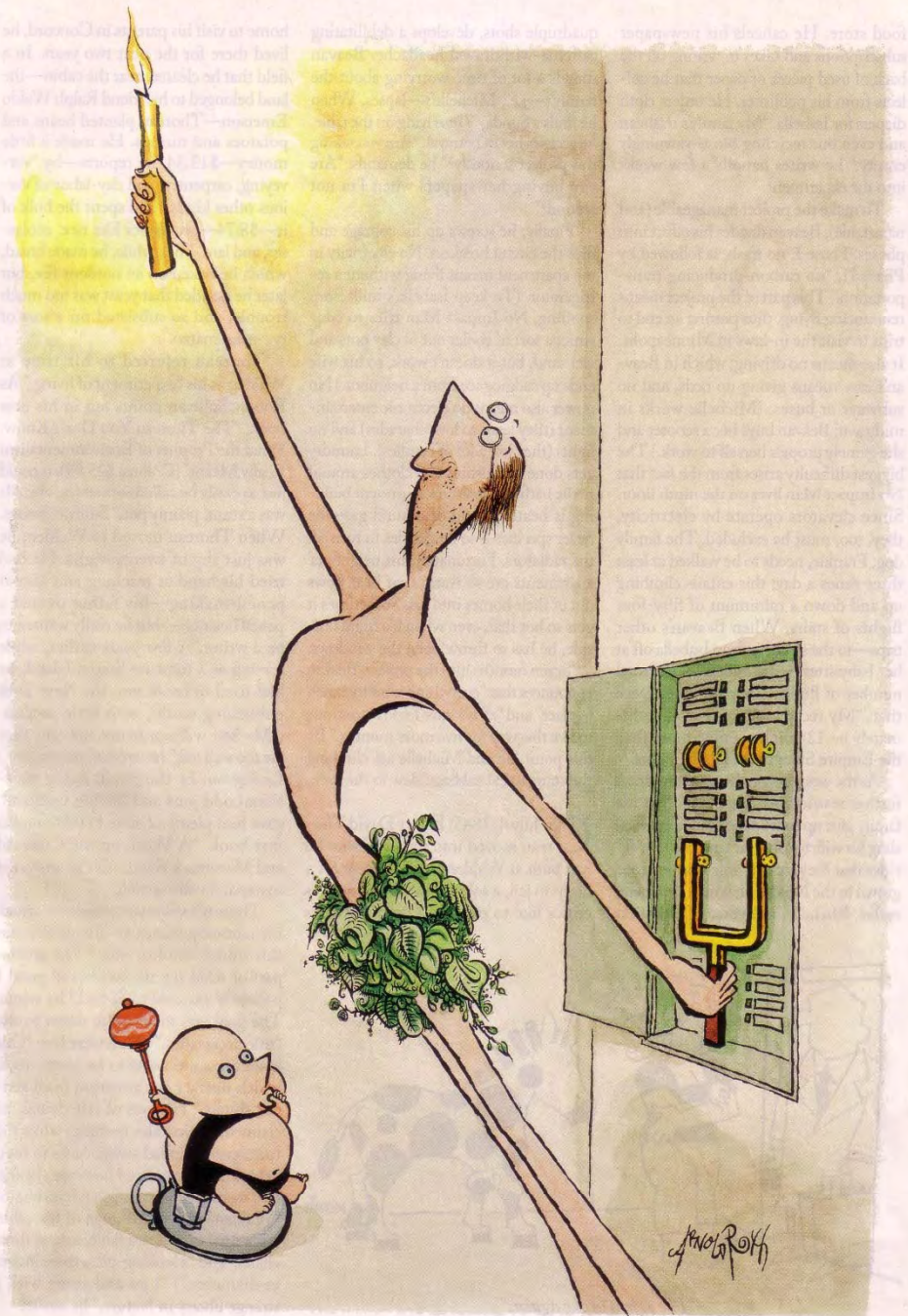




Energie GES

quelques faits majeurs

De 1970 à 2004, intensité énergétique : moins 30 %

mais : pop + 69 %

revenu + 77 %

d'où consommation doublée

Prévisions AIE

intensité énergétique continue de décroître fortement
mais croissance du sud

scénario de base de la demande : +1,8 par an

d'où consommation énergétique x2 en 2050

idem pour GES

scénarios alternatifs : +1,3 %

GES +27%

Les PVD encore minoritaires dans les émissions de GES,
déjà majoritaires dans la consommation d 'énergie

En 2030 : 60 % de la consommation totale d 'énergie
52 % dans la production primaire totale
(scénario de base AIE)

croissance très forte de la consommation d 'électricité:
en 2050 , demande électrique x 4, pour une conso par tête égale
au tiers du niveau actuel OCDE (AIEA)

Répartition sectorielle:

GES dans le monde

énergie :	26 %
transports :	14 %
résidentiel :	8 %
industrie :	19 % (ciment 5, acier 5, alu 1)
agri-forêts :	31 %

En France très différent :	transports	27 % (+ +)
	résidentiel	19 % (+)
	industrie	20 % (- -)
	énergie	13 % (-)

Les villes

enjeu principal

parce qu 'elles concentrent la croissance

mais : beaucoup plus efficaces !!!!

La transition urbaine

d 'ici 2030, le delta de pop mondiale essentiellement
dans les villes du Sud

passage de 2 à 4 milliards

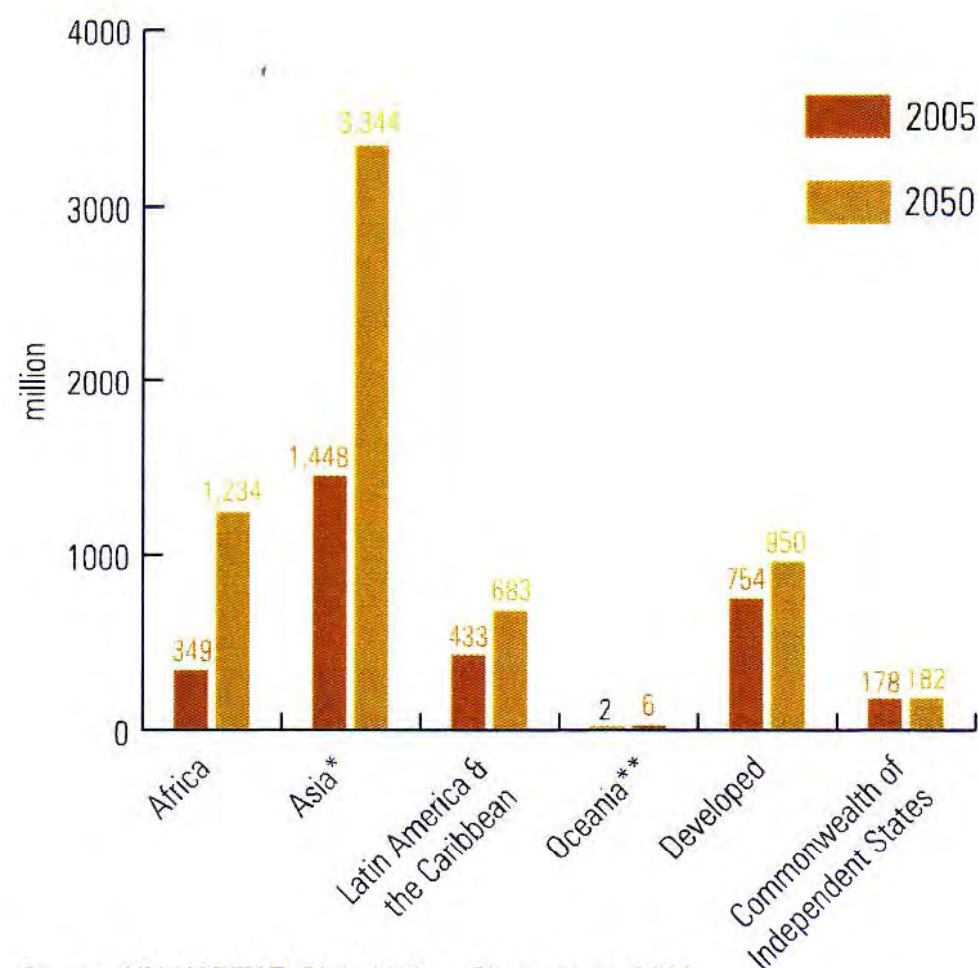
10 Londres par an

La transition urbaine

temps de passage de 1 à 8 millions

Londres	100 ans
Bangkok	45
Dacca	37
Seoul	25

FIGURE 1.1.3: URBAN POPULATION (MILLIONS) BY REGION, 2005 AND 2050

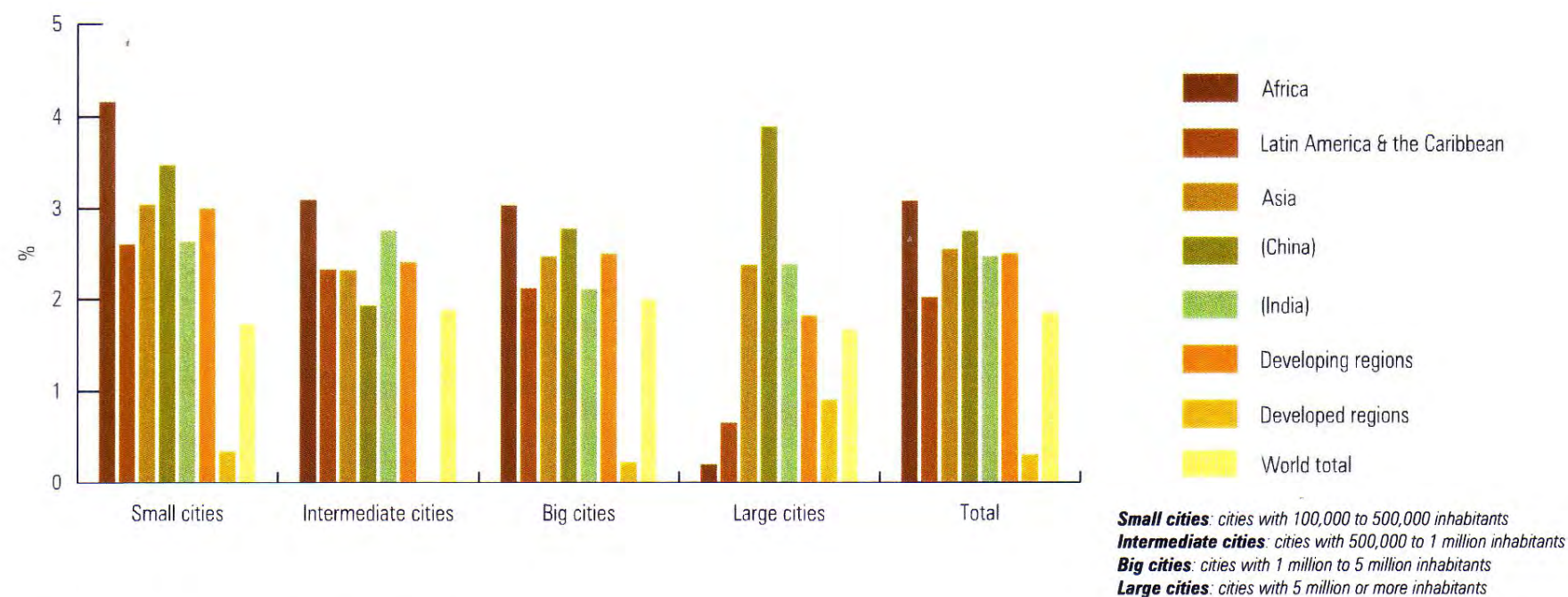


Source: UN-HABITAT, Global Urban Observatory, 2008.

Data from UN Population Division, World Urbanization Prospects, 2007 revision.

Note: *Asia doesn't include Japan. ** Oceania doesn't include Australia and New Zealand.

FIGURE 1 2.3: ANNUAL GROWTH RATE OF THE WORLD'S CITIES BY REGION AND CITY SIZE, 1990-2000

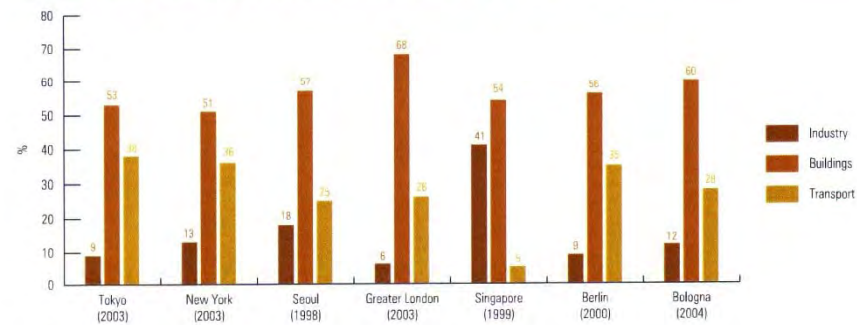


Source: UN-HABITAT Global Urban Observatory, 2008.

Note: UN-HABITAT calculations based on UN Statistics Division, Demographic Year books (1985 - 2004), various years, and UN Population Division, World Urbanization Prospects, 2005 revision. Analysis based on a sample of 2,695 cities with populations of more than 100,000.

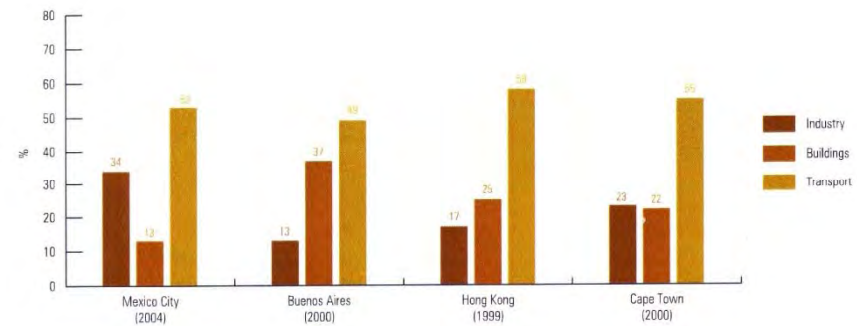
Dans les villes asiatiques:
forte part de l'industrie
(marges de progrès)

FIGURE 3.4.3: ENERGY CONSUMPTION IN SELECTED CITIES IN HIGH-INCOME, INDUSTRIALIZED ECONOMIES



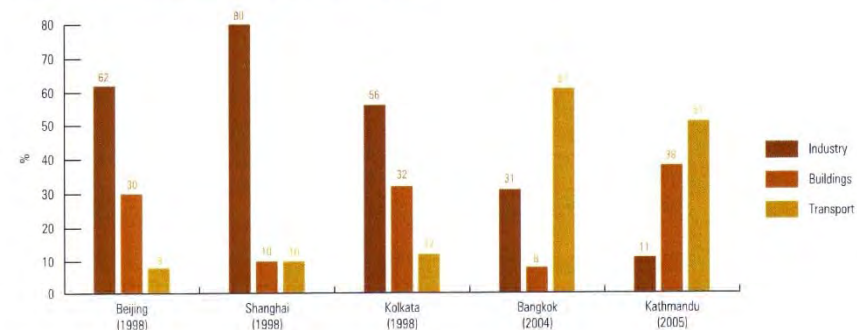
Source: UN-HABITAT Global Urban Observatory 2008
Note: Data from various sources, 1999-2004

FIGURE 3.4.4: ENERGY CONSUMPTION IN SELECTED CITIES IN MIDDLE-INCOME COUNTRIES



Source: UN-HABITAT Global Urban Observatory 2008
Note: Data from various sources 1999-2004

