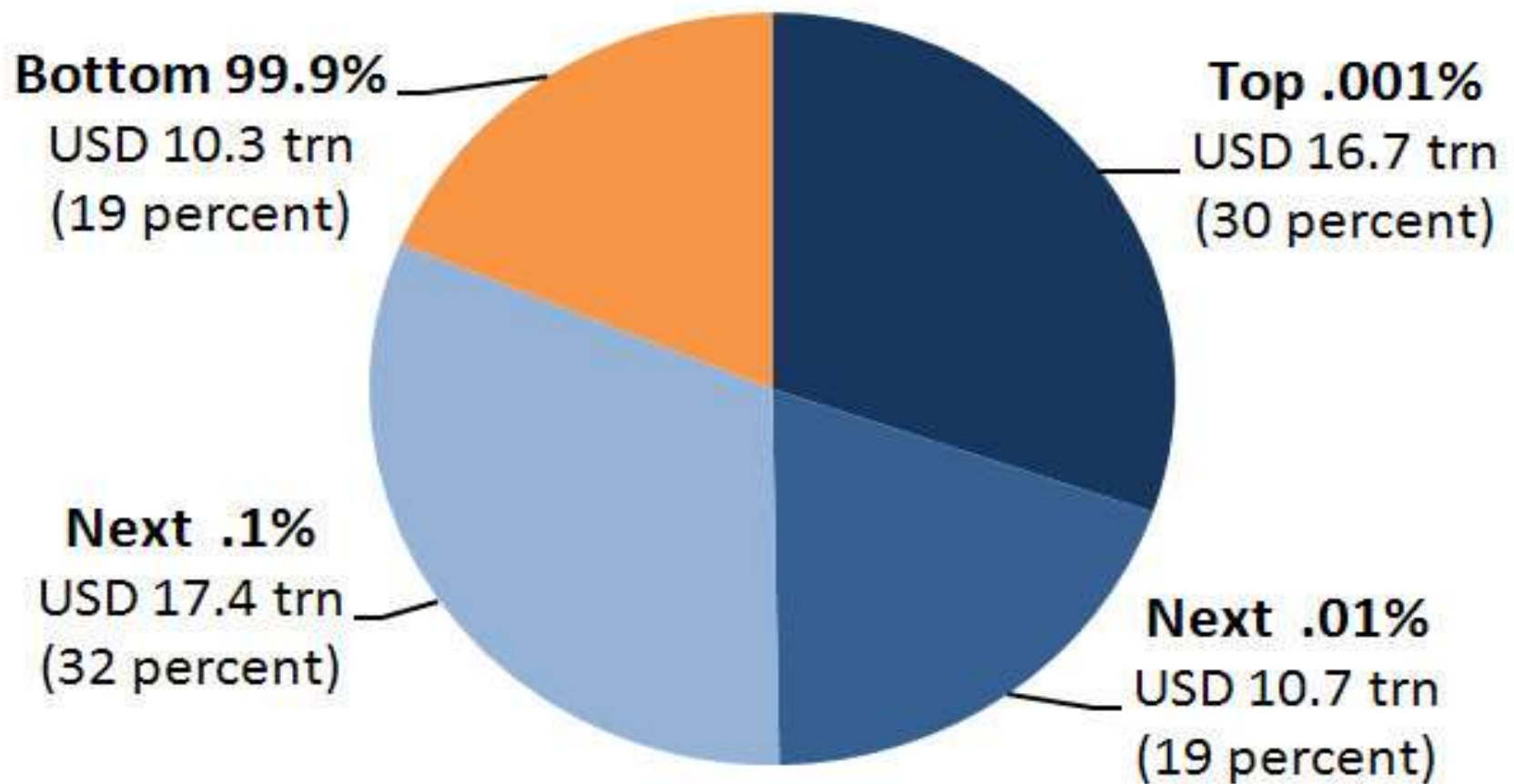
QA3a. What do you think are the two most important issues facing (OUR COUNTRY) at the moment?



