



# Motivation

- Change in the configuration of the global political and economic structure is becoming increasingly evident:
  - new economic giants in the East, primarily China and India, as well as the growth of Russia's political role
  - growing social and economic inequality in the majority of developed economies.
- These two factors contest the leadership of the Western institutional model of economic development: this model not only does not have a universal character, but it also does not show as many manifest advantages as has been thought previously.
- Under these conditions, understanding the institutional features of both poles of the returning bipolar world (Western and non-Western) becomes needful.

# OUTLINE

- Some approaches to the study of economic and political systems, generalised in terms of "Western and non-Western institutional models."
- Two models within the framework of the Institutional Matrices Theory (IMT), or X- and Y-theory.
- The influence of geographic factors on the formation of these models.
- The chronology of the coexistence of these two types of models.
- Conclusion.

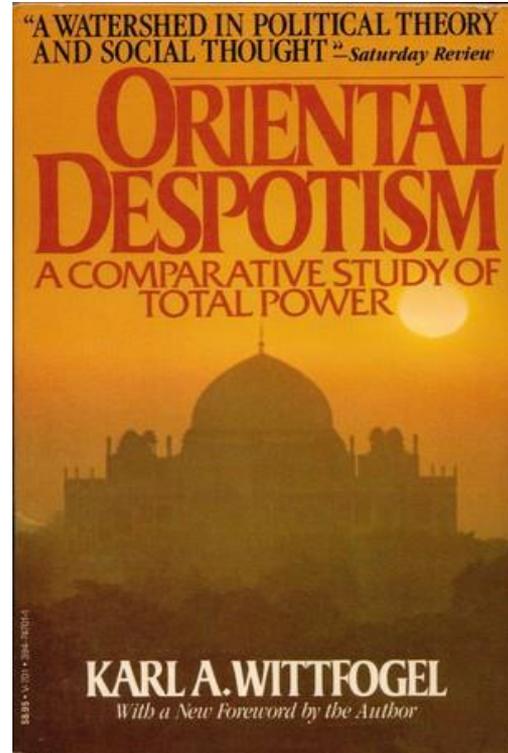
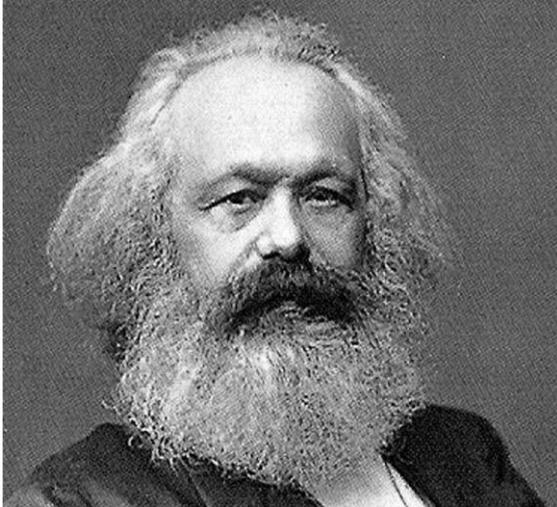
**SOME APPROACHES TO THE STUDY OF TWO TYPES OF ECONOMIC AND POLITICAL SYSTEMS, GENERALISED IN TERMS OF "WESTERN AND NON-WESTERN INSTITUTIONAL MODELS."**

# European versus Asiatic

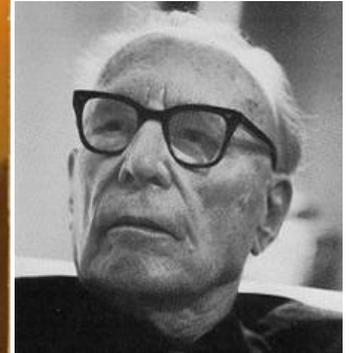
**Karl Marx,**

the New-York Daily Tribune,  
**1853, 10 June**

**“The British Rule in India”.**



**1957**



# European versus Asiatic cont.

**Karl Marx (1818-1883):** the difference of property institutions, characteristic of the "Asiatic mode of production", from the European one. No private property land in the European sense but the so called "connecting unity", or *Zusammenfassende Einheit* in Germ (Marx, 1939, p. 376-377).