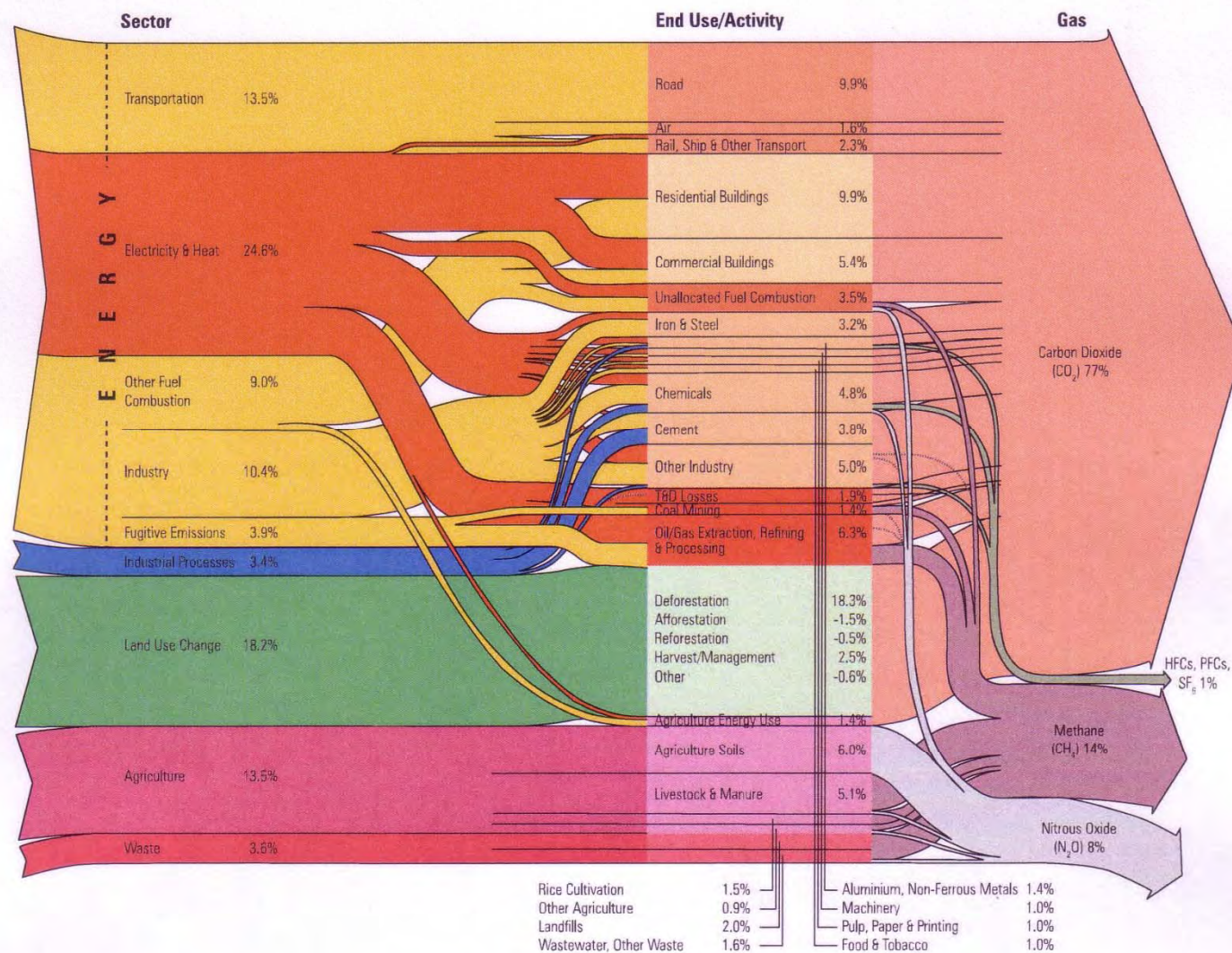
FIGURE 3.4.5: ENERGY CONSUMPTION IN SELECTED ASIAN CITIES



Source: UN-HABITAT Global Urban Observatory 2008
Note: Data from various sources, 1998-2005

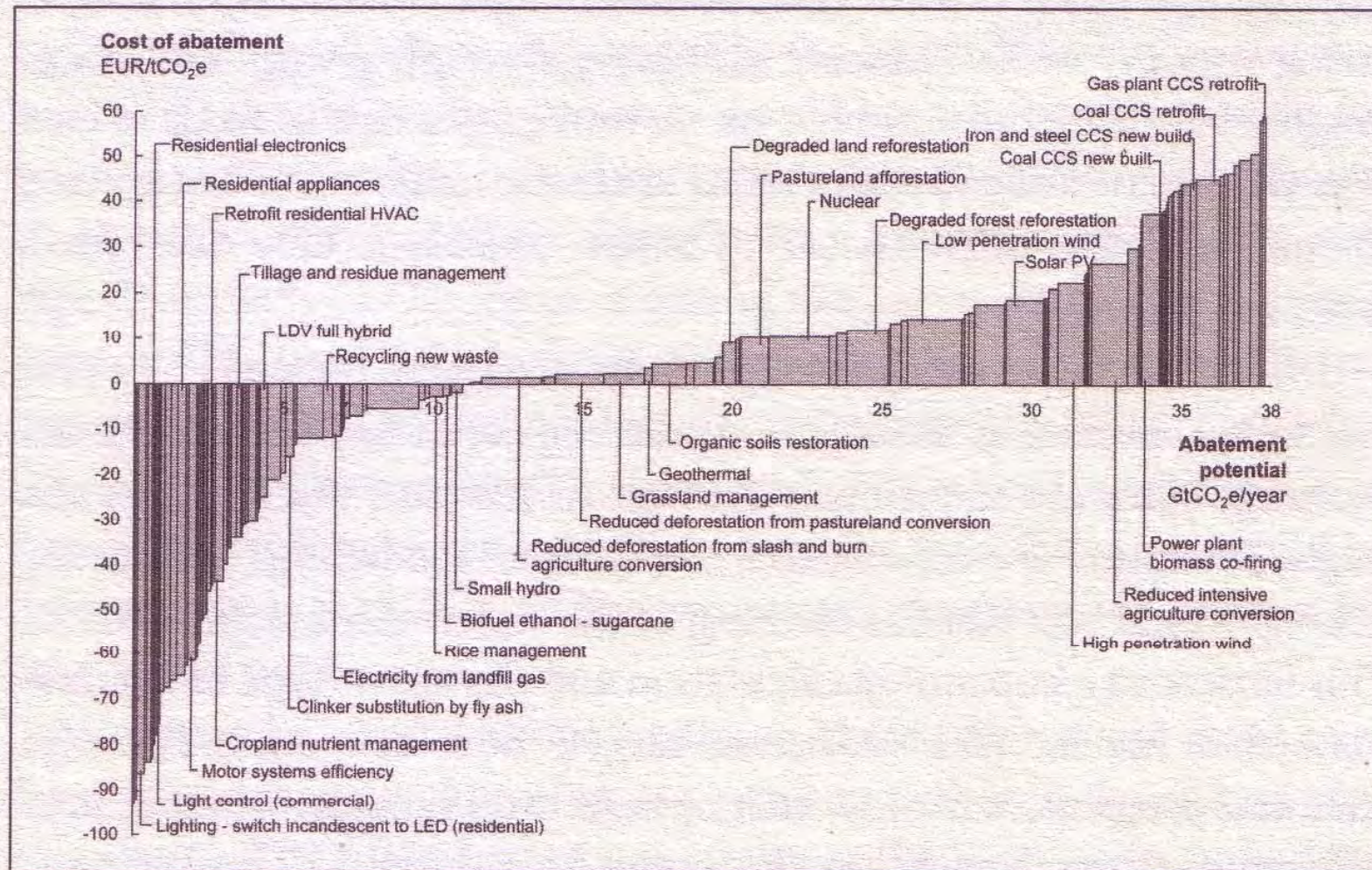
Monde Transports : 13.5 % Bâtiment : 15.4 %

FIGURE 3.2.1: WORLD GHG EMISSIONS FLOW CHART



Source: World Resources Institute (WRI) - Climate Analysis Indicators Tool (CAIT)
<http://cait.wri.org/>

Global GHG Abatement Cost Curve – 2030



Source: McKinsey and Company. Many thanks to Jens Dinkel and his team at McKinsey for sharing this research.



1.

Le basculement du monde

Fin de la grande divergence

Kenneth Pomeranz

Une grande divergence

*La Chine, l'Europe et la construction
de l'économie mondiale*



Albin Michel

L'évolution de l'humanité



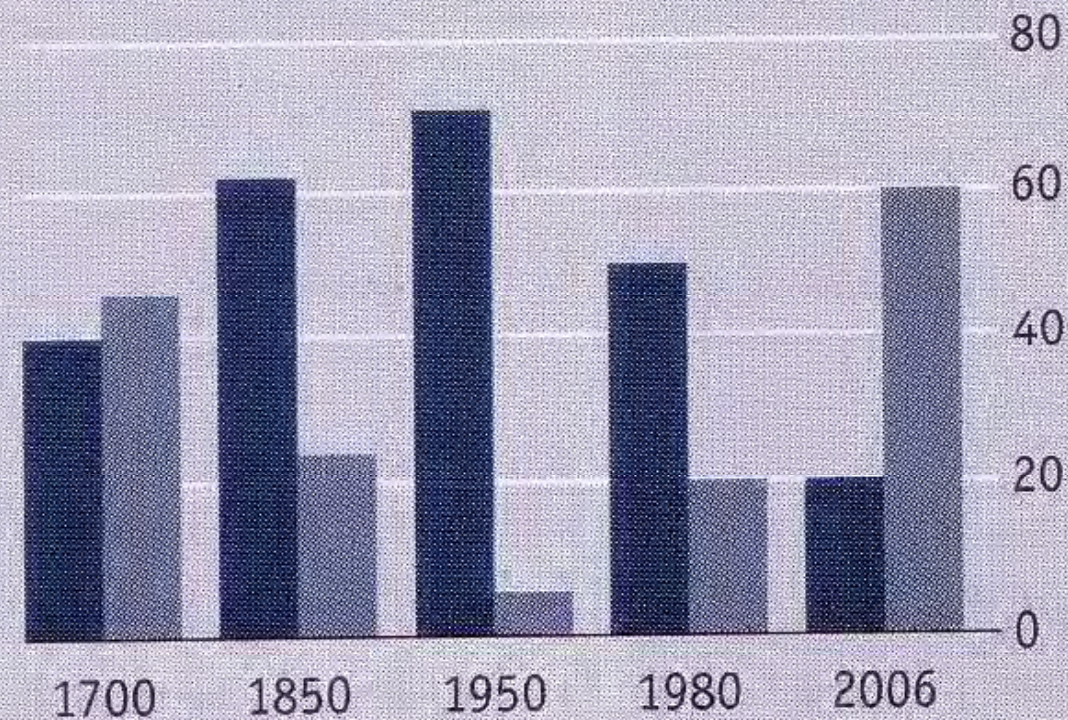
Asia's return

3

Middle-class population as % of world total

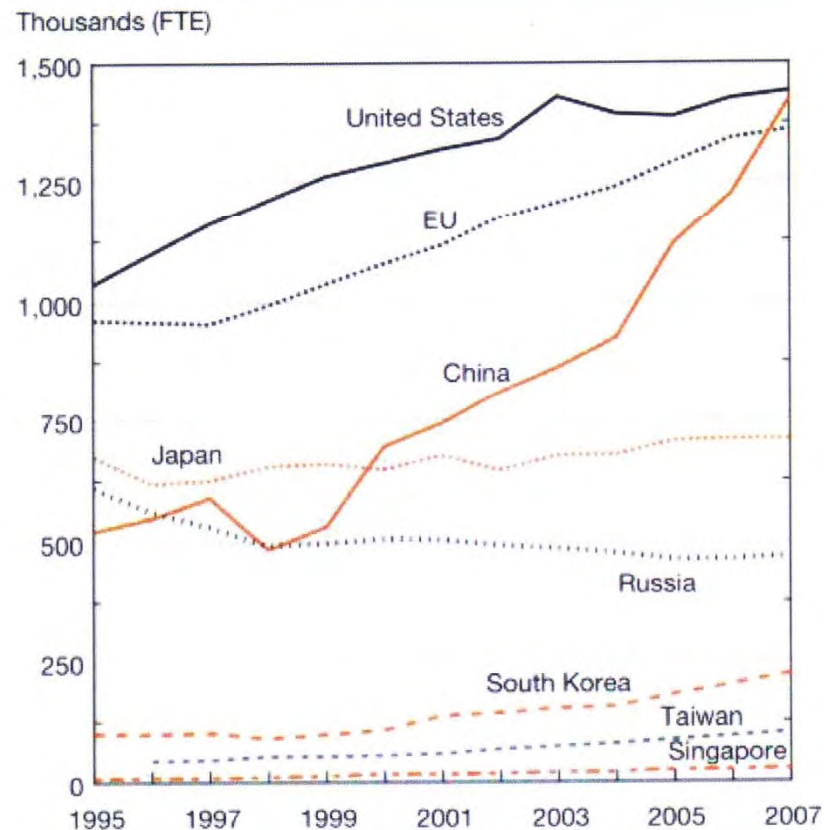
West

Asia



Source: Surjit Bhalla, *"The Middle Class Kingdoms of India and China"* (forthcoming)

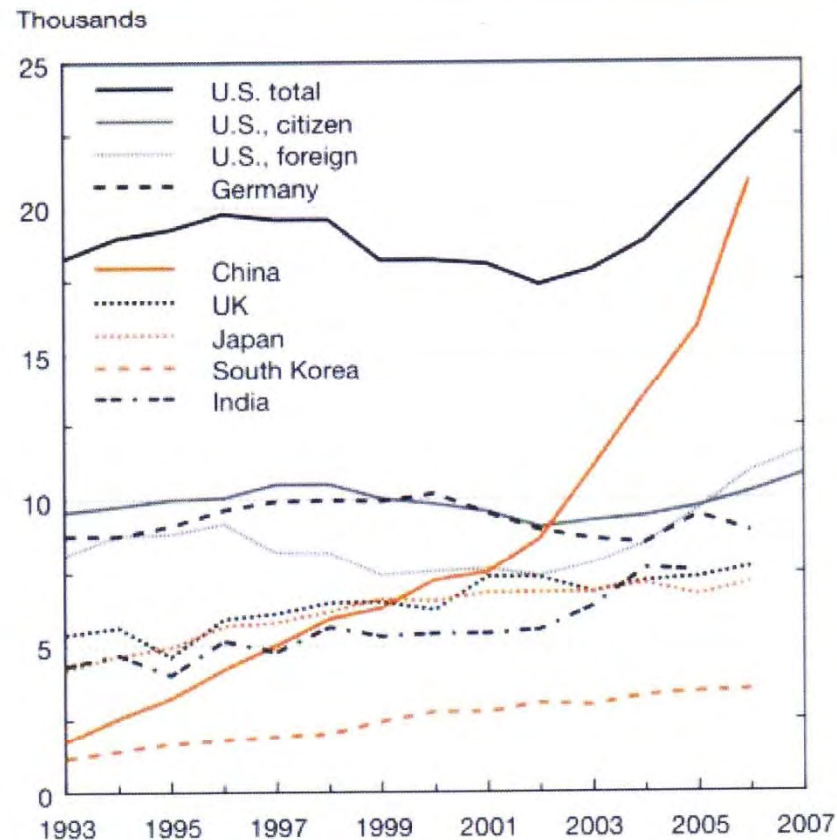
Researchers in selected regions/countries/economies: 1995–2007



EU = European Union; FTE = full-time equivalent

NOTES: U.S. data for 2007 estimated based on 2004–06 growth rate. EU includes all 27 member states.

Doctoral degrees in natural sciences and engineering, selected countries: 1993–2007



UK = United Kingdom

NOTE: Natural sciences include physical, biological, earth, atmospheric, ocean, agricultural, and computer sciences and mathematics.

Michel Aglietta

LA CRISE

Pourquoi en est-on arrivé là ?
Comment en sortir ?