■ EB82 Aut.2014

■ EB81 Sp.2014

Global Distribution of Wealth



James S. Henry, 2012

High

Income Inequality

Low

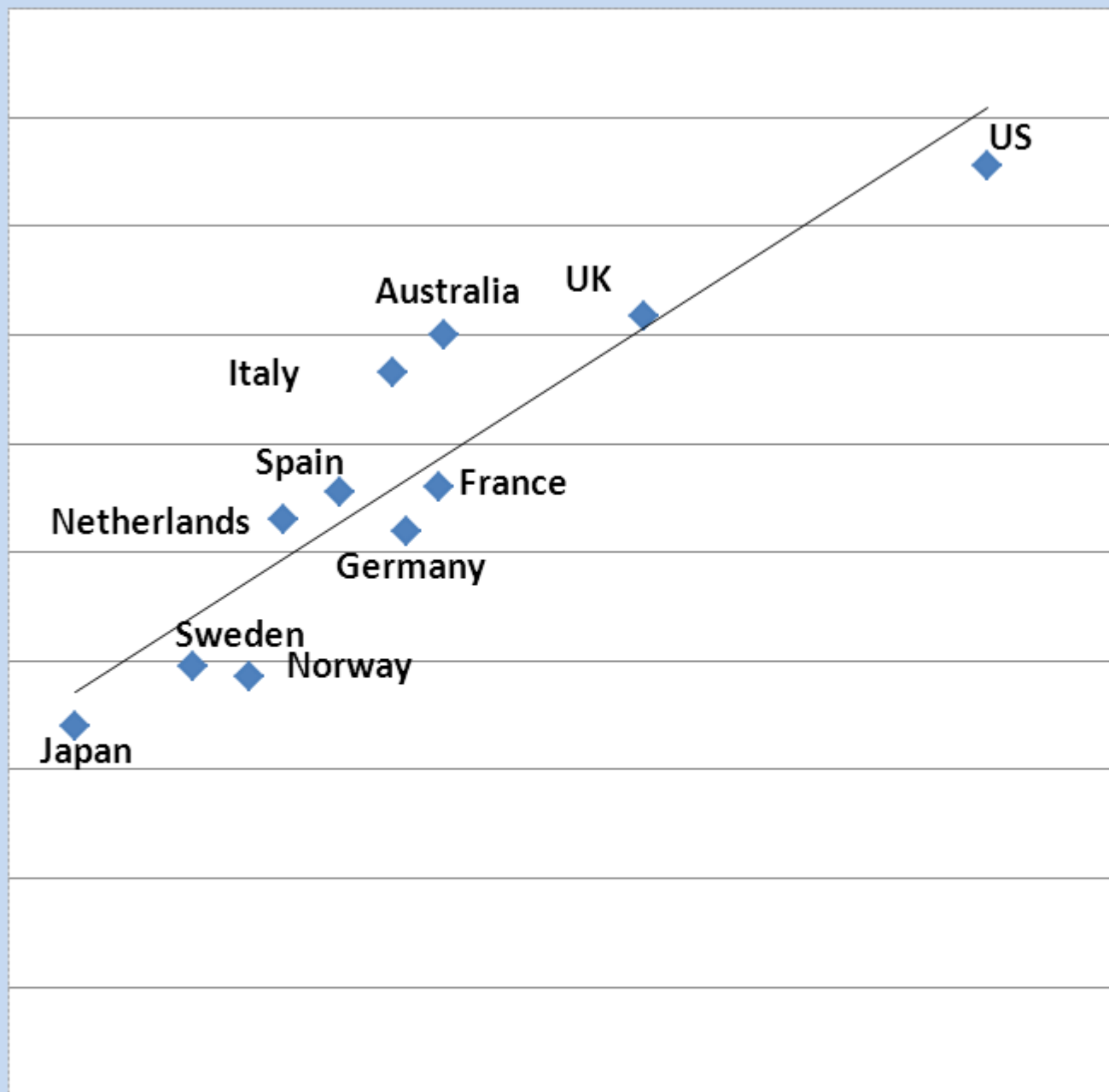
Better

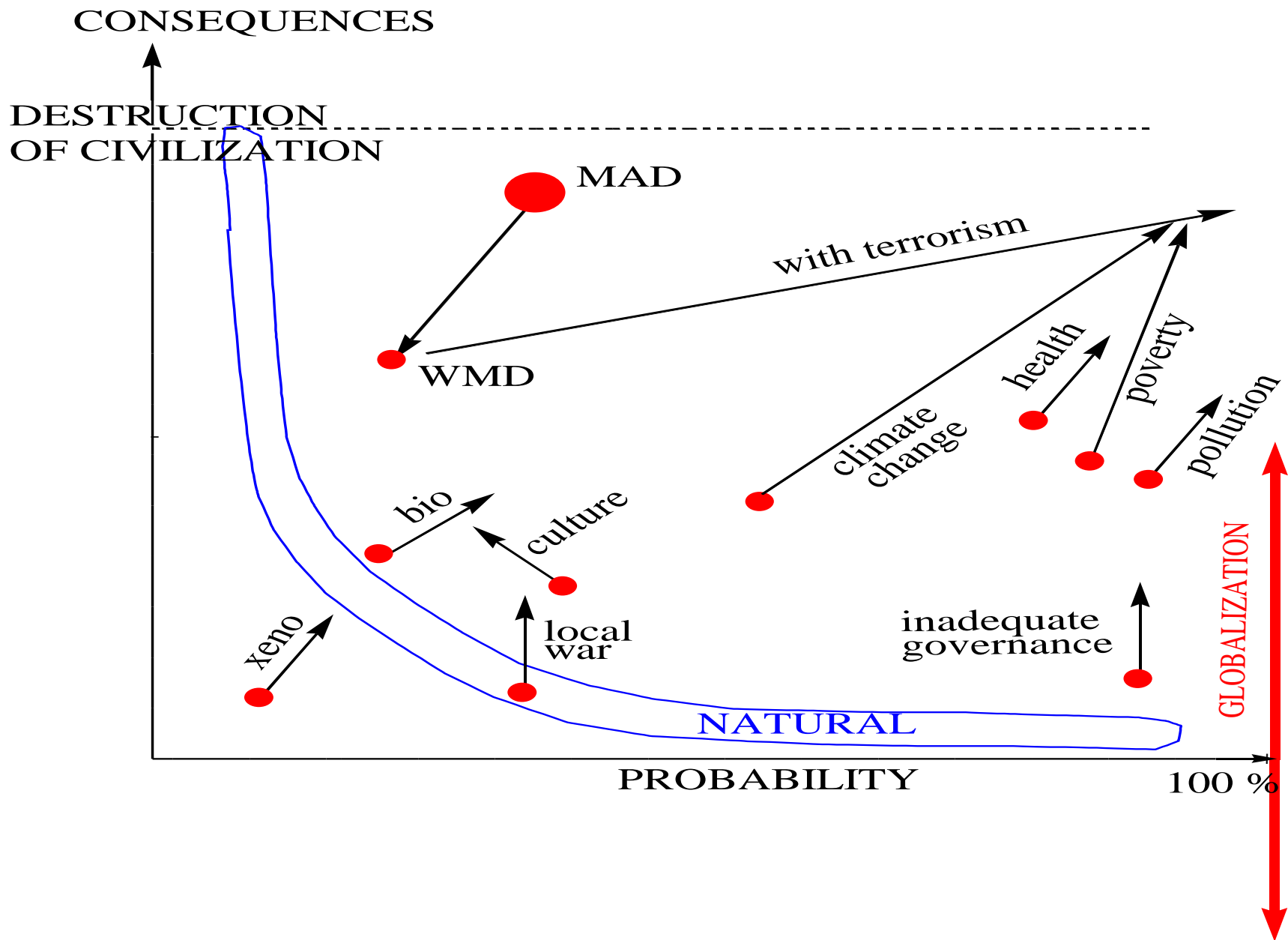
Index of health and social problems

Worse

Health & Social Problem
Index:

- * Homicides
- * Imprisonment
- * Infant Mortality
- * Life Expectancy
- * Math and Literacy
- * Obesity
- * Social Mobility
- * Teenage births
- * Trust





