Not Even Wrong:
The Problem with Dr Illarionov's Projections

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For commentary see Notes Pages

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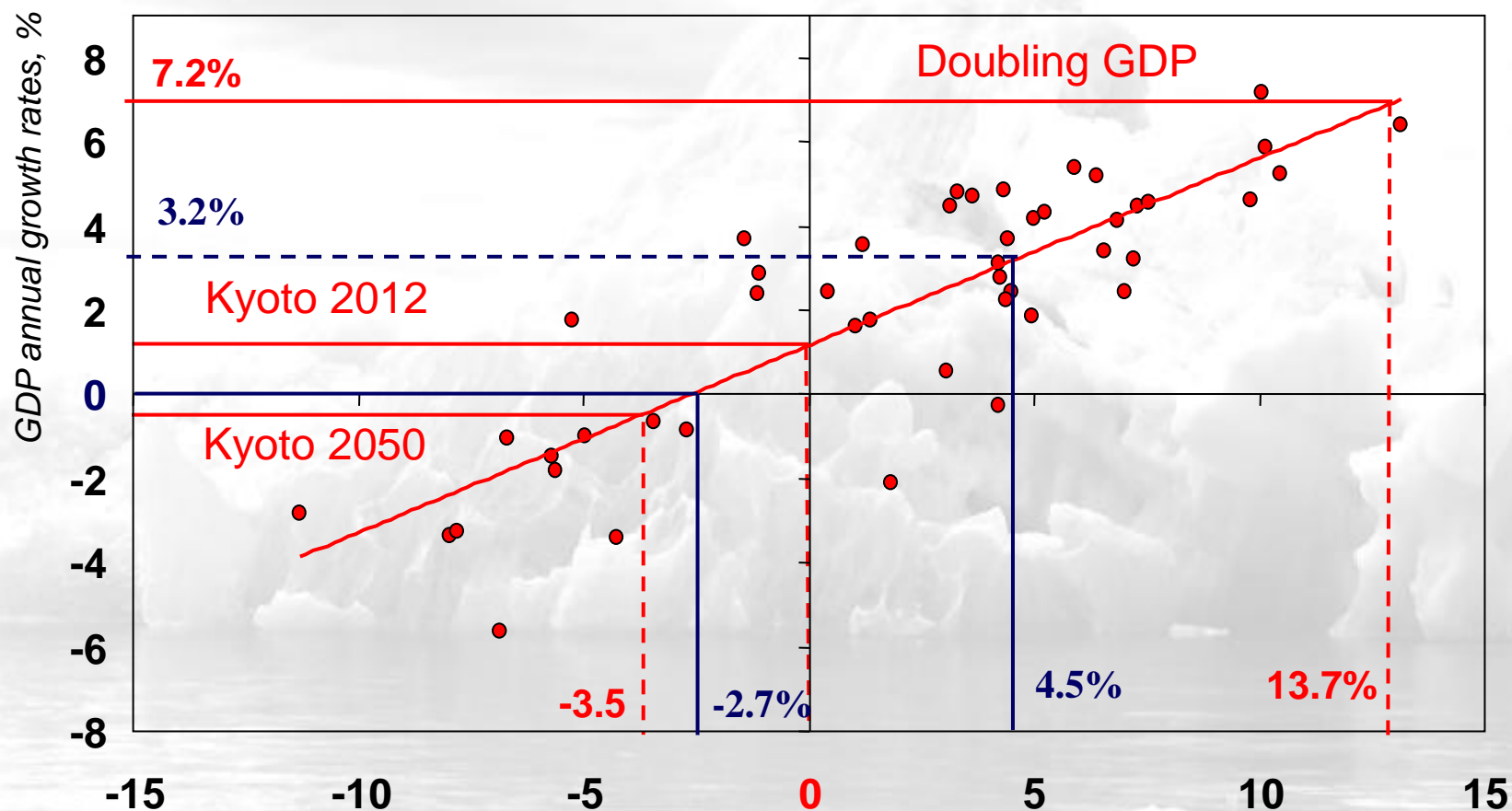
Illarionov Makes His Case On Kyoto

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Illarionov argued that *GDP growth and carbon dioxide emissions are fundamentally linked*, and that Moscow's targeted economic expansion will soon put Russia above the greenhouse emission limits set by Kyoto.