MICHALON

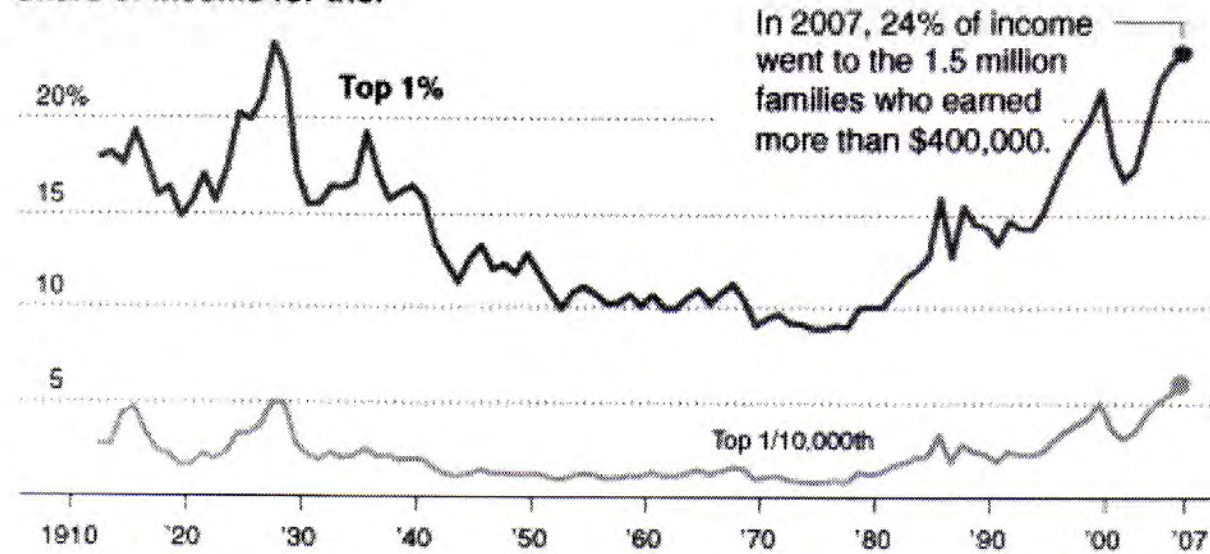
RAGHURAM G. RAJAN

**FAULT
LINES**

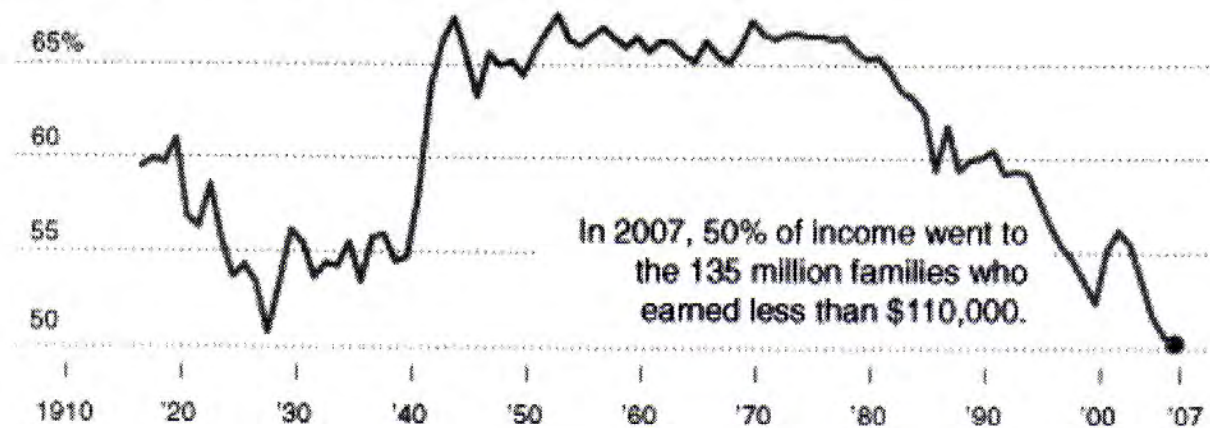
**HOW HIDDEN FRACTURES STILL
THREATEN THE WORLD ECONOMY**

Chinamerica ?

Share of income for the:



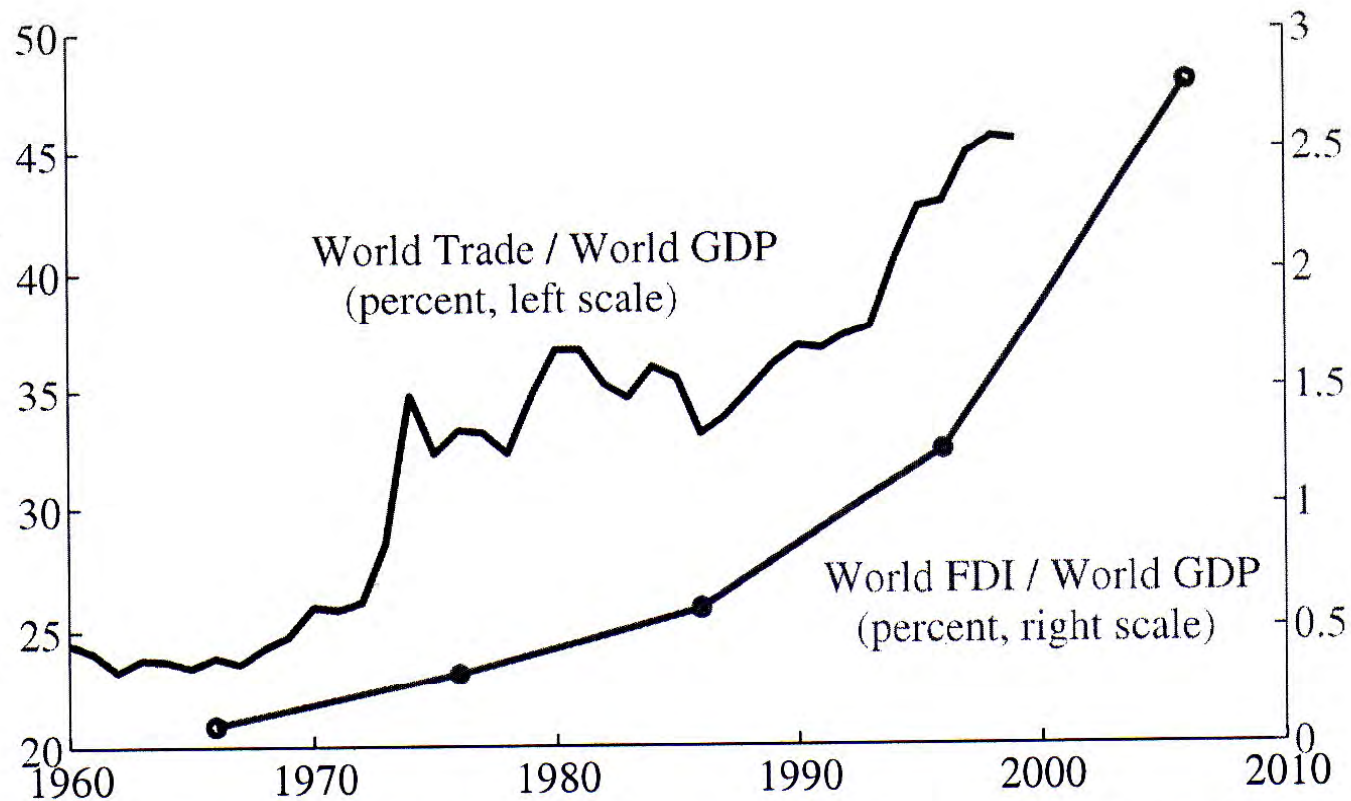
Share of income for the **bottom 90%**



2.

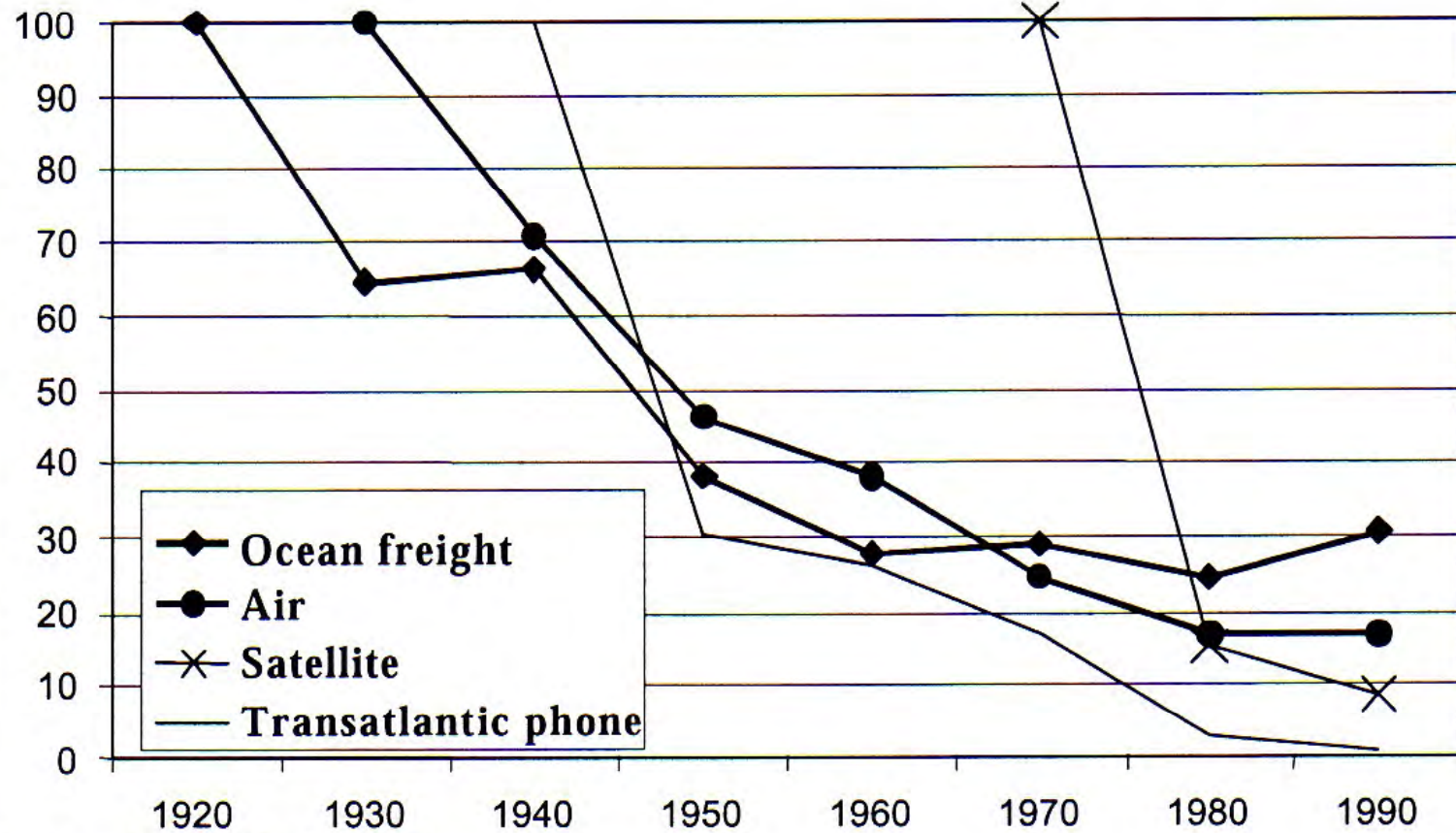
Dégroupages
et mondialisation à grain fin

Figure 1: The Rise in Globalization



Note: World trade is the sum of world exports and imports as a share of world GDP from the Penn World Tables 6.1. FDI as a share of GDP is from the World Bank's *World Development Indicators*.

Figure 4: Transportation v. Communication Costs, 1920-1950



Source: World Bank (1995).

Le homard just-in time



Produktpuzzle

Produktions- und Zulieferorte für die „Sonicare Elite 7000“

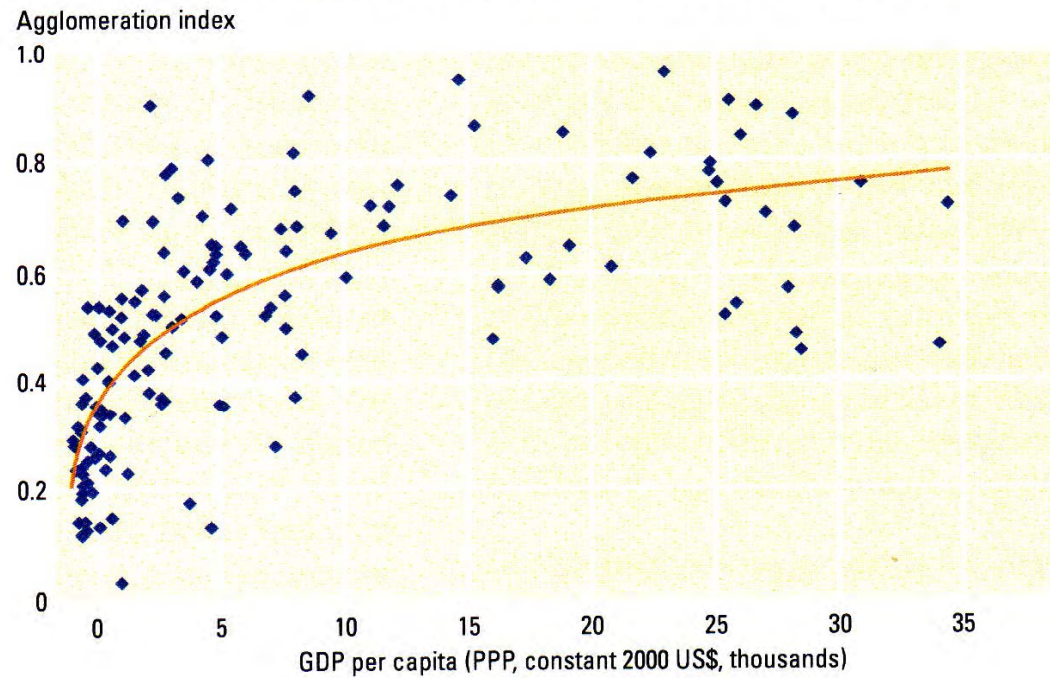


3.