The balance-sheet of wealth

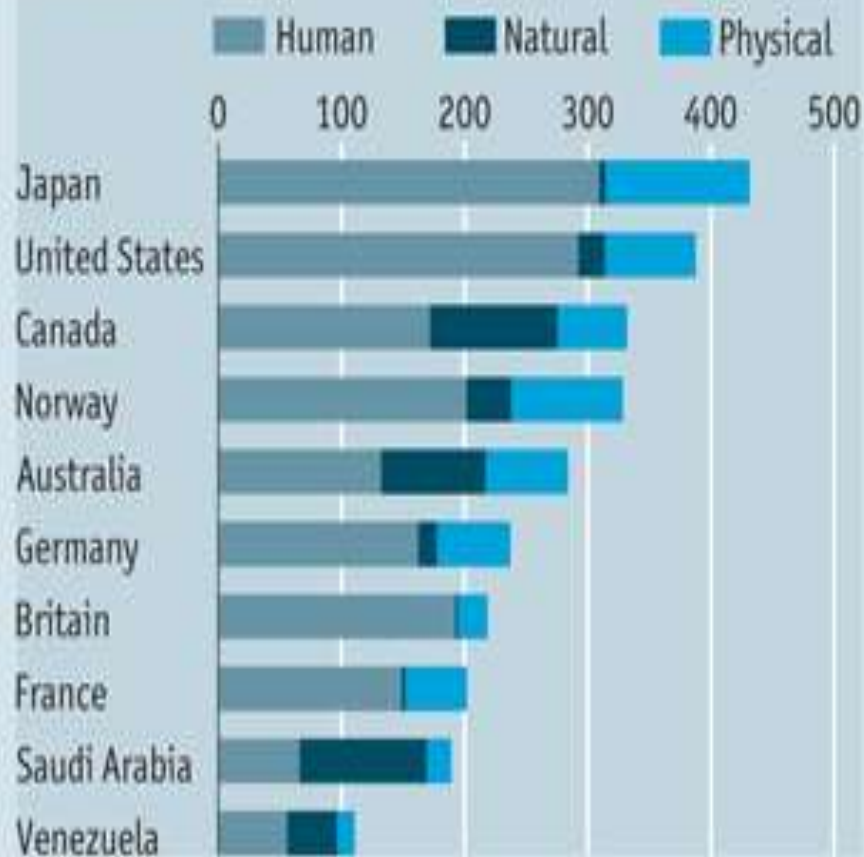
Inclusive wealth

Country	2008, \$trn*	1990-2008 growth†, %
United States	117.8	0.7
Japan	55.1	0.9
China	20.0	2.1
Germany	19.5	1.8
Britain	13.4	0.9
France	13.0	1.4
Canada	11.1	0.4
Brazil	7.4	0.9
India	6.2	0.9
Australia	6.1	0.1