"In those countries we analyzed, *each percent of GDP growth is accompanied by an increase of carbon dioxide emissions by 2 percent*," he said.

The Kyoto Protocol incompatible with economic growth. CO2 emissions are associated with economic growth in the mid-income countries (47 countries),1960-2000

Trend Line: $y = 0.44\,x + 1.17$ $R^2 = 0.71$
Trend Elasticity = $1 : 0.44 = 2.3$ ('2.3% CO_2 growth per 1% GDP growth')

GDP annual growth rates, %

8 — 7.2%
3.2%
Doubling GDP
Kyoto 2012
Kyoto 2050
-3.5   -2.7%   4.5%   13.7%

-15   -10   -5   0   5   10   15

CO2 emissions annual growth rates, %

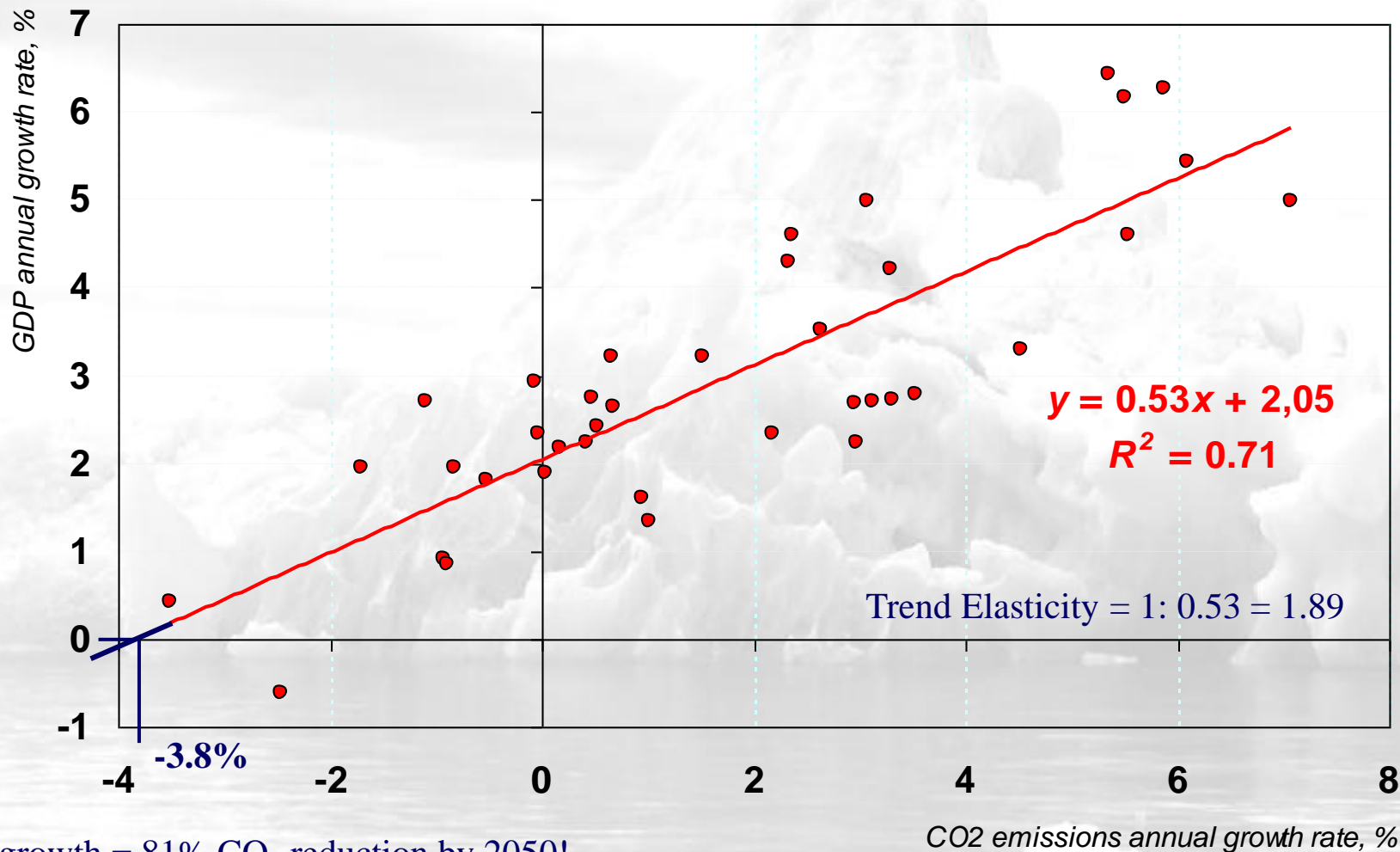**Zero GDP growth = 72% CO₂ reduction by 2050!**

