

Knowledge Economies: A Global Perspective

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Going Global: the Challenges of Knowledge-based Economies
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Nota

- The views expressed in this presentation are those of the author and should not be ascribed to the World Bank and its Member Countries.

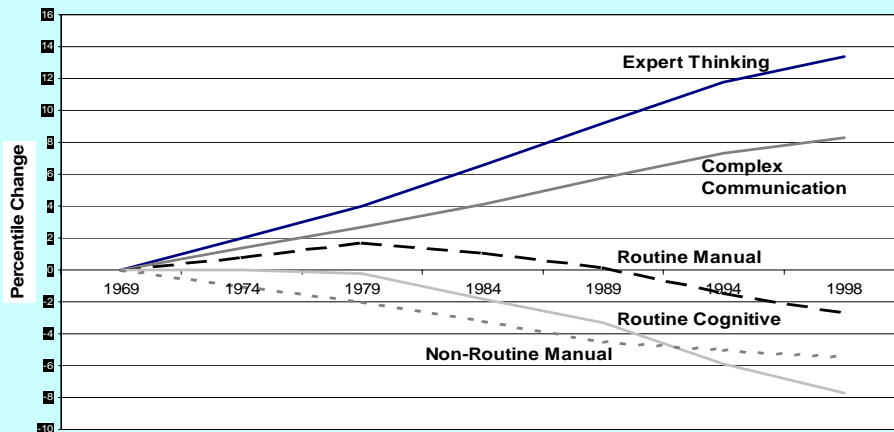
Summary

- Defining knowledge-based economies
- Benchmarking KE performances
Quantitative perspectives
- Socio cultural dimensions: Qualitative perspectives

Importance of the “grey matter”

- Technological revolution+ globalization
>>> importance of “grey matter”.
- hence: new catch words
 - Information society,
 - post industrial era
 - Knowledge economy, knowledge workers
 - Intellectual capital
 - Etc
-

Changes in Job Task-Skill Demands, USA, 1960 – 1998



Source: Autor, Levy, and Murnane (2003) "The Skill Content of Recent Technological Change: An Empirical Exploration," *Quarterly Journal of Economics*.

The Knowledge Revolution

- Increased global knowledge and development of new technologies, rapid speed of innovation, shorter product life cycles, greater importance of intangibles, productivity and up-skilling of labor force, as well as intensified globalization and competition have all characterized the "Knowledge Revolution".
- The ability to create, access and use knowledge is becoming fundamental determinant of global competitiveness

Macro Framework for Knowledge-Based Economies (WBI K4D program)

- Economic incentive and institutional regime for the efficient use of knowledge and the flourishing of entrepreneurship
- Educated, creative and skilled people
- Dynamic information infrastructure
- Effective national innovation system
- 12 variables to benchmark countries within this framework (plus two performance variables)

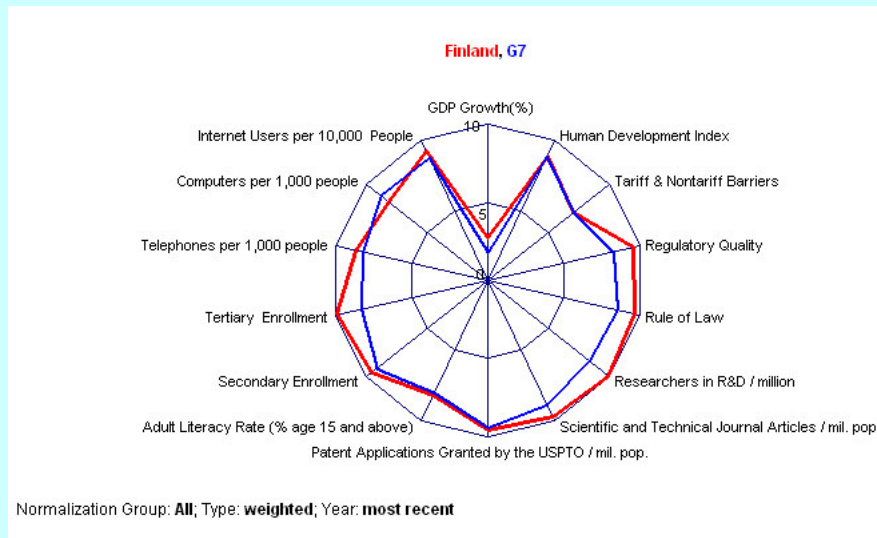
Source: WBI K4D Program

WBI/KAM Methodology

- KAM: 80 structural/qualitative variables to benchmark performance on 4 pillars
- Variables normalized from 0 (worst) to 10 (best) for 128 countries
- Benchmarking based on ranking not on absolute values
- www.worldbank.org/wbi/kam
- Basic scorecard for 14 variables at two points in time, 1995 and 2004 (most recent)
- Aggregate knowledge economy index (KEI)