Source: UN

Inclusive wealth per person

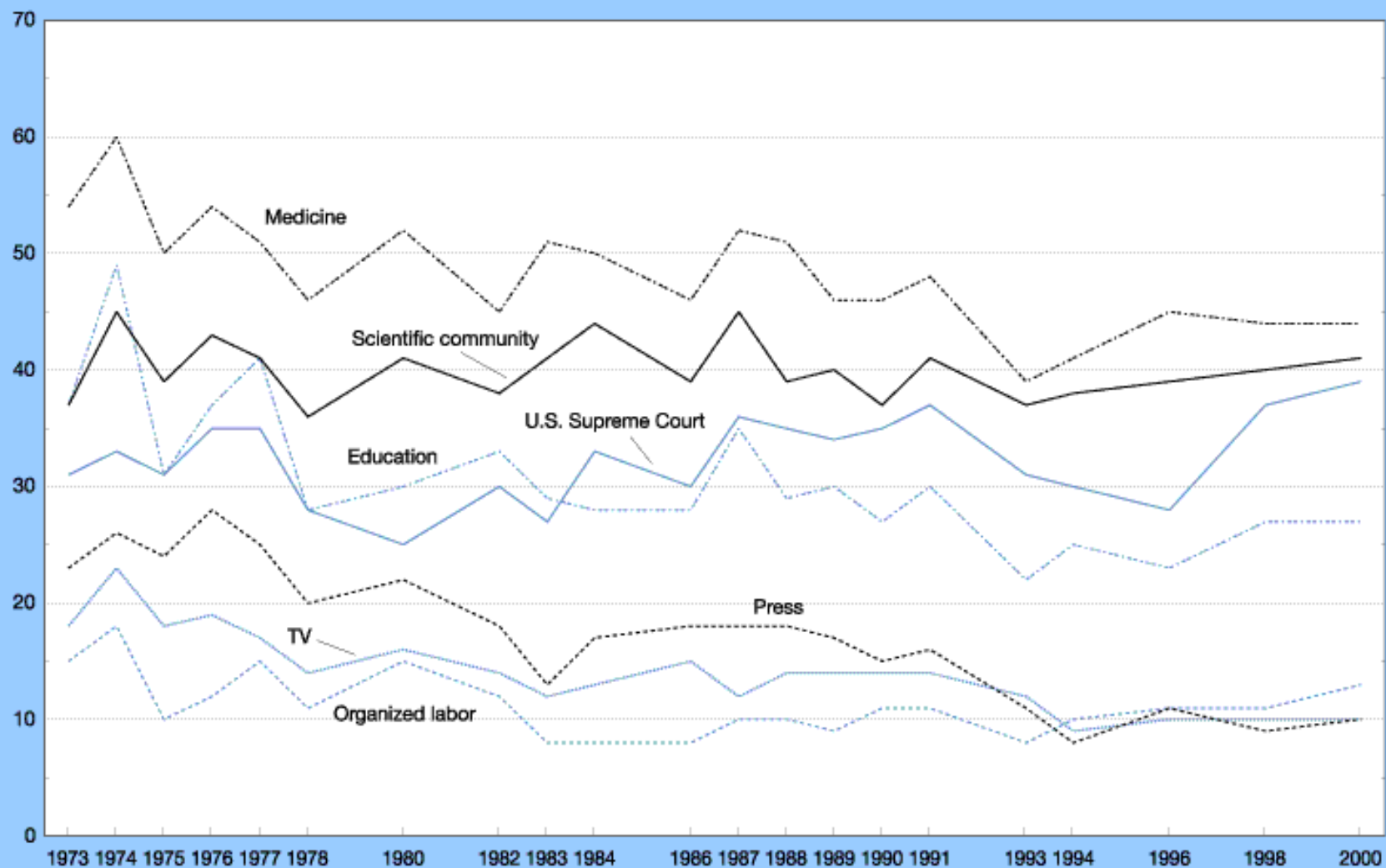
2008, \$'000*



*Constant 2000 \$ †Average annual rate

Figure 7-14.
Public confidence in leadership of selected institutions: 1973–2000

Percent expressing great deal of confidence



See appendix tables 7-31.

Science & Engineering Indicators – 2002

☀️ “People are the real wealth of nations. The basic aim of development is to enlarge human freedom and choices so that people live full and creative lives. This must benefit everybody equitably.”

The State of Human Development, Human development indicators, 2004, p.127, UNDP

☀️ We add: people - healthy, educated, active and happy, living in a society of social justice and social cohesion in a healthy environment assuring sustainable development.

♥️ Achievable: “Enough for human needs, but not for human greed.” (M. Gandhi)

“Our century has given birth to a great epoch, but the great moment finds a stunned generation and even more stunned politicians”. F. Schiller, The Present Moment 1796

“It is absurd to believe that everything is going to change, but politics will and can remain the same.”

(Y. Dror, Avant-garde politician, 2014)

Quality of life and ability to cope with threats and challenges are increased by science. «To the Age of reason we owe our prosperity, .. but also emancipation of slaves and women, the view that we are all at root the same.» (Lee Smolin, New Scientist, July 2008).

1970-now: over 70% of the public considers scientific research to be beneficial,

less than 15% considers it to be harmful.

Public trusts scientists and physicians more than most other professions: 40% of business leaders and 61% of political leaders considered dishonest.

Nevertheless, there is rampant pseudoscience, fundamentalism and superstition.

New Scientist special issue of October 8, 2005:

«After two centuries of the ascendancy, the Enlightenment project is under threat....Religious movements are sweeping the globe preaching unreason, intolerance and dogma, and challenging the idea that rational, secular inquiry is the best way to understand the world.»

Al Gore, Assault on Reason (2007)

Knowledge-based society is the best approach to assure and maintain sustainable global society.

- Th. Kuhn, The Structure of Scientific Revolutions
- (1962) “*universally accepted scientific achievements, that – for a time – provide model problems and solutions for a community of practitioners.*”
- ☼ *worldview*
- ☼ *pattern of activity*
- *Παραδειγμα* - Plato, Timaeus:
- *Pattern used by God to create the universe*

☀️ “Information is not knowledge, Knowledge is not wisdom, Wisdom is not truth, Truth is not Beauty.”

F. Zappa (vs. J. Keats “Ode on a Grecian Urn”)

☀️ ***Win-win strategy:***

Reciprocal altruism – evolutionary stable strategy - tit for tat
(John Maynard Smith: win-win games)

“Best place to store food is in another person belly”- Eskimo

“It is ours what we give to others” St. Bernard of Clairvaux

♥️ **Golden Rule**

♥️ **In our own selfish interest we have to get involved in the betterment of global conditions. We need to emphasize cooperation, networking and solidarity, increasing human options and freedom.**