Methodological Requirements

There are two fundamental methodological requirements which need to be satisfied in order to apply the sort of 'Trend Elasticity' projection method used by Dr Illarionov:
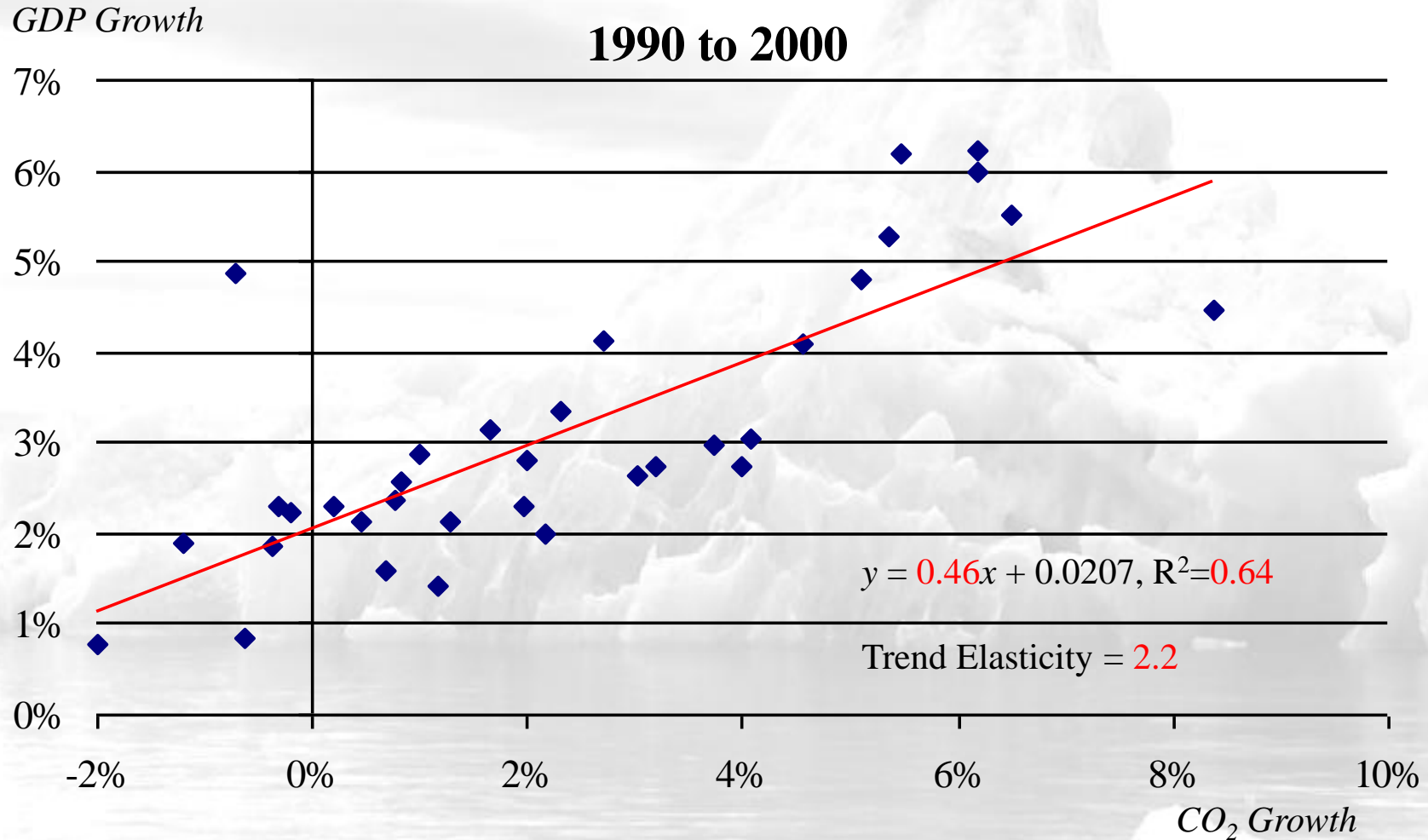
I. There has to be a justifiable expectation that the correlation (the 'trend') continues to exist during the projection horizon.