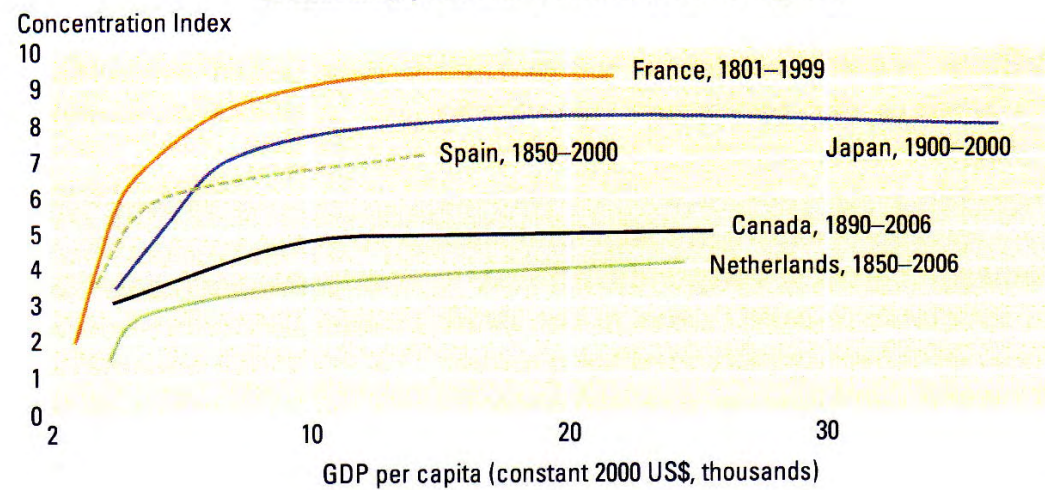
Fluidité / Polarisation

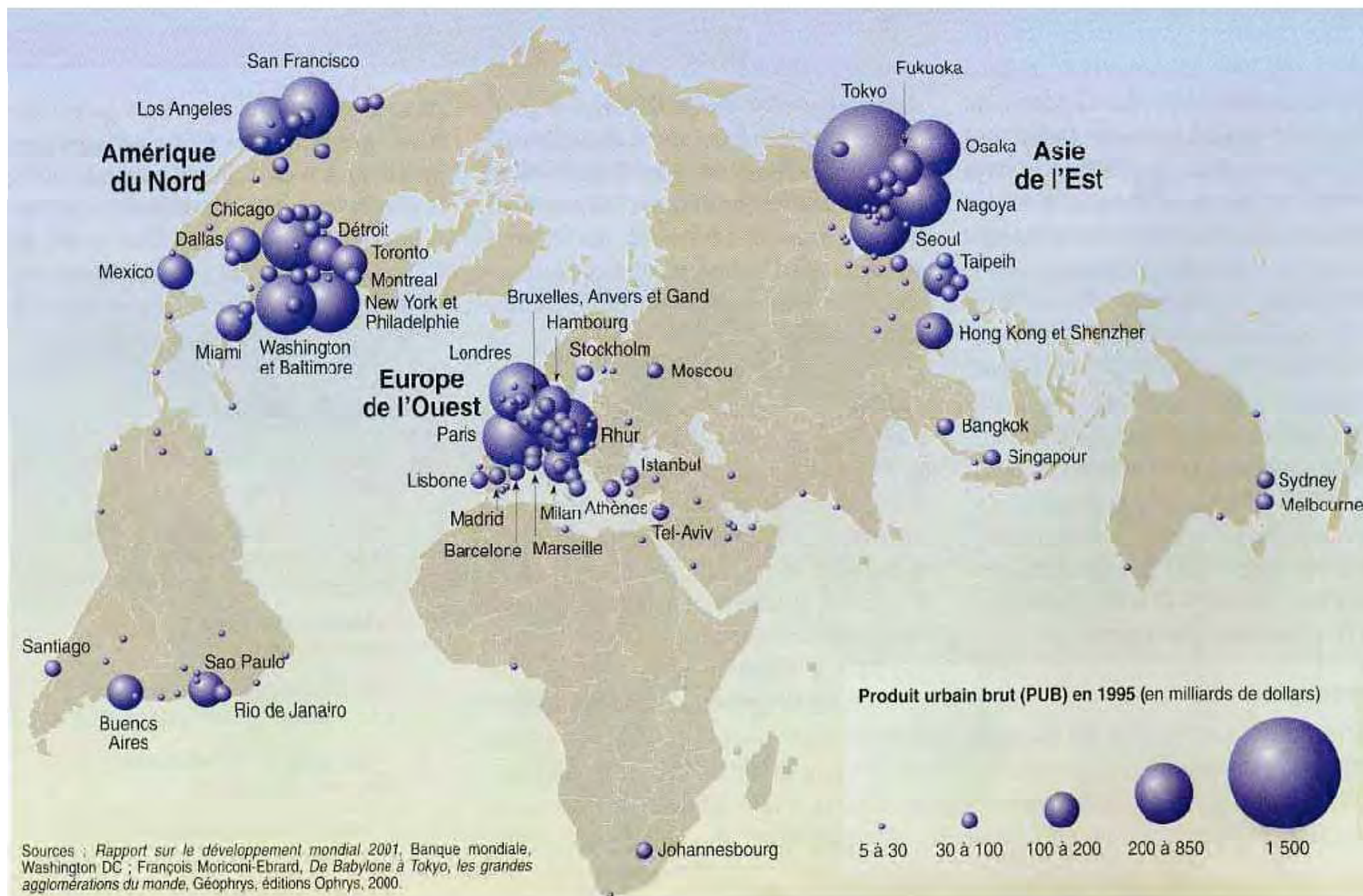
Non Mr Friedman le monde
n'est pas plat

a. As nations start to develop, people concentrate in towns and cities



b. Nationally, production concentrates in leading areas





Israel : the start-up nation

+ d 'entreprises au Nasdaq que l 'Europe l 'Inde et la Chine réunies

VC/ hab : 2 x US

30 x Europe

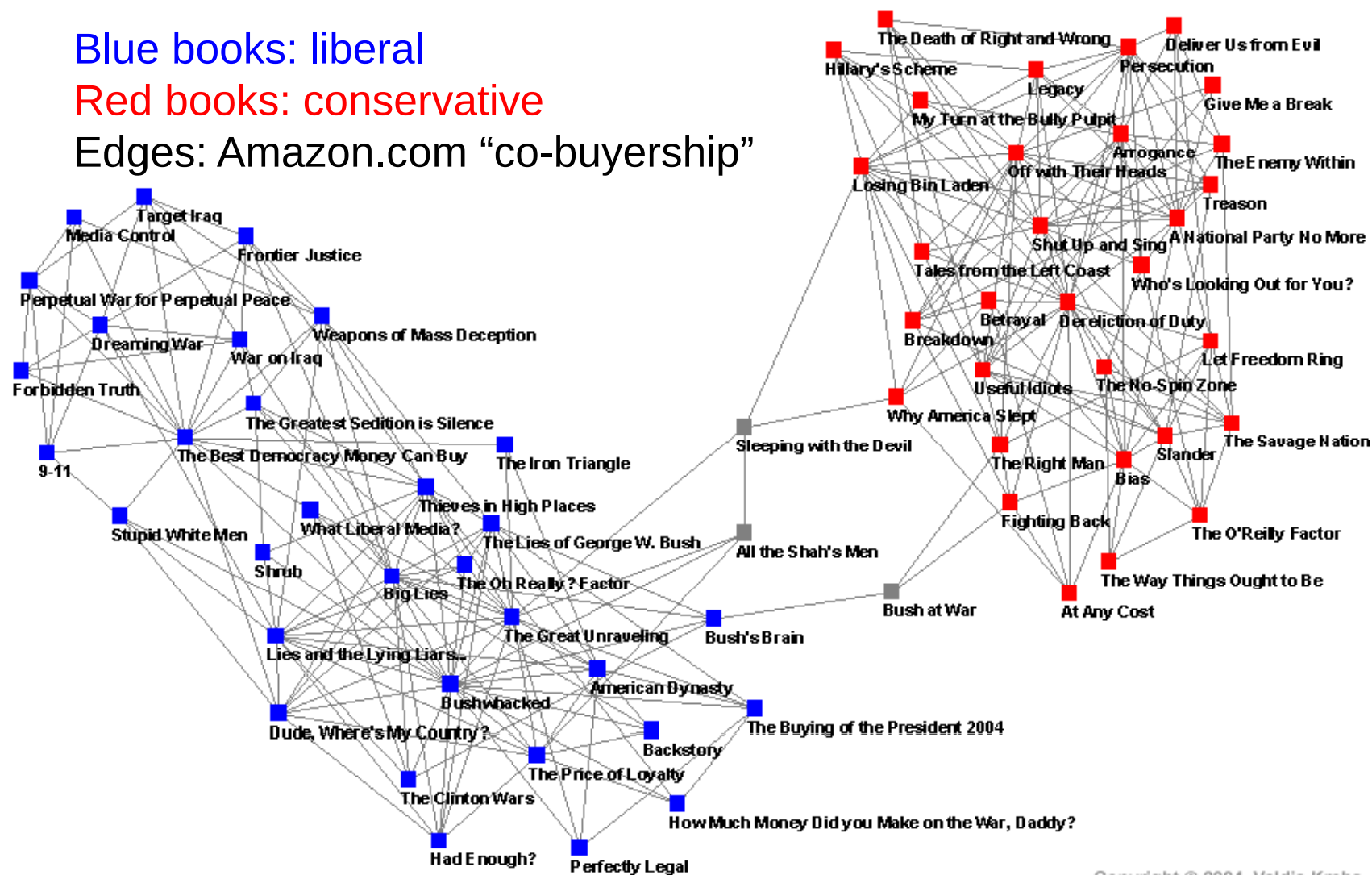
D. Senor, S. Singer, Israel, The Start-up Nation, 2010

A political network

Blue books: liberal

Red books: conservative

Edges: Amazon.com “co-buyership”

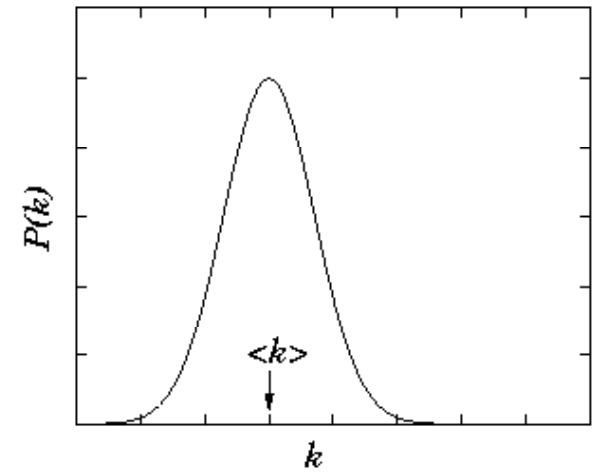


Copyright © 2004, Valdis Krebs

Valdis Krebs

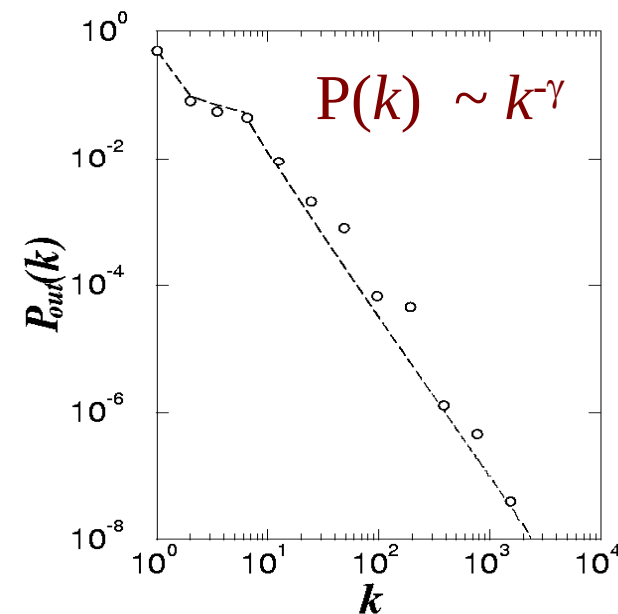
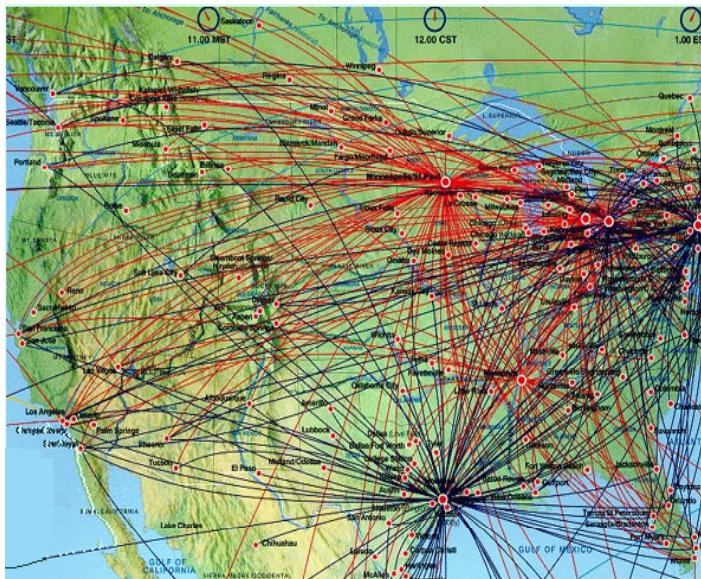
World Wide Web