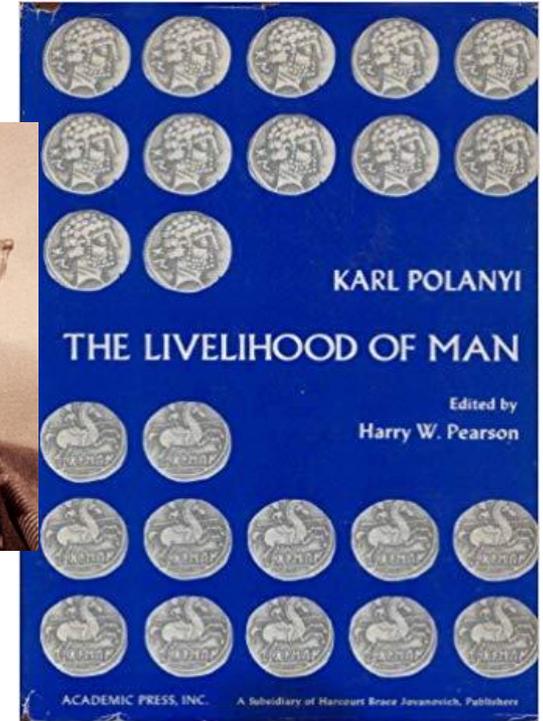
**Karl Wittfogel (1896-1988):** the concept of "hydraulic civilisations". The interrelationships of the economic structures of eastern countries with centralised political structures (Wittfogel, 1959).

# Economic Institutional Orders

1939



1977



# Economic Institutional Orders cont.

**Walter Eucken (1891-1950):** all economies can be understood as varied compositions of two basic principles: **the decentralised co-ordination** of economic activities within a framework of general rules and the principle of *subordination* within **a centralised,** administrative system. The dominance of one of these two models in economic life.

**Karl Polanyi (1886-1964) :** existence of two equivalent, parallel-functioning **market (exchange)** and **redistributive (centralised)** institutional complexes. One form of economic relations dominates, while the other takes a complementary position.

# Political Economy of Socialism

Soviet Political Economy of Socialism

1980



Economics of  
Shortage: v. A  
(Contributions to  
Economic Analysis)

Kornai, Janos

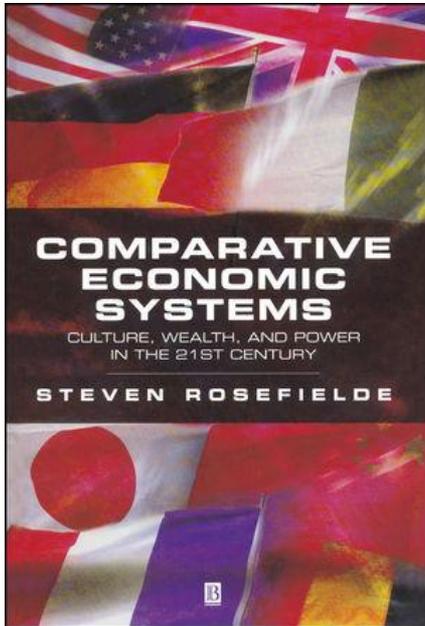
Note: This is not the actual book cover

# Political Economy of Socialism cont.

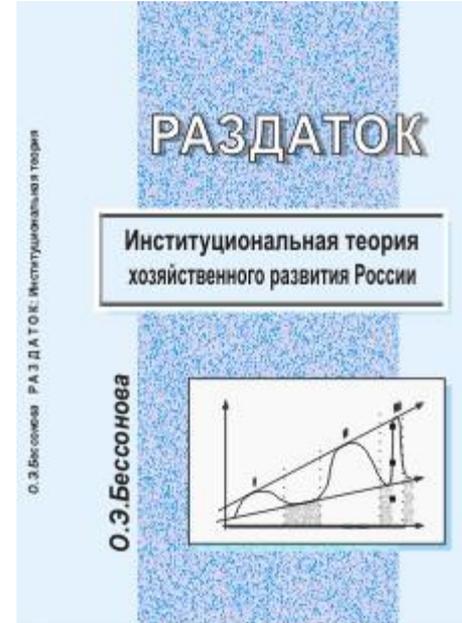
- **The political economy of socialism (~1930-1991):** capitalistic and socialistic societies
- **Janos Kornai (1928- ):** “soft” (under socialism) or “hard” (under capitalism) budget constraints ( *Resource-Constrained versus Demand-Constrained Systems // Econometrica*. July 1979. No 47, 4).

