Evolutionary Economics
Towards the New World of Digital and Localized Economies

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These truly are remarkable times

→ US GDP shrank - 0.7 % in the first quarter of 2015
→ US business investment fell - 2.8 %
→ Exports of goods and services decreased - 7.6 %
→ Weak US trade knocked -1.9 % off the overall growth GDP
→ The rouble is one of the world’s best performing currencies this year with +20 % gain against the US dollar
→ Index of consumer sentiment fell to 90.7 from 95.9 in April.
→ 5.4% unemployment rate, 7-year low. 93 million Americans not working. US labor force participation lowest since 1977.
→ Excluding the inventory, Japan GDP grew a meager +0.7 %
→ German economy grew by only +0.3% in Q1 2015
→ German PMI Manufacturing down to 51.1
Pattern of recessions
Workforce Participation since 2005
Workforce Participation since 1950

(USA 62.7% - as in 1977)
Not in Workforce (over 93 mil.)
30 Year US T-Bond Yield
(1977-2015)
Secular stagnation (SS)

Chronic excess of savings over investments

Cause and consequence?
Without a cause, there is no diagnosis; without diagnosis, there can be no cure.

Interest rates measure value of money. There can be no true economy without the true and reliably signaling interest rates.
Autopoiesis, Panarchy and Self-Sustainability

H/G → A → I → S → GWU
World under Transformation

All markets are „emerging“
(through a series of transformations)
Metamorphosis

Dilemma of advanced economies

A completed series of sector transformations brings forth qualitative metamorphosis of economic system towards localized, automated and integrated (sector-free) communities. The sector differentiation of globalization leads to sector integration of relocalization.
Mainstream Macroeconomics?

- One-sector growth model (Kuznets, 1973) predicts sustained growth in productivity and living standards
- Two-sector model: consumption and investment „sectors“
- Consumption is not disaggregated into agriculture, manufacturing and services
- Assuming the entire added value belongs to manufacturing
- Reallocation of economic activity across sectors coexists with „balanced growth“
- Labor homogeneous: can move across sectors without mobility costs
- Sector reallocation of economic activity is inefficient and calls for governmental intervention

*Why? Because multiple-sector dynamics cannot be handled by neoclassical mathematics (although quite easy for modern evolutionary simulation).*
Mechanism vs. Organism

Linear input-output
(physics; mechanical)

Circular autonomy
(biology; organic)
Key Metamorphosis Drivers (Relocalized Technologies)

1. **Self-Service (Outsourcing to Customer); Self-Help Empowerment**
2. **Disintermediation (Elimination of the middleman; unbundling of services)**
3. **Mass- and Self-Customization (Prosumer); massive individualization**
4. **Information to Knowledge (From Description to Action)**
5. **Reintegration of Labor, Task and Knowledge**
Additional Metamorphosis Drivers

6. From Supply chains to Demand chains (CIP)
7. Digital and Virtual economy (Digital files + 3D = end of trad. industry)
8. High-Technology Impact (Disruptive technologies; discontinuous improvement)
9. Technology Support-Net Bypass
10. From Linear to Cyclical Organization (Waste Elimination)
11. Resource Substitution and Optimization
12. Towards Entrepreneurial University
Corsi e ricorsi storici

Giambattista Vico
Relocalization

*Corso and Ricorso* of socio-economic evolution

**Globalization** - restructuring of the initially distributed and localized world economy into spatially reorganized processes of production and consumption across the national boundaries, economies and political states on a global scale. **Relocalization** - restructuring global knowledge and high-technology based expansion of the local experience and local producers and consumers. Global experience and knowledge is becoming *embodied* in local communities.

Localization → Globalization → Relocalization

*Corso*: localization → globalization
*Ricorso*: globalization → relocalization
From Globalization to Relocalization

Traditionally, growth rate of GDP is 3.5% and int. trade is 8% (2006) - about twice as high

Last years: growth GDP > growth int. trade
(2015: Jan -1.6%, Feb -0.9 %)

==> Deglobalization
Investment in foreign assets now falling under 40% (over 50% in 2008)

==> Relocalization

“The golden age of globalization has ended” (Beijing)
J. A. Bata’s “Industrial City” (1939)

Today we would call it Knowledge City, with atmospheric satellite, total digitization, entrepreneurial university, custom-made production, vertical farming and additive manufacturing.
At the speed of light ...

Digitized information and knowledge (software, algorithms, recipes, programs, methods, etc.) travel to the points of prosumption more effectively than logistics of physical products and objects.
New World Strategy

1. Understand the phenomenon
2. Adapt to the circumstances
3. exploit new Opportunities

Sources