Exponential Network



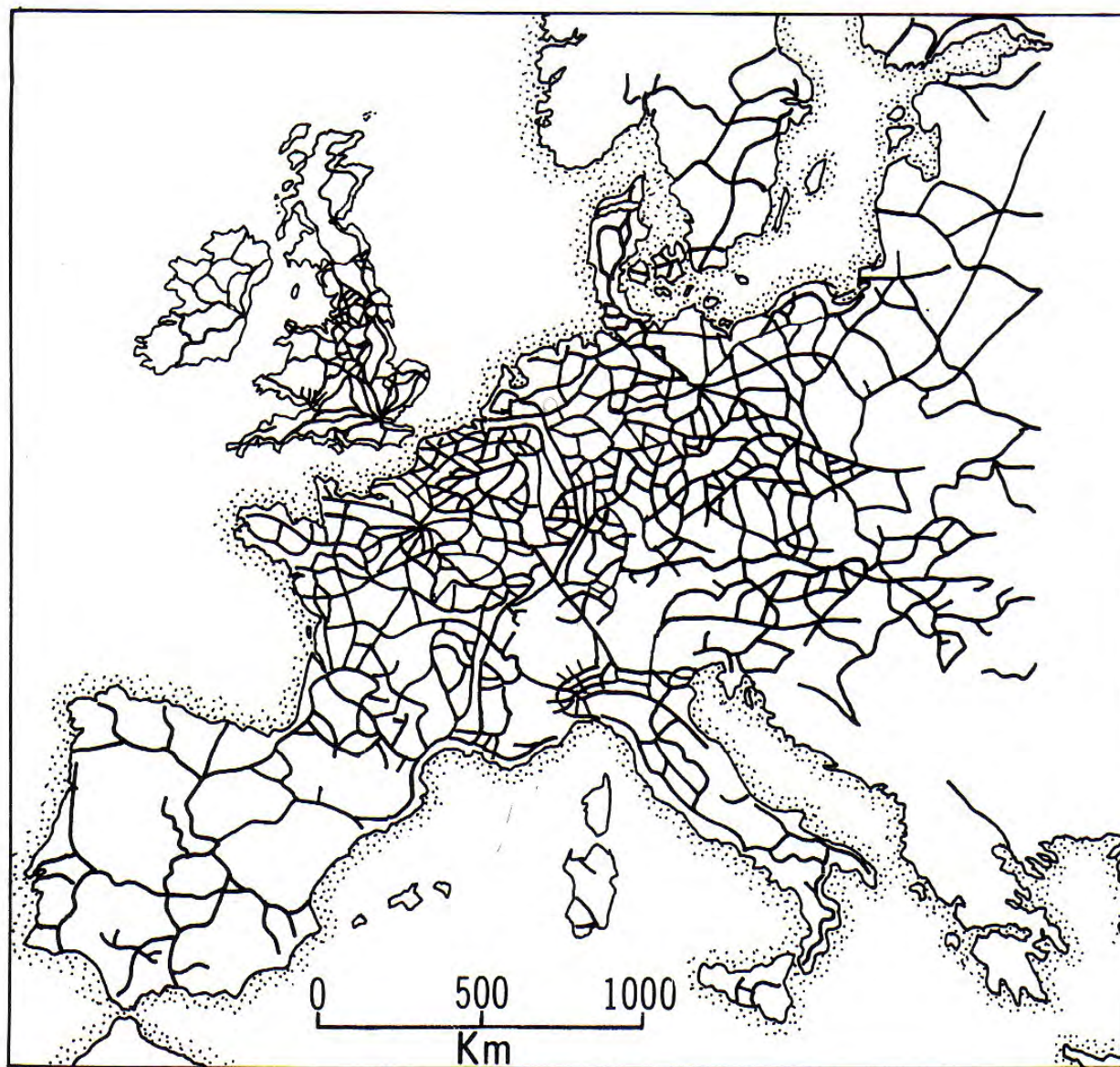
Expected

Scale-free Network

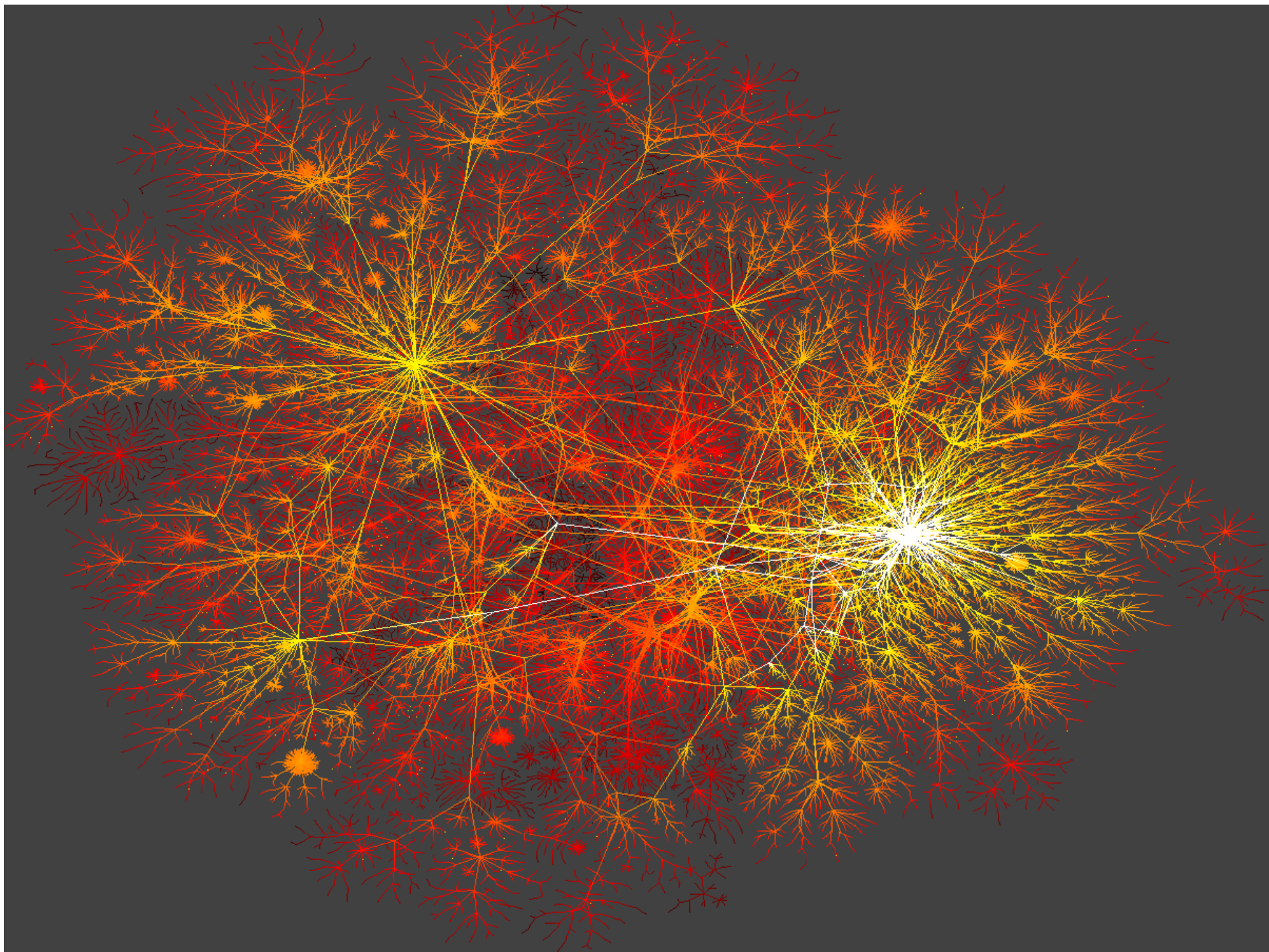


Found

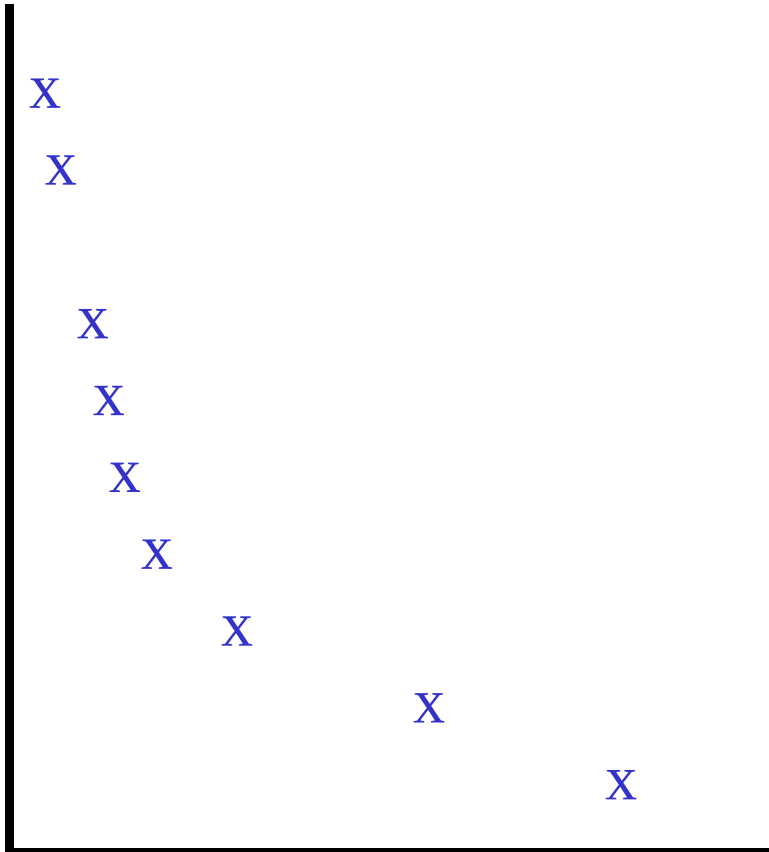
R. Albert, H. Jeong, A-L Barabasi, *Nature*, **401** 130 (1999).



11.63. Railway development in Europe, 1880

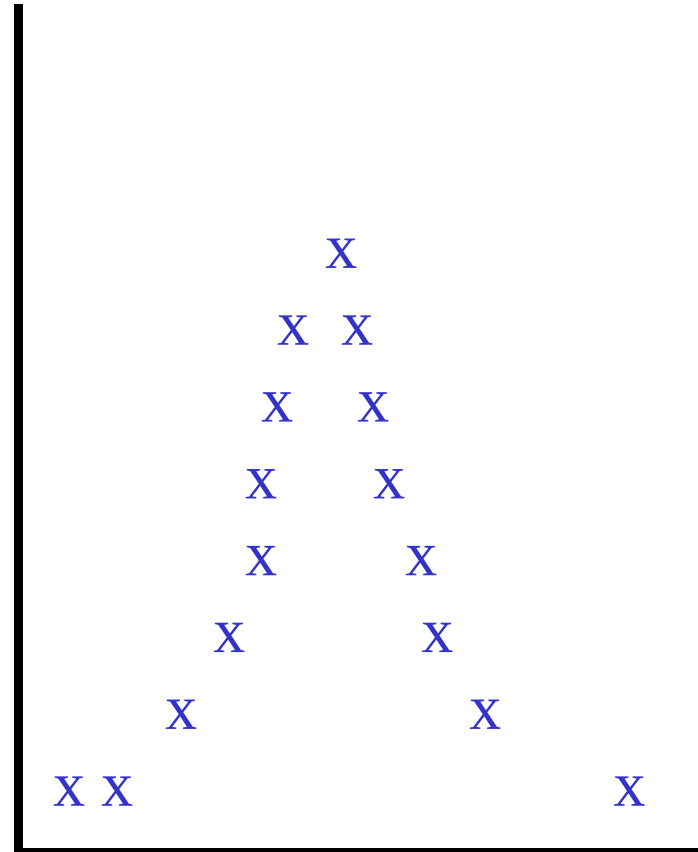


Nb noeuds



Scale free

**Nb liens
par noeud**



gaussien

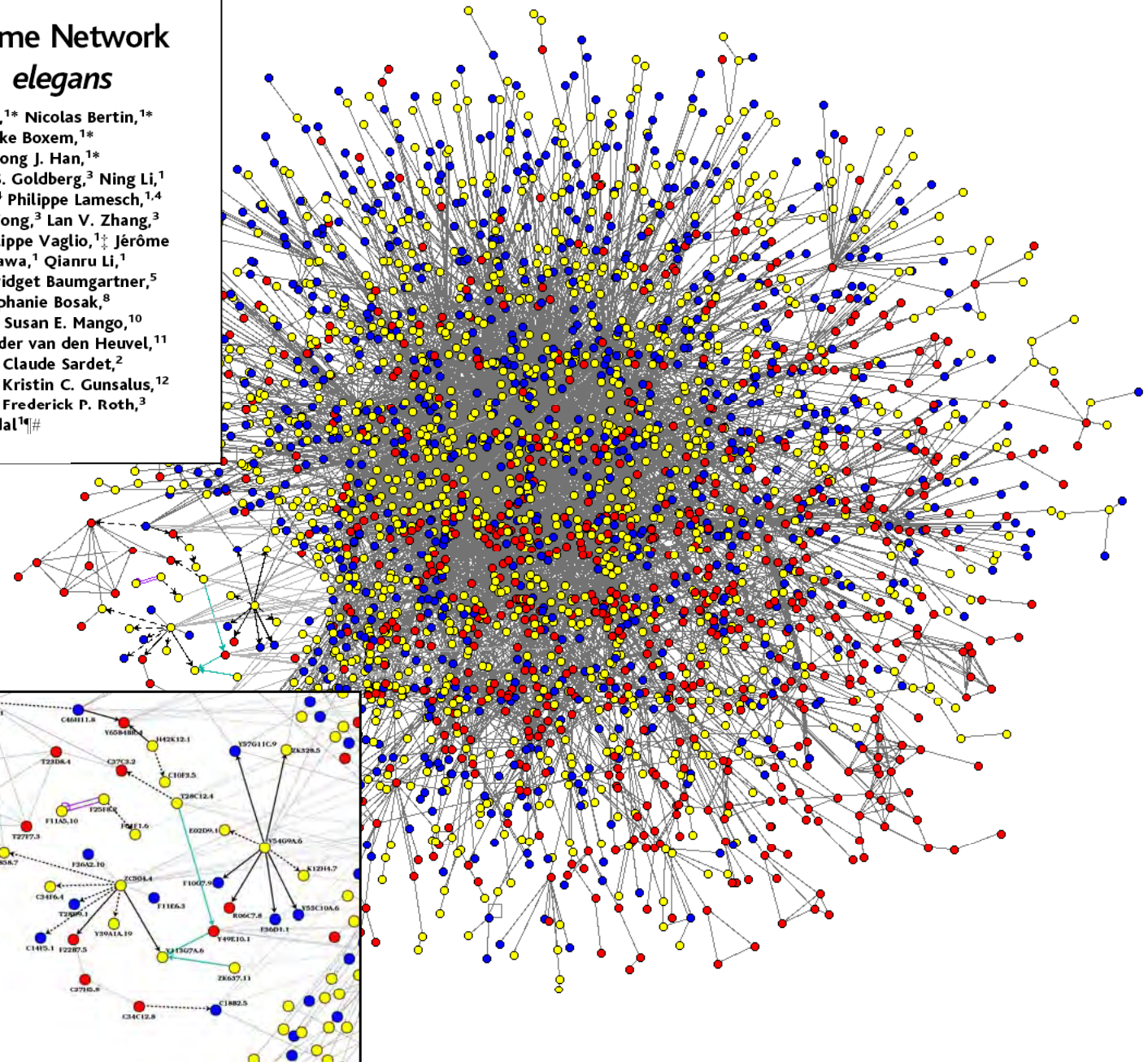
**Many real world networks have a
similar architecture:**

Scale-free networks

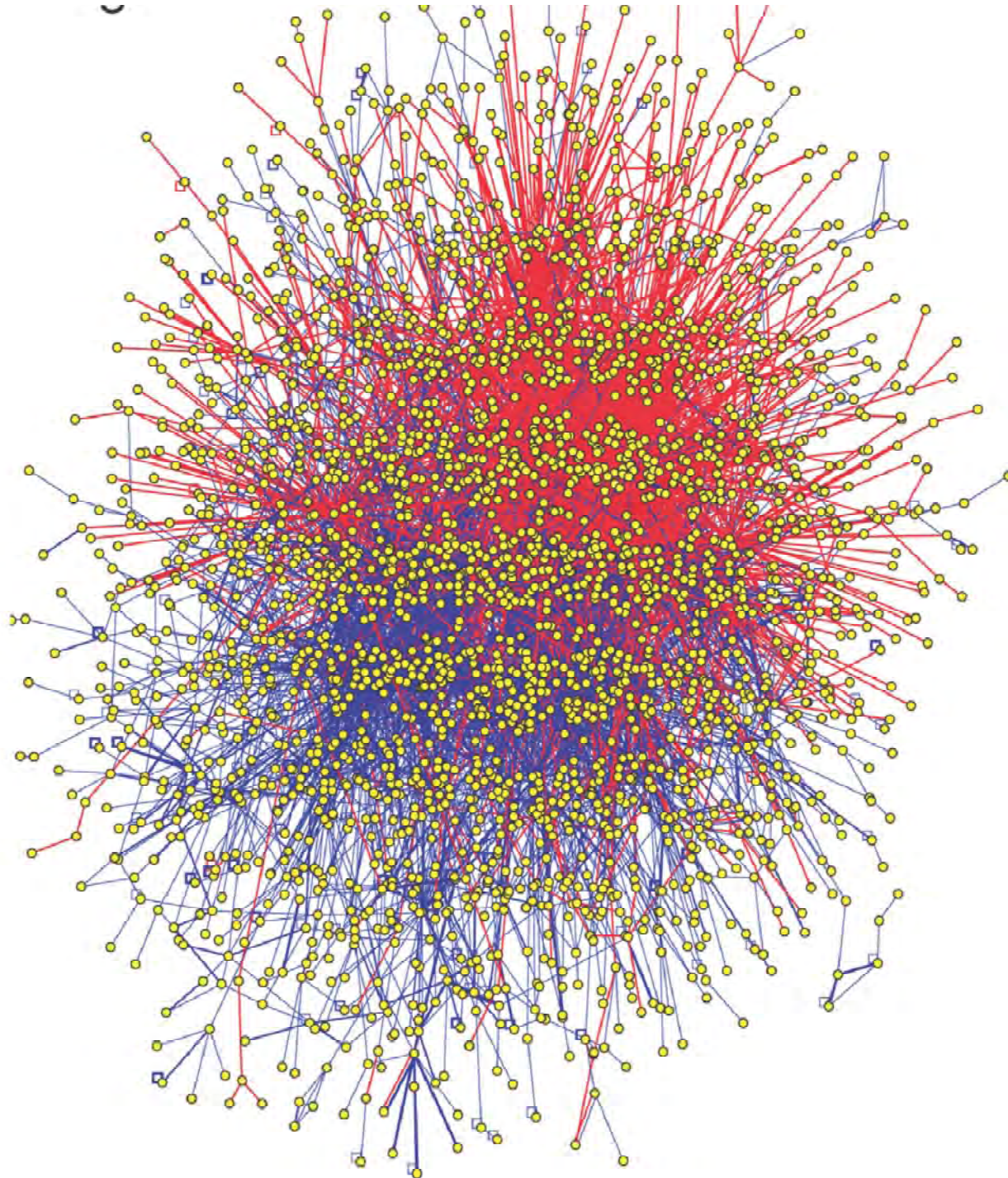
**WWW, Internet (routers and domains), electronic circuits,
computer software, movie actors, coauthorship networks,
sexual web, instant messaging, email web, citations, phone
calls, metabolic, protein interaction, protein domains, brain
function web, linguistic networks, comic book characters,
international trade, bank system, encryption trust net,
energy landscapes, earthquakes, astrophysical network...**

A Map of the Interactome Network of the Metazoan *C. elegans*

Siming Li,^{1*} Christopher M. Armstrong,^{1*} Nicolas Bertin,^{1*}
 Hui Ge,^{1*} Stuart Milstein,^{1*} Mike Boxem,^{1*}
 Pierre-Olivier Vidalain,^{1*} Jing-Dong J. Han,^{1*}
 Alban Chesneau,^{1,2*} Tong Hao,¹ Debra S. Goldberg,³ Ning Li,¹
 Monica Martinez,¹ Jean-François Rual,^{1,4} Philippe Lamesch,^{1,4}
 Lai Xu,^{5†} Muneesh Tewari,¹ Sharyl L. Wong,³ Lan V. Zhang,³
 Gabriel F. Berriz,³ Laurent Jacotot,^{1‡} Philippe Vaglio,^{1‡} Jérôme
 Reboul,^{1§} Tomoko Hirozane-Kishikawa,¹ Qianru Li,¹
 Harrison W. Gabel,¹ Ahmed Elewa,^{1||} Bridget Baumgartner,⁵
 Debra J. Rose,⁶ Haiyuan Yu,⁷ Stephanie Bosak,⁸
 Reynaldo Sequerra,⁸ Andrew Fraser,⁹ Susan E. Mango,¹⁰
 William M. Saxton,⁶ Susan Strome,⁶ Sander van den Heuvel,¹¹
 Fabio Piano,¹² Jean Vandenhaute,⁴ Claude Sardet,²
 Mark Gerstein,⁷ Lynn Doucette-Stamm,⁸ Kristin C. Gunsalus,¹²
 J. Wade Harper,^{5‡} Michael E. Cusick,¹ Frederick P. Roth,³
 David E. Hill,^{1¶} Marc Vidal^{1¶||#}



Version 1 of human interactome network map



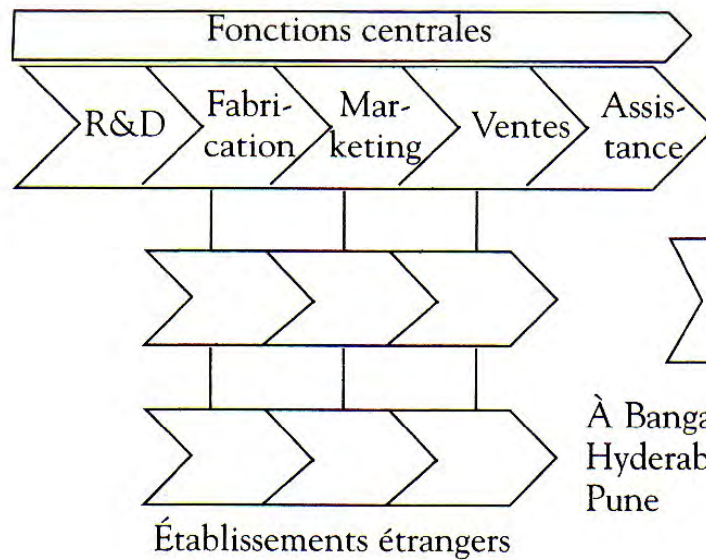
4.