# Modern Concepts beyond Mainstream

**Steven Rosefielde (1942- ):** market *self-regulating* category A economies and *culture-regulated* category B economies



**Bessonova Olga (1958- ):** market and *razdatok*-economies

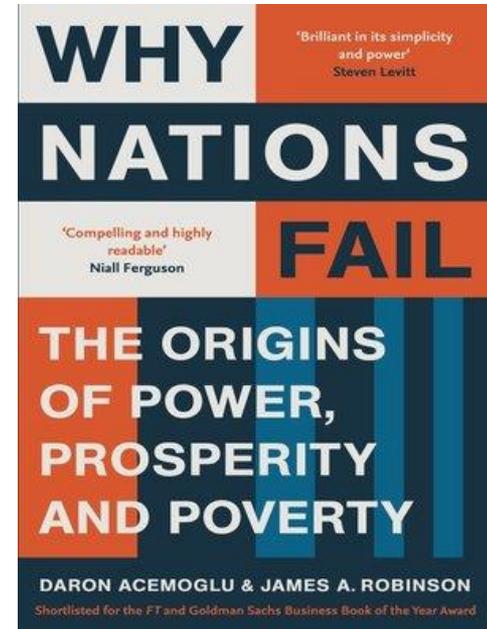
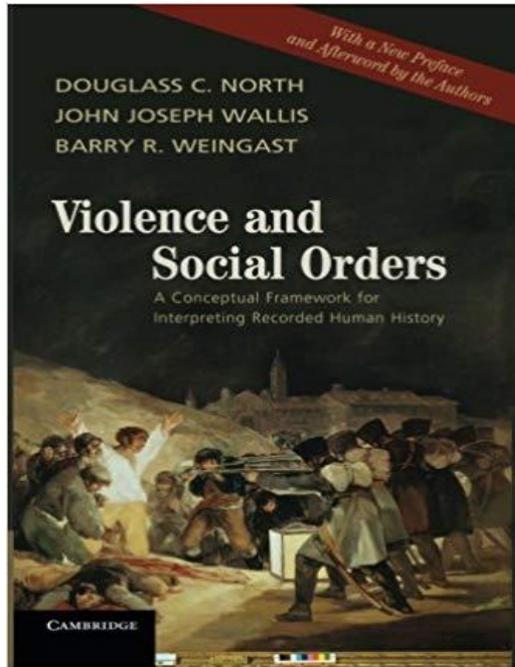


# Common features

- Most of these authors consider two types of economic models as simultaneously existing in different countries.
- When generalising historical facts, they do not make (with the exception, perhaps, of the political economy of socialism) a value judgement and do not rely on ideological ideas.

# Concepts in Economic Mainstream

The theory of open access orders and limited access orders, 2009



The theory of inclusive and extractive institutions, 2012

# Concepts in Economic Mainstream cont.

- These theories are based **on certain ideological guidelines**, which allow authors to consolidate "scientifically established facts" into a single whole (*Polterovich, 2017, p. 57; Arslanov, 2016; Diamond, 2012*).
- The value judgements are shown by the fact that these models – which include open access orders in the theory of North and his colleagues or societies with inclusive institutions as in Acemoglu and Robinson's theory - characterise Western countries, and they are presented in the framework of these theories as **more developed and advanced in an institutional sense**.