II. There has to be a justifiable expectation of how the correlation will evolve during the projection horizon.

The Kyoto Protocol is incompatible with wealth accumulation.
CO_2 emission are associated with economic growth in developed economies, too (38 countries), 1991-2000

GDP annual growth rate, %

$y = 0.53x + 2,05$
$R^2 = 0.71$

Trend Elasticity = 1: 0.53 = 1.89

-3.8%

CO2 emissions annual growth rate, %

Zero GDP growth = 81% CO_2 reduction by 2050!

Red components based on: A. Illarionov, THE KYOTO PROTOCOL AND RUSSIA: WHAT IS TO BE DONE?
National Press Club, Washington, DC, January 30, 2004, © Institute of Economic Analysis http://www.iea.ru

Dr Illarionov's 'Developed Country' Case Revisited

1990 to 2000

GDP Growth

CO₂ Growth

$y = 0.46x + 0.0207, R^2 = 0.64$
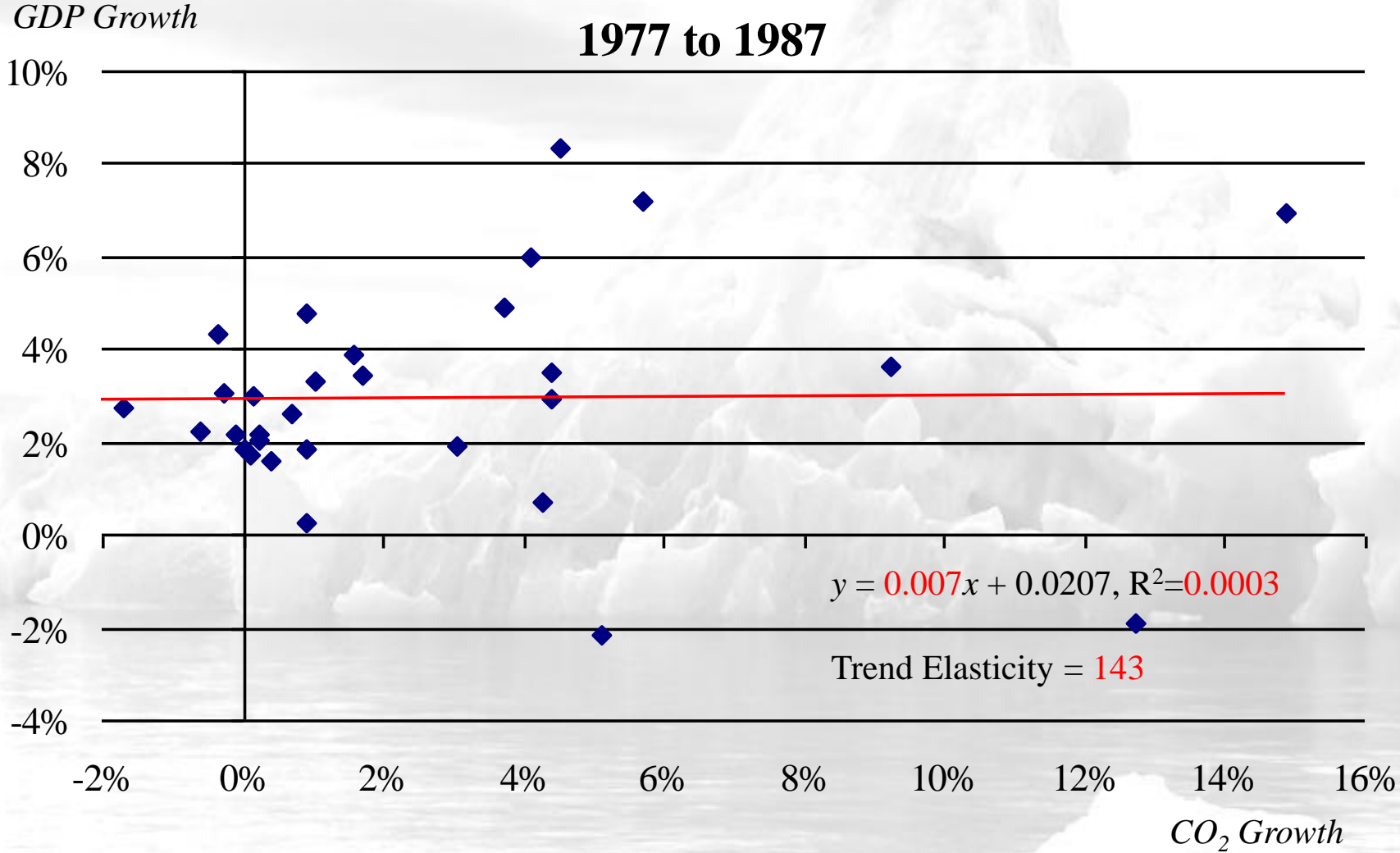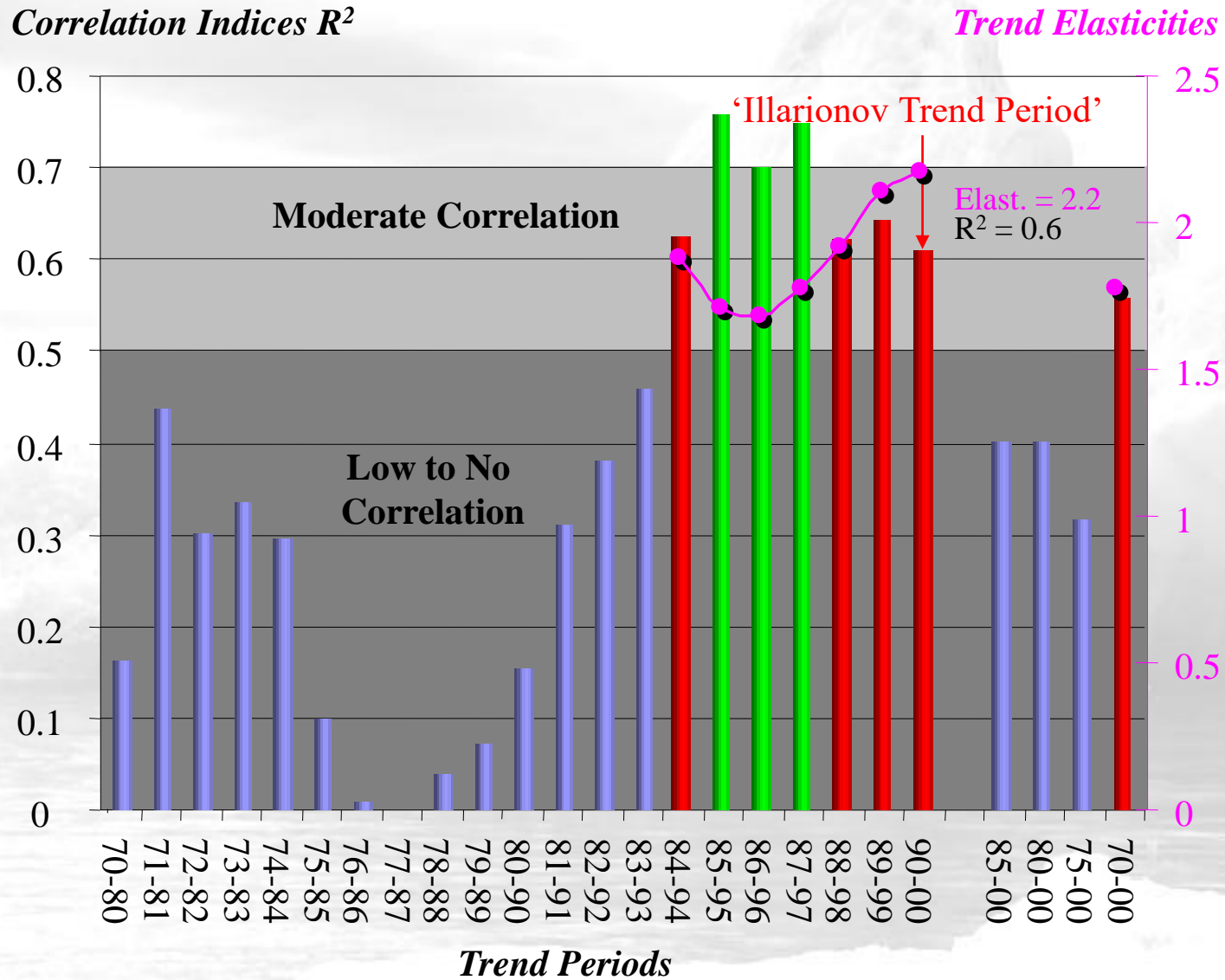
Trend Elasticity = 2.2