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Basic Scorecard



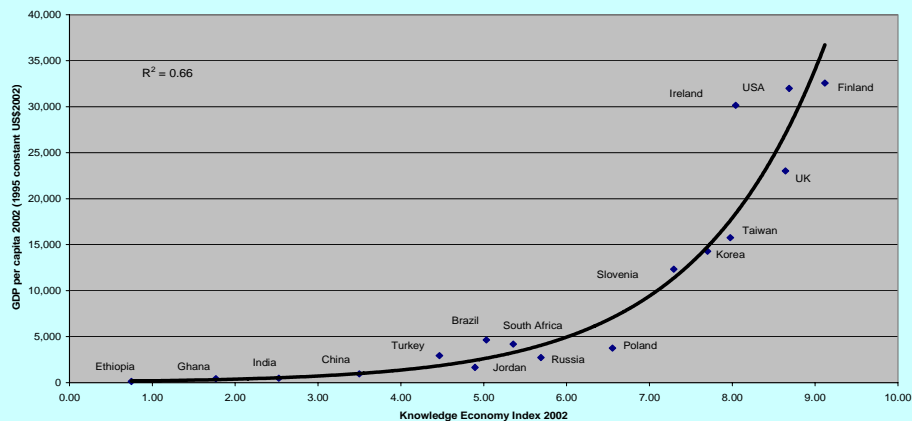
COMPETITIVENESS AND KNOWLEDGE ECONOMY

	CGI WEF		KEI WBI
COUNTRY	2005 Rank	COUNTRY	Rank (most recent)
Finland	1	Sweden	1
United States	2	Finland	2
Sweden	3	USA	3
Denmark	4	Denmark	4
Taiwan	5	Norway	5
Singapore	6	Canada	6
Iceland	7	Australia	7
Switzerland	8	Switzerland	8
Norway	9	Netherlands	9
Australia	10	UK	10

Knowledge Economy Index (KEI) and GDP per Capita

→ Knowledge is critically linked to economic performance

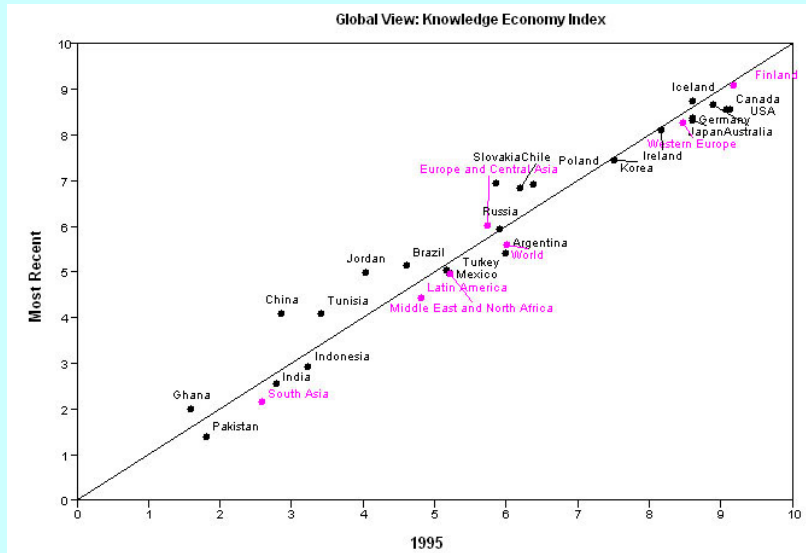
Regression KEI 2002 and GDP per capita 2002



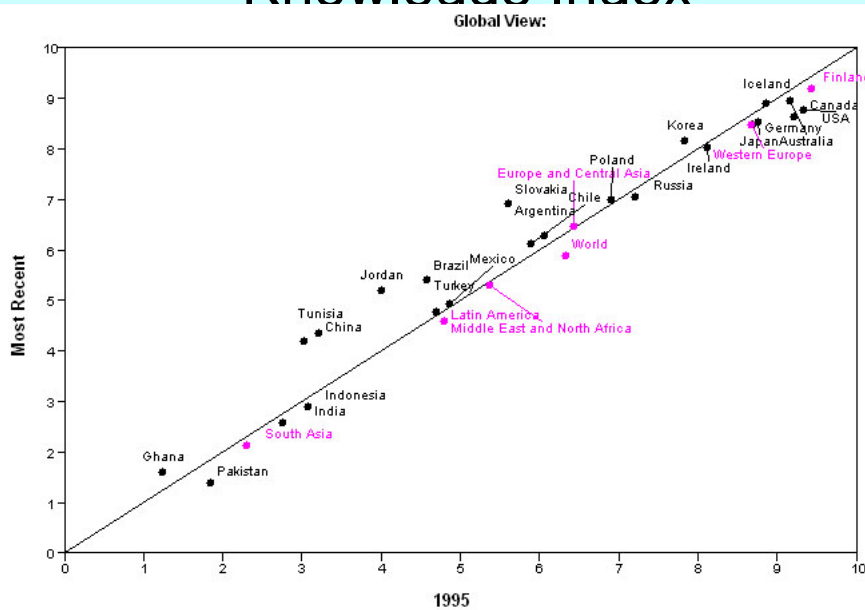
Global trends: 1995-most recent

- Global ranking trends (when a country point is above the 45 degree line, its ranking has improved over the period)
- Two charts: KE Index and Knowledge Index (only the three knowledge related pillars: education, ICT and innovation)