**TWO MODELS WITHIN THE FRAMEWORK OF INSTITUTIONAL MATRICES THEORY (IMT), OR X- AND Y-THEORY.**

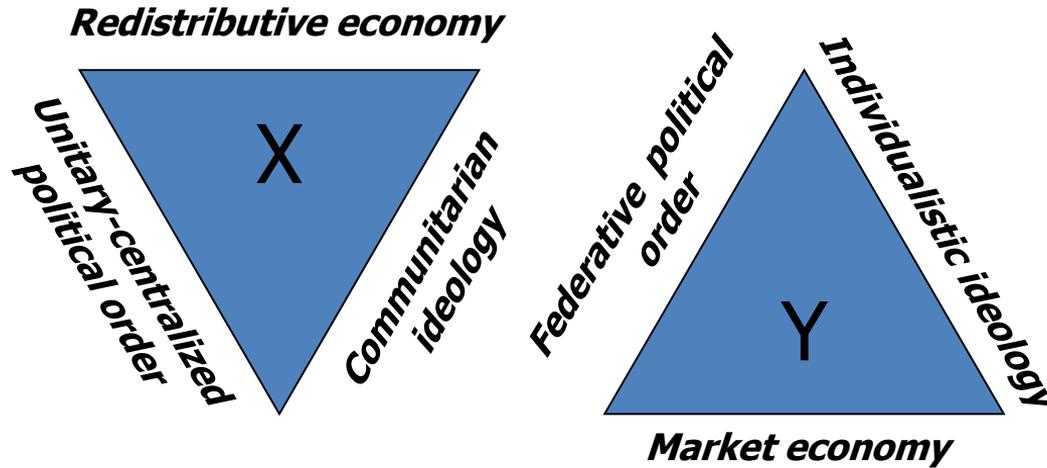
# IMT in Russia and beyond

- The main ideas are presented in many books and articles (see: [www.kirdina.ru](http://www.kirdina.ru) in Russian and English)
- The IMT is included in the “Sociological Encyclopedia”, 2003 and “Sociological Dictionary”, 2010, 2012 (both in Russian).
- The IMT is presented in curricula on Sociology, Economics & Political Science courses offered at main Russian universities (*Russian Internet data*).
- References to the IMT and summary of the main IMT provisions (with a critique ) can be found e.g. in the *Journal of Economic Issues*, 2014-2018.

# Main assumptions of IMT, or X- and Y-theory

- Each sphere (economy, politics and ideology) is regulated or guided by a particular set of basic institutions made in the image of a society.
- Economic, political and ideological institutions represent the “institutional matrix” of societies.
- Two main types of institutional matrices can be identified: the X-matrix and the Y-matrix.

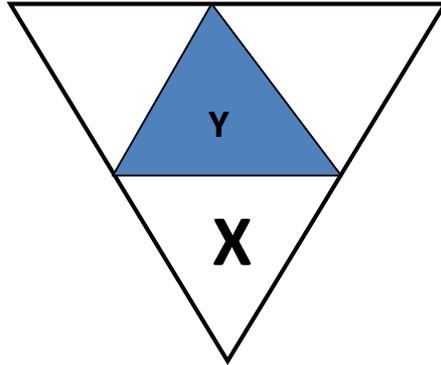
# X- and Y-matrices



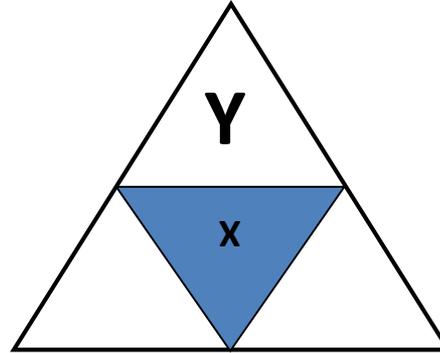
- \* Redistributive economy with the Center mediating the economic transactions
- \* Centralized political order (top-down model)
- \* Communitarian ideology (We over Me)

- \* Market (exchange) economy
- \* Federative political order (bottom-up model)
- \* Individualistic ideology (I over We)

# Combinations of X- and Y-matrices



**Russia, China, India,  
most Asian, Middle Eastern,  
Latin American as well as  
some other countries**



**Europe and Western  
Offshoots: US,  
Canada, Australia,  
and New Zealand**

**THE INFLUENCE OF GEOGRAPHIC FACTORS ON THE FORMATION OF BOTH TYPES OF MODELS.**

# Geography is important?

- The debate about comparative roles of geographical and social (institutional) factors in economic development has been continuing for hundred years.
- The fundamental basis of the debate is consideration of the economic world from the perspective of the interrelationship between nature and society ( *Lorenz A, Hemmer H.-R., Ahlfeld S.* 2005. «The Economic Growth Debate – Geography Versus Institutions: Is There Anything Really New?»)

# Geographical Hypothesis in Institutional Economics - discussion in National Bureau of Economic Research, US, 2000s



**«Institutions Rule: The Primacy of Institutions over Geography and Integration in Economic Development»** (*Rodrik et al., 2002*)



**«Institutions Don't Rule: Direct Effects of Geography on Per Capita Income»** (*Sachs, 2003*)

# Different Results but Similar Methodology

First, national institutions and geographical characteristics are classified as *fundamental deep* ( in the Rodrik's terminology) factors of economic growth.

Second, geography is undoubtedly an exogenous factor both to economic growth and institutions.

Third, geography and institutions are essential to explain long-term trends.