Data Sources:
GDP: IMF *The World Economic Outlook* (WEO) Database April 2003; 1970-2000; Local currency, fixed prices
CO₂: CDIAC; Total Emissions (excluding land-use).

Dr Illarionov's 'Developed Country' Case Revisited

GDP Growth

1977 to 1987

$y = 0.007x + 0.0207, R^2 = 0.0003$

Trend Elasticity = 143

CO_2 Growth

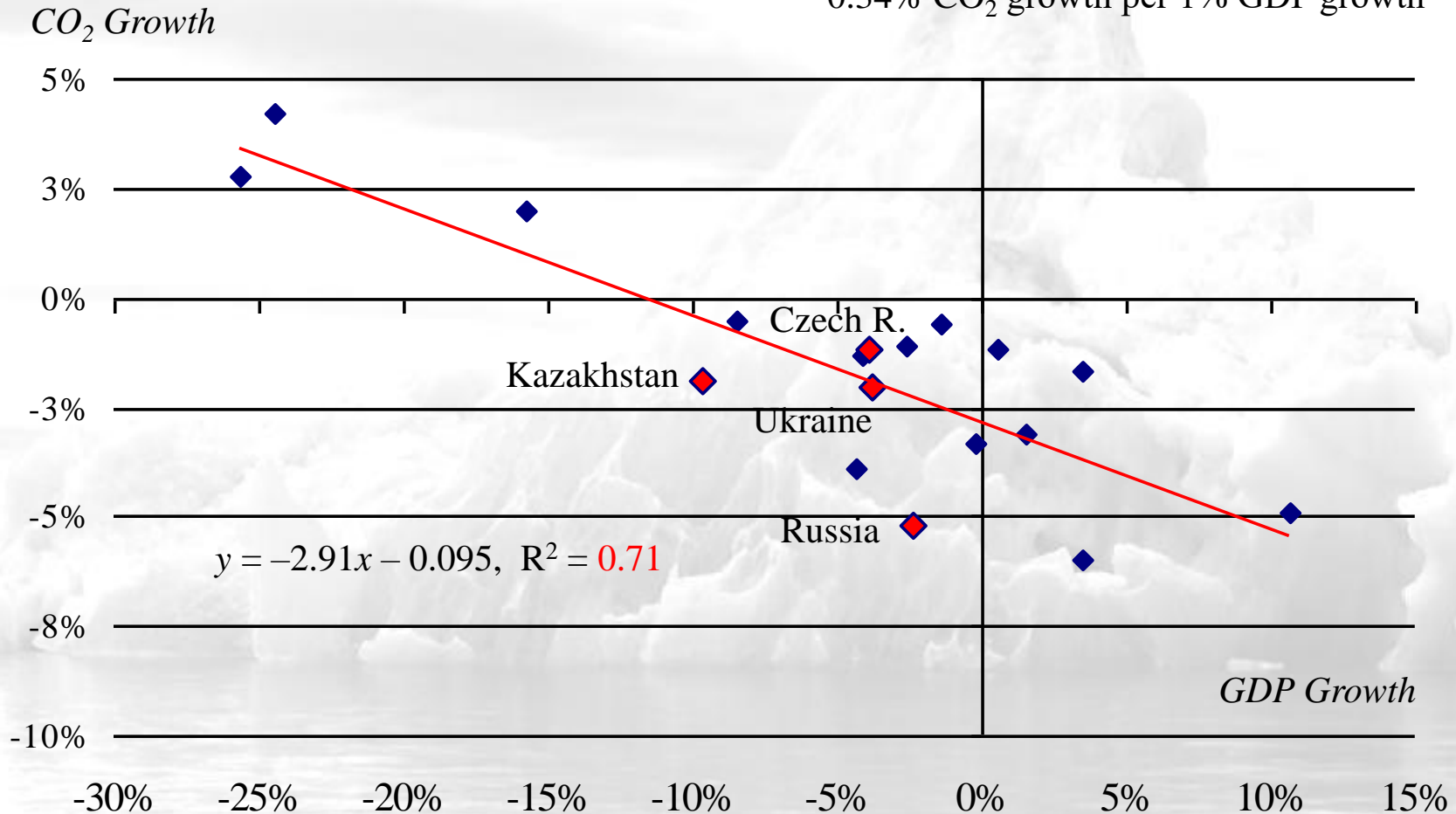# Dr Illarionov's 'Developed Country' Case Revisited

Correlations: Spurious or Not Spurious?

"Green Trend" Countries? (18)

Trend Elasticity: -0.34
'–0.34% CO_2 growth per 1% GDP growth'

CO_2 Growth

Czech R.