Knowledge Economy Index



Knowledge Index



Industrialized economies

Advanced Economies

- Best performers : Finland, and other Nordic Countries, Canada, Australia
- Slight decline of US; Japan behind (due to EIR) but stable

Transition economies

- Best performers: EU accessed countries
- Russia recovering from crisis (keeping its rank compared to 1995)

Developing countries

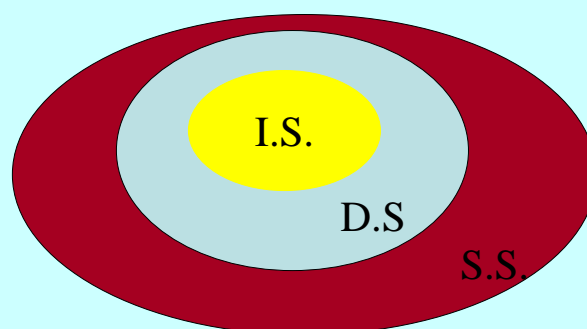
- China catching up quickly (more than India)
- In LAC, Brazil moving up, Argentina declining (due to EIR)
- In MNA UAE close to OECD economies, Jordan and Tunisia performing well
- South Asia and Africa countries lagging behind, with some catching up (e.g. Bangladesh, Ghana, Madagascar, Mozambique)

Socio-cultural lens

Understanding how knowledge and innovation are introduced in economic systems

- Three major areas: West as source of scientific progress, Far East as leader in application in production systems, South as laggard
- Put country performances in anthropological context: West/East comparisons and comparisons between European cultures

INNOVATION, DEVELOPMENT, SOCIETAL SYSTEMS



JEA World Bank Institute/OECD

East-West Behavioral Contrasts

Western distancing	Eastern immersion
Science separate from technology	Science and technology as a single notion
State separate from society	State as part of society
Individualistic exploration of the unknown	Collective adoption of the known

West – East Asia Innovation climates – Key contrasts

- Importance of science-based innovations
- Technology leaders (radical innovations...)
- Public/private system with “rule of law”
- Stock exchange bubble-induced recession, durable slowdown
- Technology/production-driven innovations
- Technology followers (FDI, licenses)
- Connection-based system (Guangxi)
- Financial crisis (induced by connection-based economy)

Western profiles and development systems

	Anglo-Saxon	Latin-Mediterranean	Rhine-German
Ethos	Exposed individualism.	Protected individualism.	Co-operative individualism.
Industry	High tech/ res. nat	State based high tech	Medium size industry
Education	Elitist, in-equalitarian. Concrete	Democratic, but in-equalitarian. Abstract	Dual (school-enterprise)
Research	Broad	Math/phys specialization	Eng. Specialization.
Finance	Stock exchange/ venture cap	Bank	Bank/industry

The Island factor

- Finland, Taiwan, Ireland, Israel, Korea, and...other success stories: what do they have in common?
- They are islands, either geographically or culturally speaking, and they have gone under serious pressures (crisis, threats, etc).
- Hence a genuine capability to mobilize their inner resources (both human and financial) and to take advantage of external inputs (knowledge inputs in particular).

The Island Factor (II)

- Econometric estimations confirm that an island situation (geographic or cultural) is a growth booster
- So creating a sense of island under pressure is key as a successful policy drive for development and growth
- This could apply not only at the national level, but also at the infra national level – regions, cities, as well as the supra national level.

The Finland's success story

- **“Finland as a Knowledge Economy”:
WBI/ETLA report**
- Most competitive nation (WEF)
- Ranked 1st in education (OECD), governance (WB), innovation (UNDP), etc
- Exceptional pragmatism and communitarian sense
- Strong crisis in the early 1990s (after crumbling of URSS)
- A “cultural lone wolf”, made of both Western and Asian cultures (B. Lewis)

Conclusion

- KE as foundation of competitiveness
- Need to develop, deepen both quantitative analysis and qualitative approaches
- Think with long term policies to work on social capital and cultural bases
- Analytical and political challenges!

Annex

- KE work at World Bank Institute
- KE work in other parts of the Bank

Annex -- Knowledge Economy work at the World Bank (WBI)

- World Development Report 1998/99: “Using Knowledge for Development”
- WBI K4D program: Development Strategies with Knowledge and Innovation-related Policies at the core
 - Country studies (Korea, China, Finland, and a few others in the pipeline), lighter country assessments
 - Policy fora (China, India, Brazil, ASEAN countries, Maghreb) and conferences with WB Regions
 - Focused work on selected aspects (notably innovation, diasporas)

Annex -- KE work within the World Bank

- Regional Conferences with WBI support (ECA, MENA, AFR forthcoming)
- Studies in selected countries (e. g. Turkey, Lithuania, Tunisia)
- Follow on to WBI work within WB Regions (KE unit in Europe and Central Asia), initiating lending projects.
- Use of GDLN (video conference network)

Thank you!

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www.worldbank.org/wbi/knowledgefordevelopment