Fourth, a so called reductionist approach was used when only some institutions (not the institutional environment as a whole) were included in the analysis. They did not take into account the phenomenon of *embeddedness* of economic institutions (*Polanyi, 1968; Granovetter, 1985*).



# Methodology of Our Research

- A much wider range of geographic variables (more than 150) was used.
- The characteristics of the institutional environment were represented by the type of institutional matrix (X- or Y) which predominated in the countries investigated (n=65).
- The calculations were not based on linear econometric models with several explanatory variables. We used statistical modeling with data mining procedures and an original method of classification that allowed us to catch the nonlinear character of the relationship between the investigated parameters.
- Data bases used: [www.worldbank.org](http://www.worldbank.org); [www.cia.gov](http://www.cia.gov); [www.gapminder.org](http://www.gapminder.org); <http://faostat3.fao.org>; <http://www.indexmundi.com>; <http://en.wikipedia.org>; <http://unstats.un.org>; <http://www.world-nuclear.org>; <http://www.bp.com>; <http://minerals.usgs.gov>.

# Our Main Results

- Geographic parameters that differ significantly for countries with dominating X or Y matrices were defined:
  - **Air temperatures**
  - **Precipitation average**
  - **Consequences of natural hazards** (droughts, floods, earthquake, extreme temperatures and the like)
- Two groups of so called “relatively hot” and “relatively cold” X-countries, and a third group of Y-countries occupying a “middle position” between the first two groups, were singled out.

# The Revealed Regularity

- In countries with **relatively soft climate characteristics** (optimal air temperatures and precipitation) as well as lower natural hazards, the results showed that so called **Y-matrix institutions historically prevail**.
- In countries **with extreme conditions** where air temperatures are relatively hot or cold, levels of precipitation are relatively high or low, and natural hazards are quite high, the results showed that so called **X-matrix institutions historically predominate**.