Kazakhstan

Ukraine

$y = -2.91x - 0.095, \ R^2 = 0.71$

Russia

GDP Growth

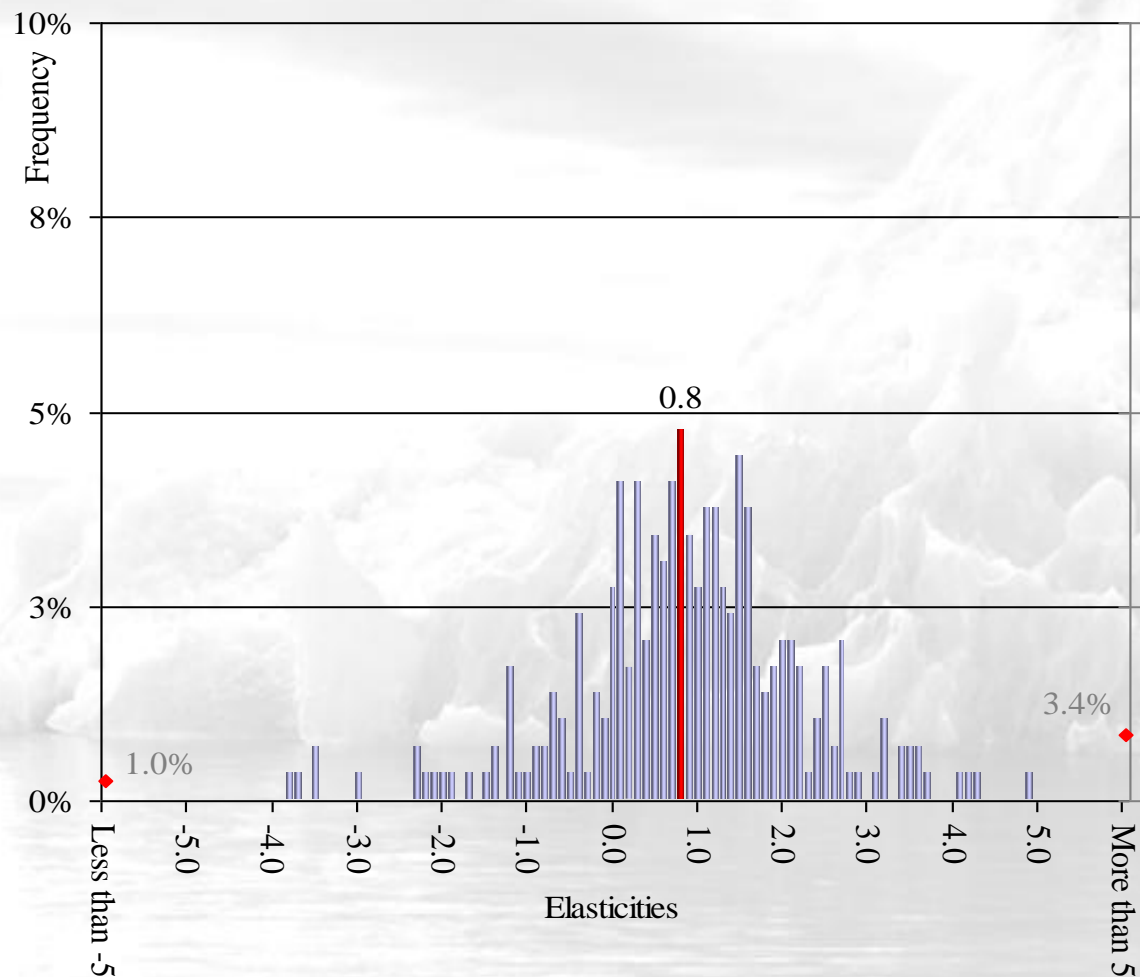7.2% GDP p.a. growth (i.e. doubling of GDP) over 10 years = 45% reduction of emissions

Conclusions

Dr Illarionov's arguments are fundamentally flawed.

(I)   They are based on the unjustified assumption that certain current correlations ('trends') will continue to exist during his chosen 10 to 50 year projection horizons.

(II)   Even if he were justified in this assumption, his second assumption that these correlations are constant over time is not justified.

•   His conclusions and projections based on these arguments must therefore be rejected as ill-founded. They are not a matter of a different but justifiable opinion that may or may not be wrong. They are 'not even wrong' but simply nonsense.

•   The only reliable way to make projections about GDP or emissions (or anything else) is by way of dynamic methods such as used in economic modelling.

A Frequency analysis of the elasticities which have occurred in the context of economic growth between 6% and 8% over the last twenty years reveals that half of them were below 0.8 (the median of the distribution)