L'organisation productive
du monolithe au nuage

de la discipline au contrôle

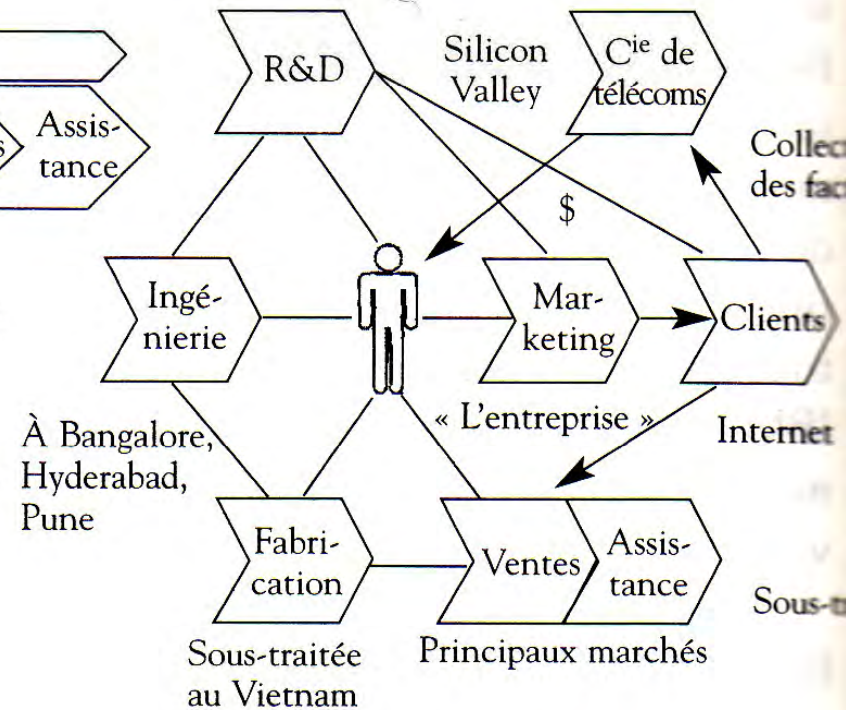
... migrer vers une entreprise en réseau

Une entreprise du 20^e siècle



Une organisation rigide, avec des liens capitalistiques, dite chaîne de valeur

Une entreprise du 21^e siècle



Des fonctions en réseau avec les commandes essentielles à portée de main

IBM crowd sourcing could see employed workforce shrink by three quarters

Louisa Peacock 23 April 2010 16:53

Multinational firms saddled with huge people costs are considering downsizing their permanent workforce and hiring sub-contractors on a scale never seen before - presenting an "enormous" management task for HR.

IT giant IBM told *Personnel Today* that the firm's global workforce of 399,000 permanent employees could reduce to 100,000 by 2017, the date by which the firm is due to complete its HR transformation programme.

Tim Ringo, head of IBM Human Capital Management, the consultancy arm of the IT conglomerate, said the firm would re-hire the workers as contractors for specific projects as and when necessary, a concept dubbed 'crowd sourcing'.

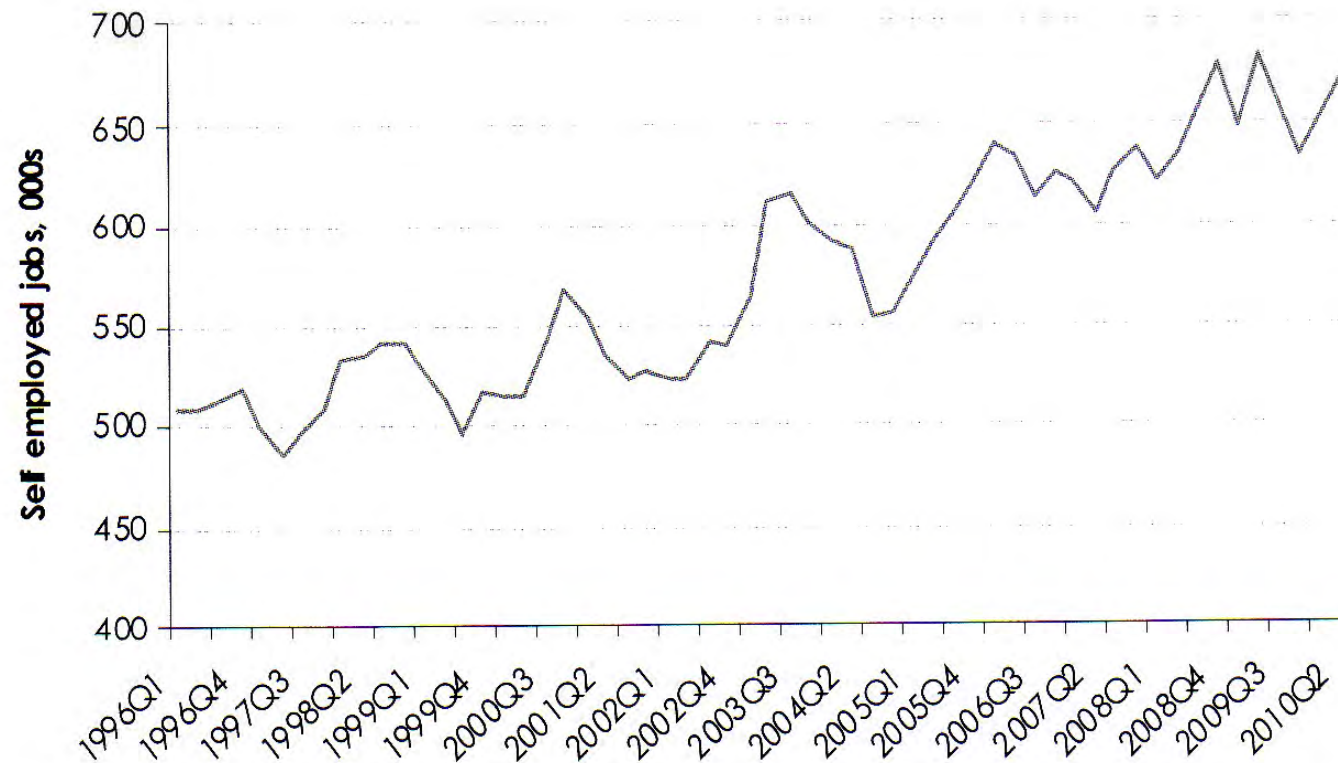
"There would be no buildings costs, no pensions and no healthcare costs, making huge savings," he said.

Outsourcing experts said employers from both the private and public sector were increasingly using the model as they looked to squeeze people costs post-recession.

What is crowd sourcing?

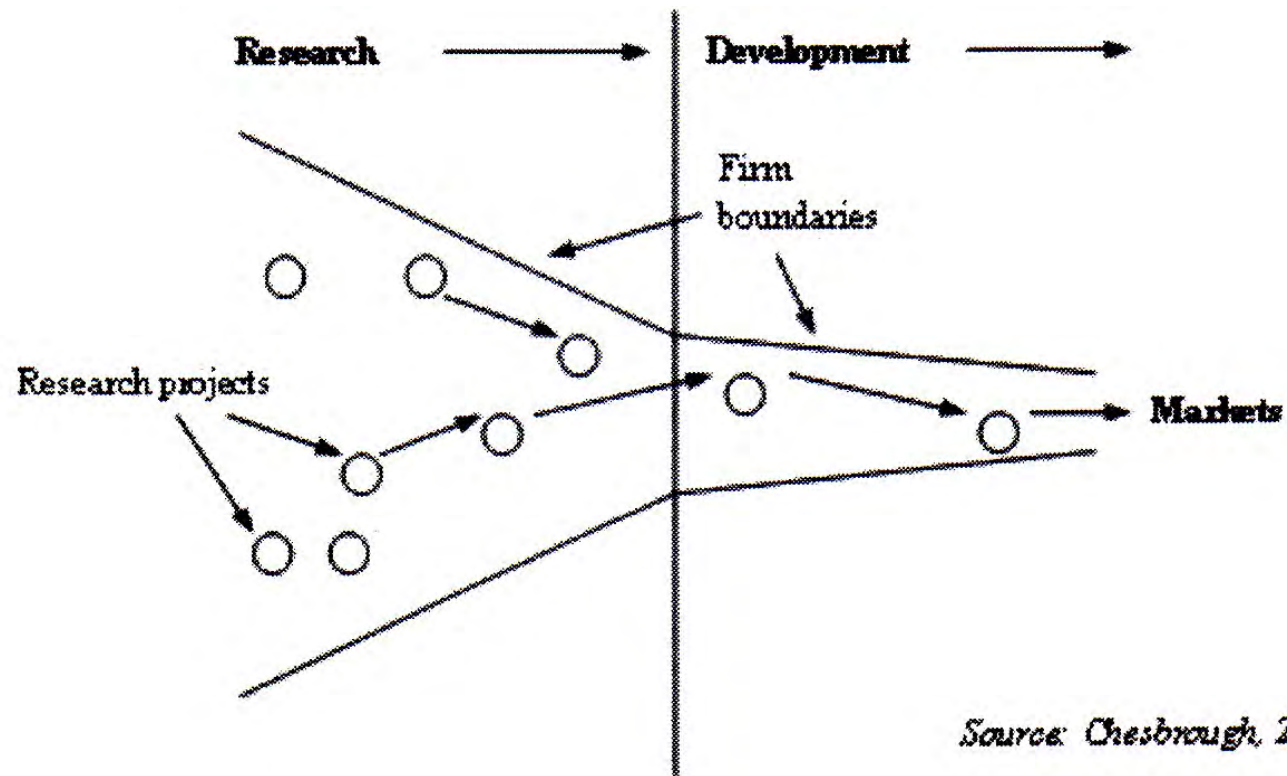
Crowd sourcing is the act of taking a job traditionally performed by an employee and outsourcing it to an undefined group of people on a project-by-project basis, in the form of an open call.

Chart 2.11: Self employed jobs, London, 1996Q1 – 2010Q2



Source: ONS

Note: Figures are seasonally adjusted



Source: Chesbrough, 2003

Figure 1 Closed innovation

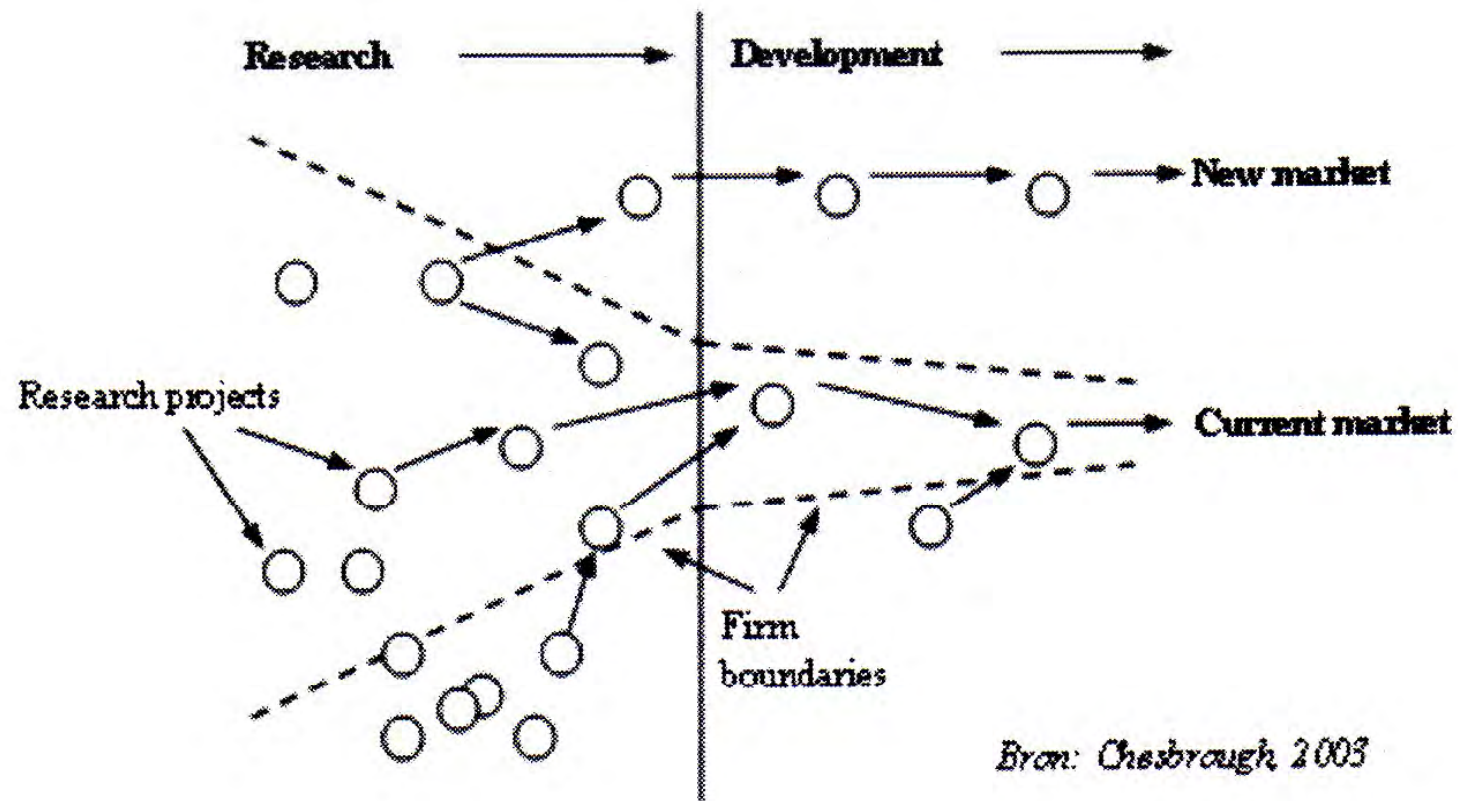


Figure 2 Open innovation

135,000+ Solvers | 175 Countries | 40 Industry Disciplines and C

Welcome to InnoCentive!