**«Relatively cold»  
X-countries**



**Y-countries**



**«Relatively hot »  
X-countries**



**t°C  
aver.**

**6.4**

**9.3**

**23.1**

**t°C  
min**

**1.0**

**4.6**

**17.4**

**«Relatively cCold»  
X-countries**



**Y-countries**



**«Relatively hot»  
X-countries**



**Precipitation  
in year, mm**

**100**

**760**

**1328**

**Amplitude of  
Precipitation  
(max-min),  
mm**

**194**

**52**

**159**

# Population affected by natural hazards, %

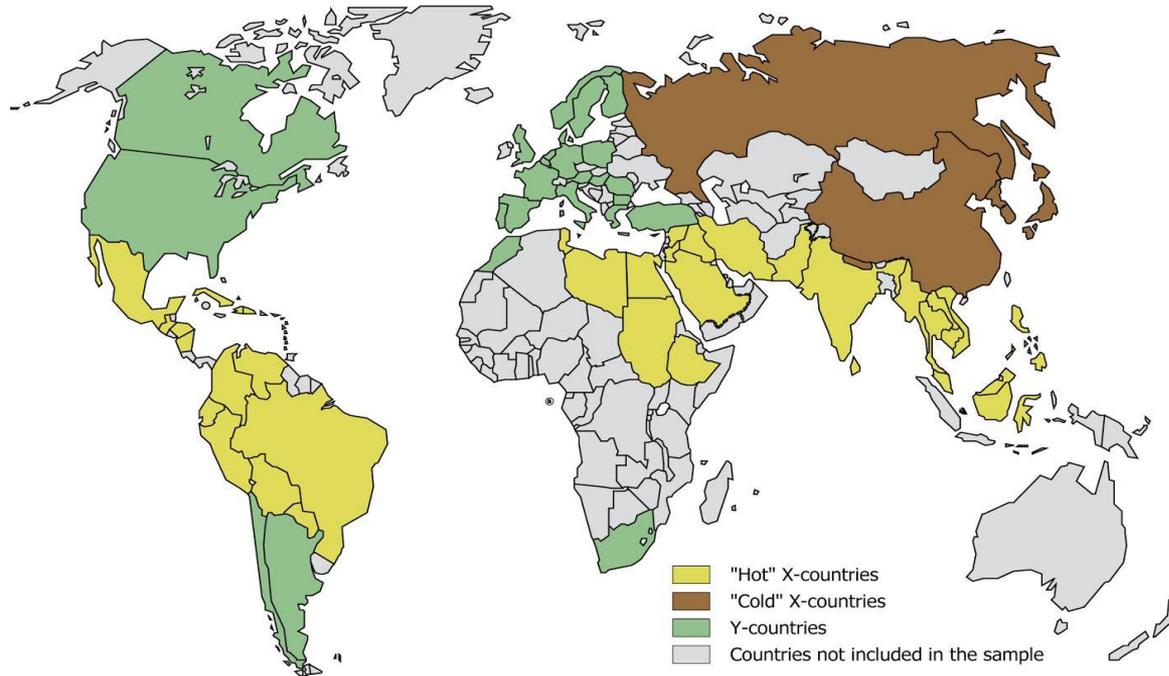
«Relatively cold» X-countries 1.9

Y-countries 0.1

«Relatively hot» X-countries 1.3



# Countries - Mapping



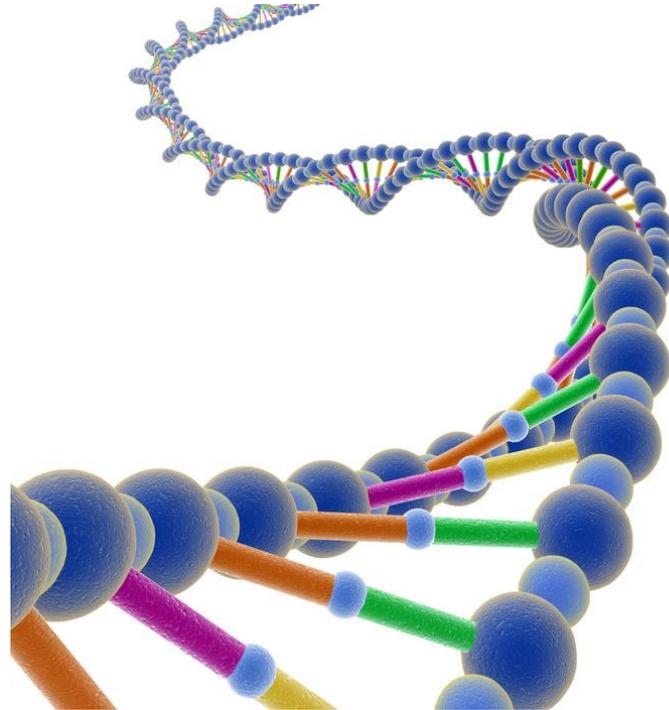
# Logical Justification

- The history of any state begins with the stage of **settled agricultural production**, on which **climate plays** a determinant role. Societies can survive if they have learned to sustainably provide their population with food and protect it from environmental hazards. Primary basic institutions ("social technologies") are being formed.
- “**The social organisation** of appropriation of the surrounding energy and power ... **determines the institutional matrix**” (*Polanyi, 1977: xxxii*).
- In different climatic zones, agriculture developed in different ways. The examples of **arid Egypt** with centralised forms of farming, and **fertile Mesopotamia** with its initial forms of exchange coordination, are well-known proofs.

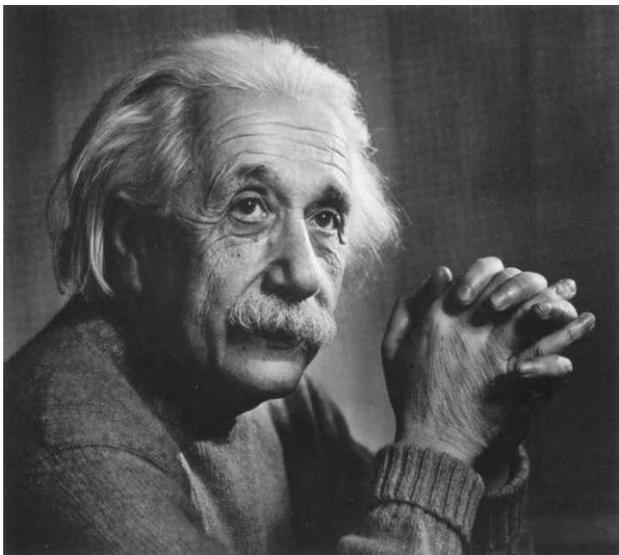
# Logical Justification cont.

- The transition from the agrarian to the industrial and the subsequent stages of social development did not abolish, but absorbed the institutional achievements of previous eras. The mechanisms of ***cumulative causality*** (T. Veblen), ***path dependence*** (P. David, P. Pierson, S. Leibovitz, S. Margolis, etc.), block-in effects (D. North), ***socio-cultural evolution*** (J.E. and G. Lensky), “***an ecological interpretation of history***” (A. Leopold) and similar, provided the transmission of social technologies and supported the dominant position of a particular institutional matrix, which arose at the dawn of the history of the state.

**The irreversibility (one-way direction) of Time's Arrow by *Arthur Eddington* reflects the role of differences that have arisen in the previous stages of social development**



# Is it too strong a simplification or... ?



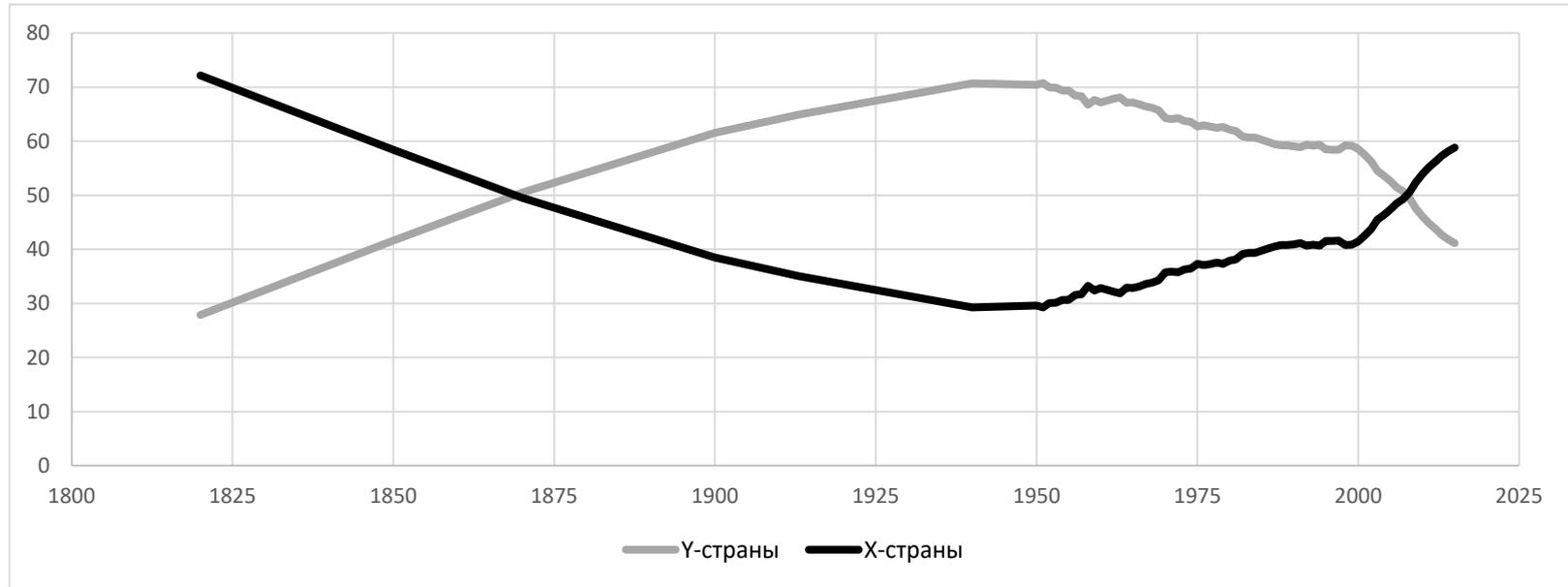
- «...the simpler our picture of the external world and the more facts it embraces, the more strongly it reflects in our minds the harmony of the universe” (*Einstein, Albert and Leopold Infeld. 1938. The Evolution of Physics. Cambridge: Cambridge University Press, p. 225*).

# **THE CHRONOLOGY OF THE COEXISTENCE OF THE TWO TYPES OF MODELS.**

# The Comparative Long-term Dynamics of GDP Produced by X- and Y-countries

- The data of the well-known tables of Angus Maddison (*Maddison Project Database*, 2018).
- 1820 was adopted as the starting reference point beginning with which there are data on a wide range of countries , which makes it possible to create a fairly representative sample of them (n=21, the share in world GDP ~75-85%).