Join the InnoCentive Open Innovation community to solve some of the toughest problems facing the world today. Win cash awards of up to \$1,000,000 for your creative solutions to Challenges in:

- Business and Entrepreneurship
- Chemistry
- Engineering and Design
- Life Sciences
- Math and Computer Science
- Physical Sciences

Our Open Innovation Marketplace Challenges are posted by Seekers (corporations, government agencies, and nonprofit organizations) who are looking for your help with product development and other business and science problems. Each Challenge has a significant cash award associated with it. If your solution is chosen – you win!

Join now to become an InnoCentive Solver - your solution today could contribute to the breakthrough inventions of tomorrow.

Search: HITS



Complete simple tasks that people do better than computers. And, get paid for it. [Learn more.](#)

Choose from thousands of tasks, control when you work, and decide how much you earn.

If you are a software developer and would like to learn more about using Amazon Mechanical Turk APIs, [click here.](#)

Get Started Now

☐ Step 1 - Find - Find HITs to work on

What is a HIT?

HIT stands for Human Intelligence Task. These are tasks that people are willing to pay you to complete. For example a HIT might ask: "Is there a pizza parlour in this photograph?" Typically these tasks are extraordinarily difficult for computers, but simple for humans to answer.

How do I find HITs to work on?

Just click the "Get Started Now" button to browse thousands of available HITs, without any obligation.

☐ Step 2 - Finish - Work & submit your HIT

How do I work on a HIT?

Once you have chosen a HIT to complete, click the "Accept HIT" button to have it assigned to you.

Follow the instructions on how to complete the HIT and when you are done, click the "Submit" button to save your answer.

☐ Step 3 - Earn - Get paid for your work

How do I get paid?

You are paid when your answer is approved by the person that listed the HIT.

The money you earn is deposited into your Amazon.com account, where you can turn it into cash at any time by transferring it to your personal checking account.

Choose from thousands of tasks, control when you work, and decide how much you earn.

If you are a software developer and would like to learn more about using Amazon Mechanical Turk APIs, [click here](#).

Get Started Now 

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Get Started Now 

[About](#) | [Contact Us](#) | [Developers](#) | [Press](#) | [Privacy Notice](#) | [Conditions of Use](#)

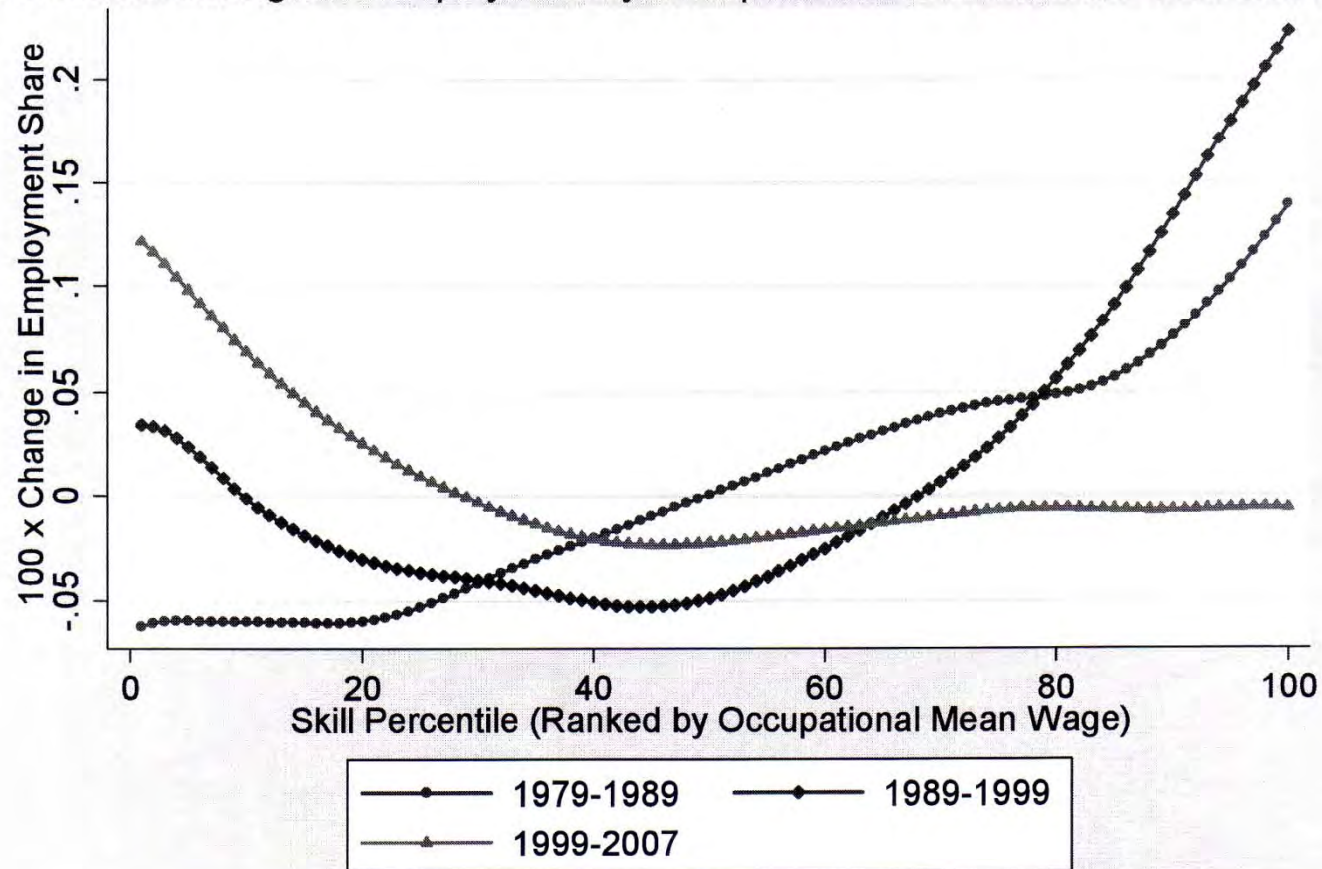
[Please provide us feedback](#)

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An **amazon.com** company

Figure 10

Smoothed Changes in Employment by Occupational Skill Percentile 1979-2007

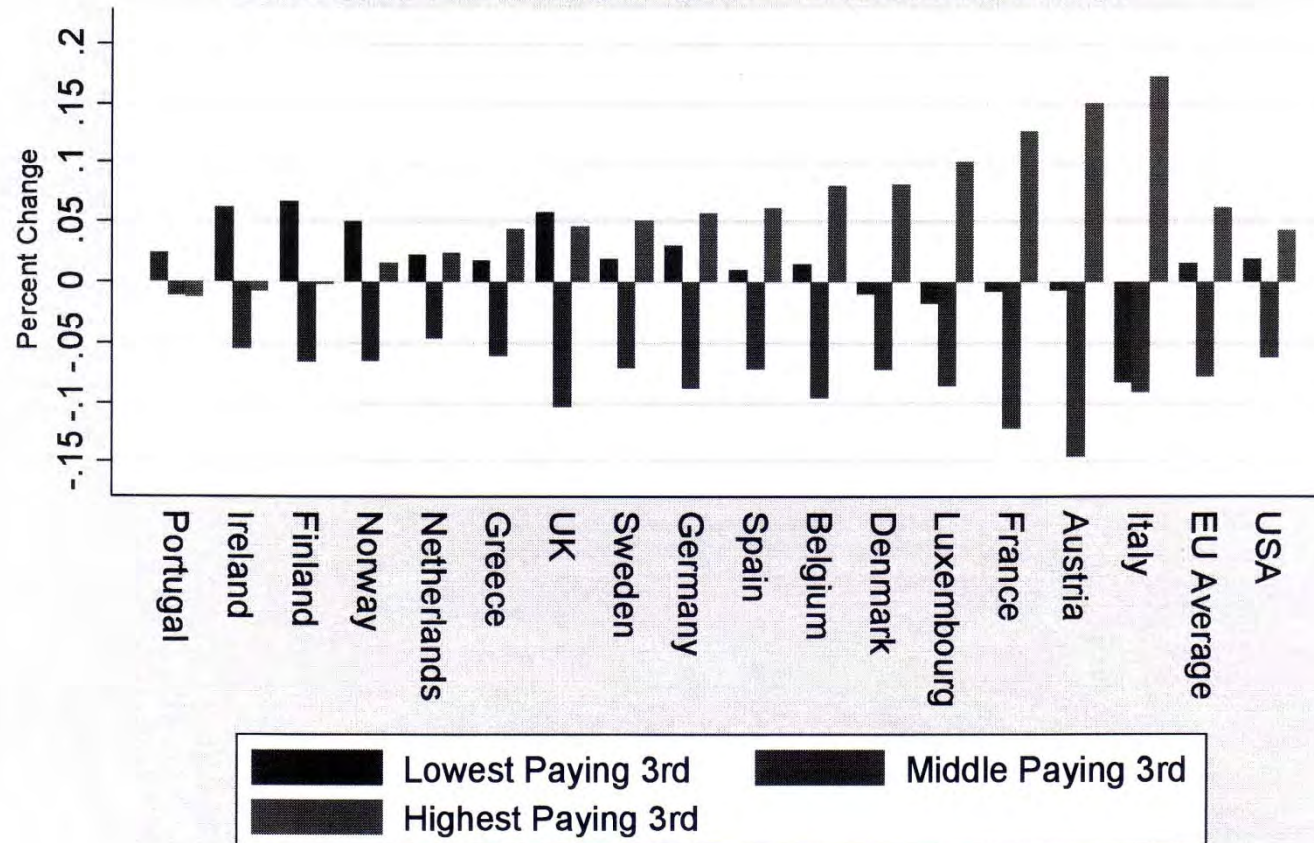


Source: Census IPUMS 5 percent samples for years 1980, 1990, and 2000, and Census American Community Survey for 2008. All occupation and earnings measures in these samples refer to prior year's employment. The figure plots log changes in employment shares by 1980 occupational skill percentile rank using a locally weighted smoothing regression (bandwidth 0.8 with 100 observations), where skill percentiles are measured as the employment-weighted percentile rank of an occupation's mean log wage in the Census IPUMS 1980 5 percent extract. Mean education in each occupation is calculated using workers' hours of annual labor supply times the Census sampling weights. Consistent occupation codes for Census years 1980, 1990, and 2000, and 2008 are from Autor and Dorn (2009a).

Autor, Acemoglu, 2010

Figure 11

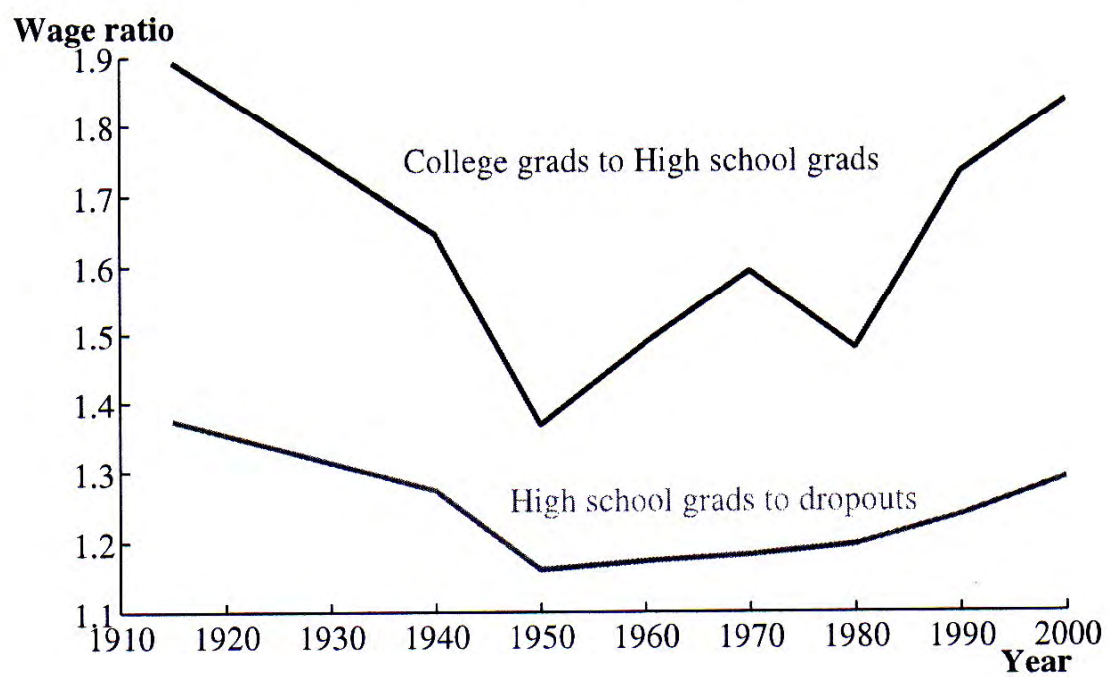
Change in Employment Shares by Occupation 1993-2006 in 16 European Countries
Occupations Grouped by Wage Tercile: Low, Middle, High



Source: Data on EU employment are from from Goos, Manning and Salomons, 2009a. US data are from the May/ORG CPS files for earnings years 1993-2006. The data include all persons ages 16-64 who reported having worked last year, excluding those employed by the military and in agricultural occupations. Occupations are first converted from their respective scheme into 326 occupation groups consistent over the given time period. These occupations are then grouped into three broad categories by wage level.

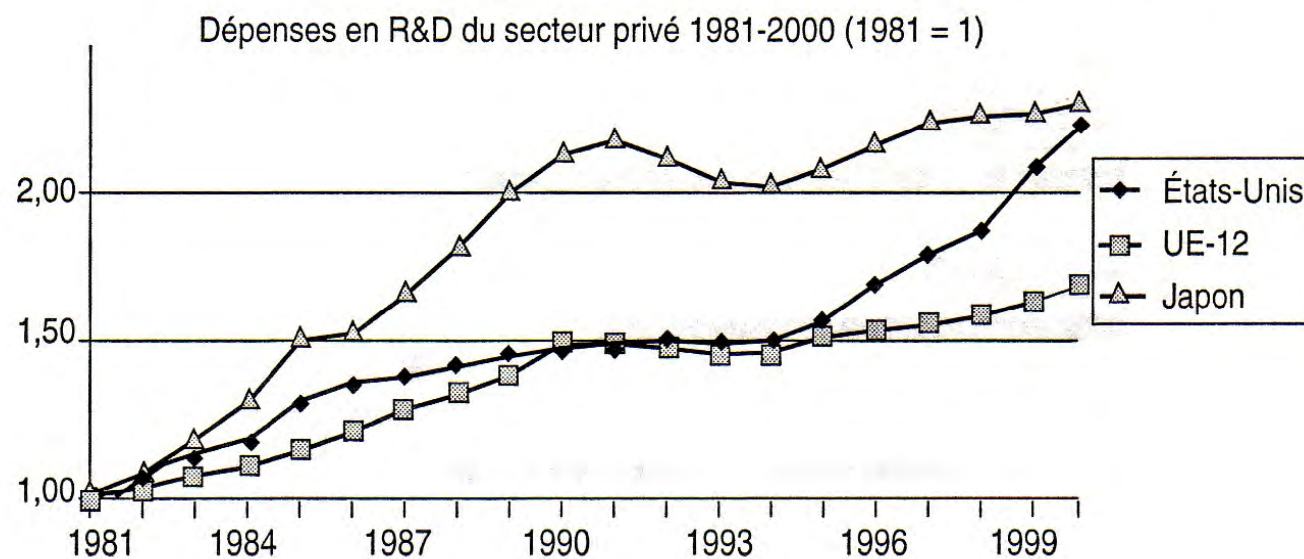
Autor, Acemoglu, 2010

Figure 6: The U.S. College and High School Wage Premiums



Source: Goldin and Katz (2008), Table D1.

**Figure 7 : Les évolutions de la R & D (en dollars constants de 1990)
pour les États-Unis, l'Union européenne et le Japon**



6.

économie des choses vs économie
des idées

la non-rivalité

Economists devote too much attention to international flows of services and goods and not enough to international flows of ideas. Traditional trade flows are an imperfect substitute for flows of the underlying ideas.

Paul Romer

(Which Parts of Globalization Matter for Catch-up Growth, NBER WP 15755)

Ideas, institutions, population and human capital are now at the center of growth theory. Physical capital has been pushed to the periphery

Charles Jones, Paul Romer

(The New Kaldor Facts, NBER WP 15094)



"Your proposal is innovative. Unfortunately, we won't be able to use it because we've never tried something like this before."