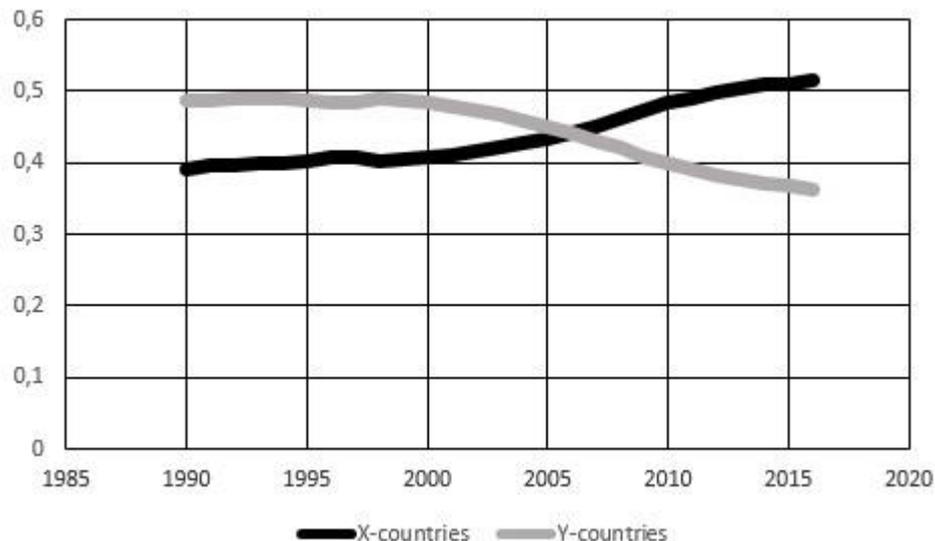
**GDP of countries with non-Western (X-country) and Western (Y-country)  
institutional models, 1820-2016, %, 100% in total,  
Maddison Project Database, 2018, international, Geary-Khamis, 1990 dollars,  
n=21.**



# Test № 2

- The verification of this conclusion was tested in a wider sample of countries ( $n = 63$  , with the share of world GDP  $\sim 90\%$ ), using data from the World Bank for the period 1990-2017.
- The basis for the sample was the results of countries identified with the dominance of X- and Y-matrices, presented in *Kirdina, Kuznetsova, Sen'ko, 2015* (in Russian).

**GDP of countries with non-Western (X-country) and Western (Y-country) institutional models, 1990-2017, as a % within the total world GDP, the World Bank database, n=63.**



# Conclusion

- The results revealed **the effect of climatic characteristics** in the location of countries with different institutional models.
- On territory with relatively **mild climatic characteristics** (optimal air temperatures and precipitation levels), as well as low natural hazard risks, countries with a dominance of Y-matrix institutions develop, i.e. they are characterised by **Western institutional models**.
- In areas where there are **significant fluctuations** in the amplitudes of precipitation and air temperature, where average levels of temperatures and precipitation are relatively higher or lower, and the risks of natural hazards are quite high, X-matrix institutions, or **Non-Western institutional models**, historically predominate.

# Conclusion cont.

- Comparison of the GDP produced by the two groups of countries made it possible to see **the cyclical process of changing world leadership**, i.e. in the prevailing dominance of countries with Western or Non-Western institutional models.
- In the **1820s, Non-Western countries were leading** in the production of world GDP.
- Since the **1870's the domination of Western countries started**, which began to produce more than half of the world GDP. The biggest gap between these two groups of countries was observed in the 1950s-1960s. Since the 1970s it began to decline.
- In **2005-2008 Non-Western countries began outperforming** Western countries by share of world GDP, and this advantage continues to gradually **increase**.
- Some of the **consequences of such reconfiguration** are analysed in the uploaded paper.

# Acknowledgements

- The author expresses gratitude to the participants in the project, among them *Andrei Volynsky, Maria Kruglova, Igor Kirilyuk, Andrey Vernikov, Anna Kuznetsova, Oleg Senko and Alexander A. Rubinstein*, from which the results above were obtained.
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**Thank you for your attention!**

Svetlana Kirdina-Chandler  
[www.kirdina.ru](http://www.kirdina.ru)

# Climate in Russia and Canada

## Similarity:

Average year temperature is 5 ° C

Minimum year temperature is 10 ° C

## Differences:

Annual precipitation, mm

-Canada 537;

- Russia 460

Amplitude of precipitation (max-min), mm

- Canada 36;

- Russia 48

The same regularity for Canada and Russia as between Y- countries and "cold" X-countries:

**annual precipitation is higher but amplitude of precipitation is lower.**