Zeichnung: Aaron Bacall



*Glückwünsche der »Stadt der
Wissenschaft« Heidelberg für ihre
Universität, Oktober 2007*

Massachusettch? Massasusettschs? Massachusetts? Sagen Sie einfach Karlsruhe.

Am 1. Oktober eröffnet das Karlsruher Institut für Technologie.

Willkommen im Bundesland der unbegrenzten Möglichkeiten. Denn nirgendwo in Deutschland wird so viel in Forschung und Entwicklung investiert wie in Baden-Württemberg. Unsere neueste wissenschaftspolitische Innovation: das Karlsruher Institut für Technologie, kurz KIT. Das ist so etwas Ähnliches wie diese Hochschule in Amerika, das Massachusetts Institute of Technology (MIT). Nur nicht ganz so weit weg und nicht ganz so kompliziert auszusprechen. Dafür aber genauso gut. Denn mit dem KIT haben die Exzellenz-Universität Karlsruhe

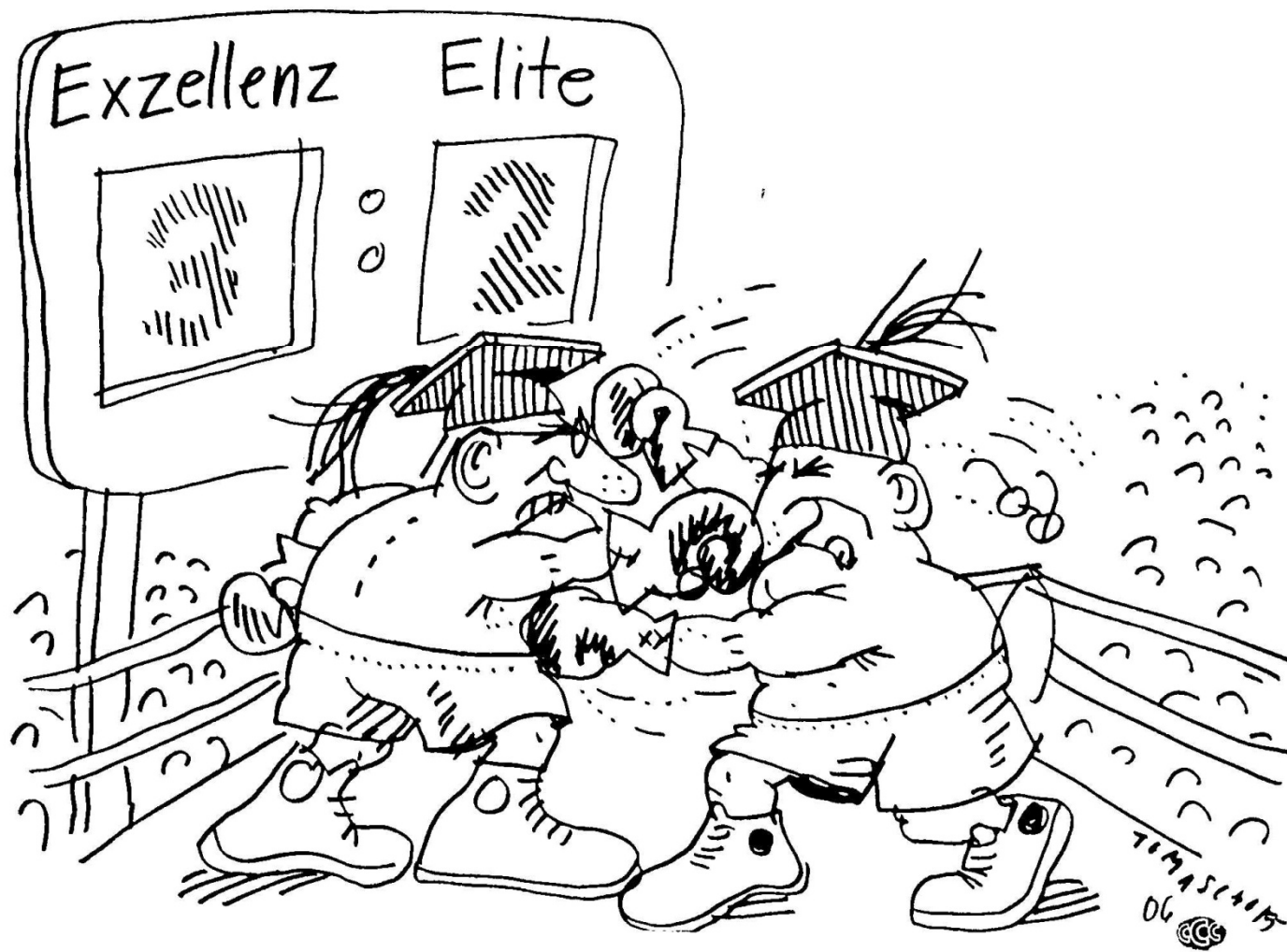
und eine der erfolgreichsten Großforschungseinrichtungen Europas, das Forschungszentrum Karlsruhe, ihre Stärken gebündelt. Das Ergebnis ist eine Einrichtung, die Forschung und Lehre auf innovative Weise miteinander vernetzt. Ziel ist es, schon bald zu den weltweit führenden Wissenschaftseinrichtungen zu gehören. Nicht unmöglich – bei einem Jahresbudget von 700 Millionen Euro und 8000 Mitarbeitern. Aber unmöglich ist bei uns ja sowieso fast nichts. Also, forschen Sie mit unter www.kit.edu oder www.baden-wuerttemberg.de



*Publicité pour la création
du*

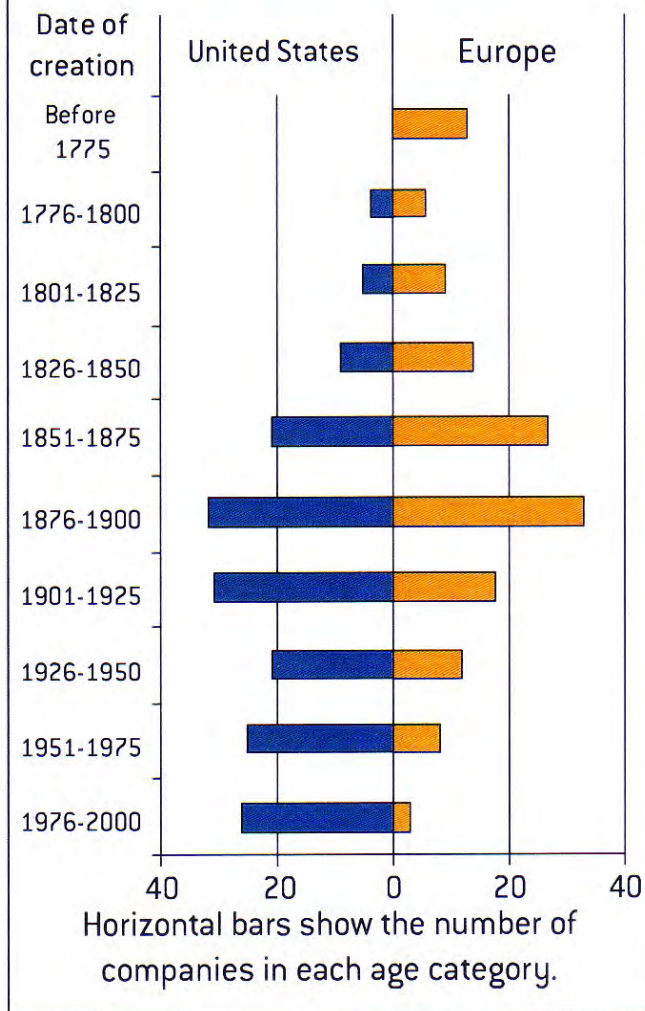
*Karlsruher Institut für
Technologie (KIT),
Oktober 2009*

uni Karlsruhe + KFZ



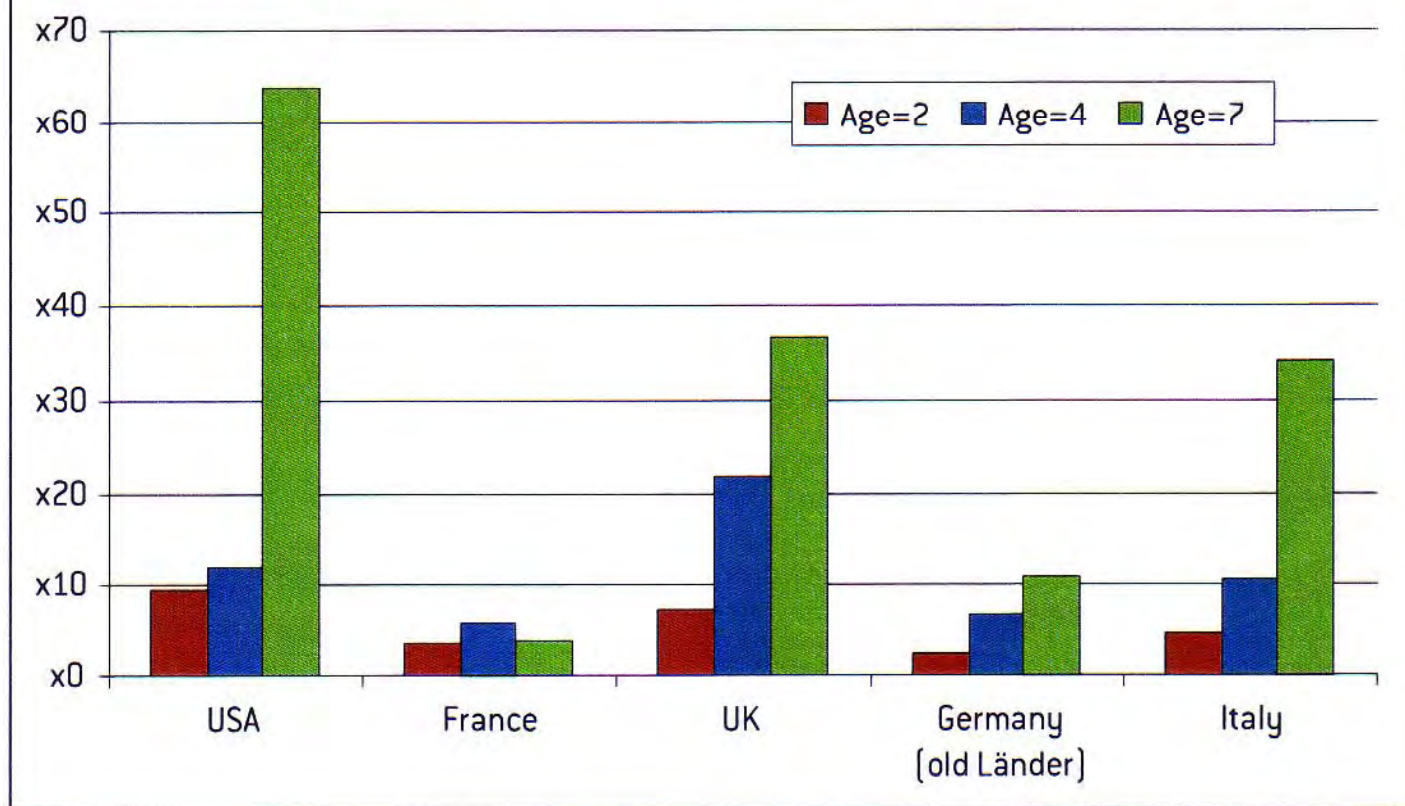
Zeichnung: Jan
Tomaschoff

Fig 1: 'Population pyramid' for largest US/European companies



Source: Bruegel, based on FT Global 500 ranking of the world's largest listed companies, 30 September 2007.

Figure 4: Average growth of successful firms, selected countries, 1980-2000

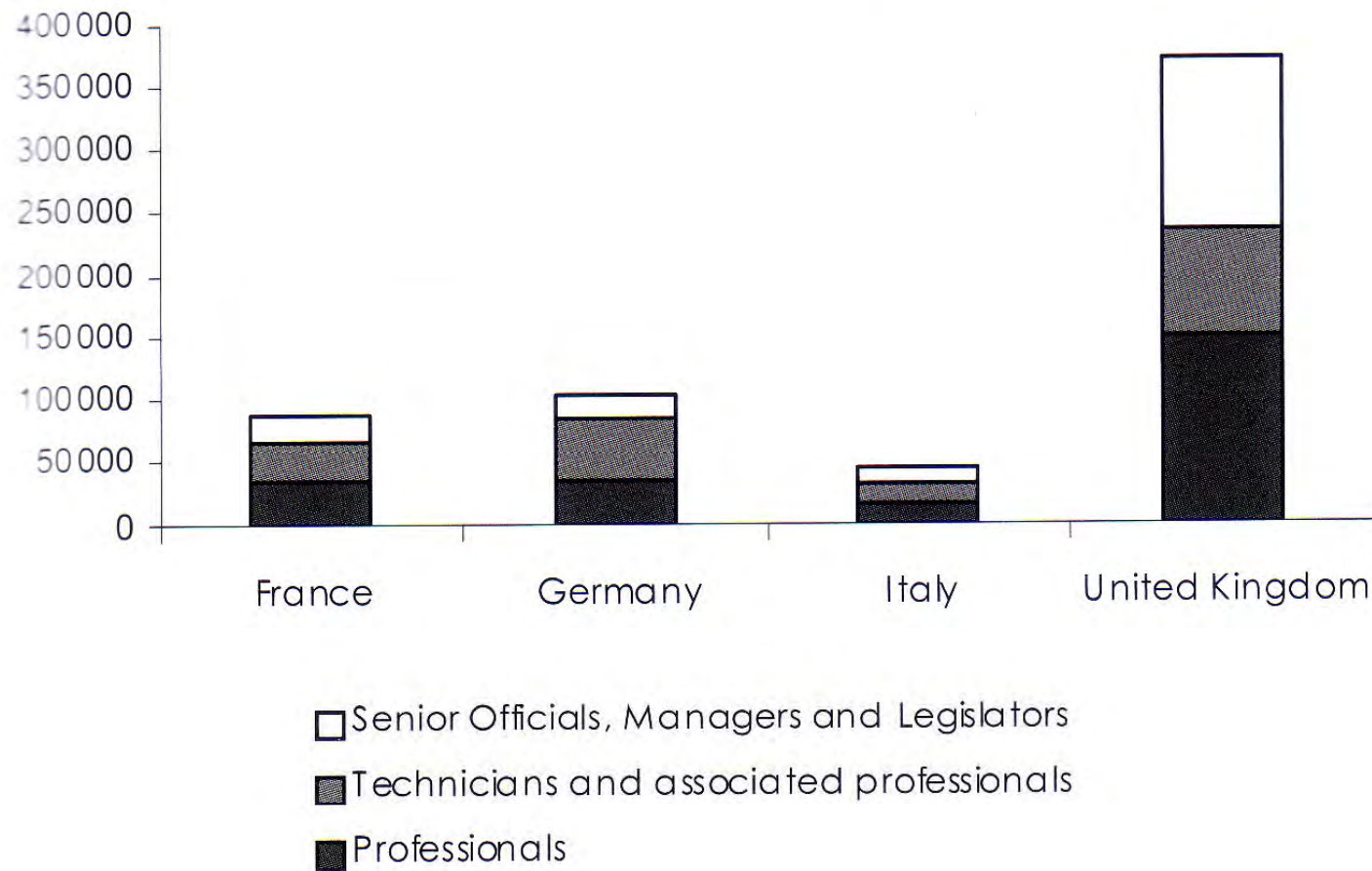


The bars represent average firm size relative to size at creation. Source: Eric Bartelsman, John Haltiwanger and Stefano Scarpetta, "Microeconomic Evidence of Creative Destruction in Industrial and Developing Countries", IZA Discussion paper No 1374, 2004. N.B. Methodologies may differ from one country to another as regards the definition of size at creation.

7.

Mobilité des hommes
vs mobilités des capitaux

Chart 3.3: Asian and North American Highly Skilled Workers in Europe



Source: OECD

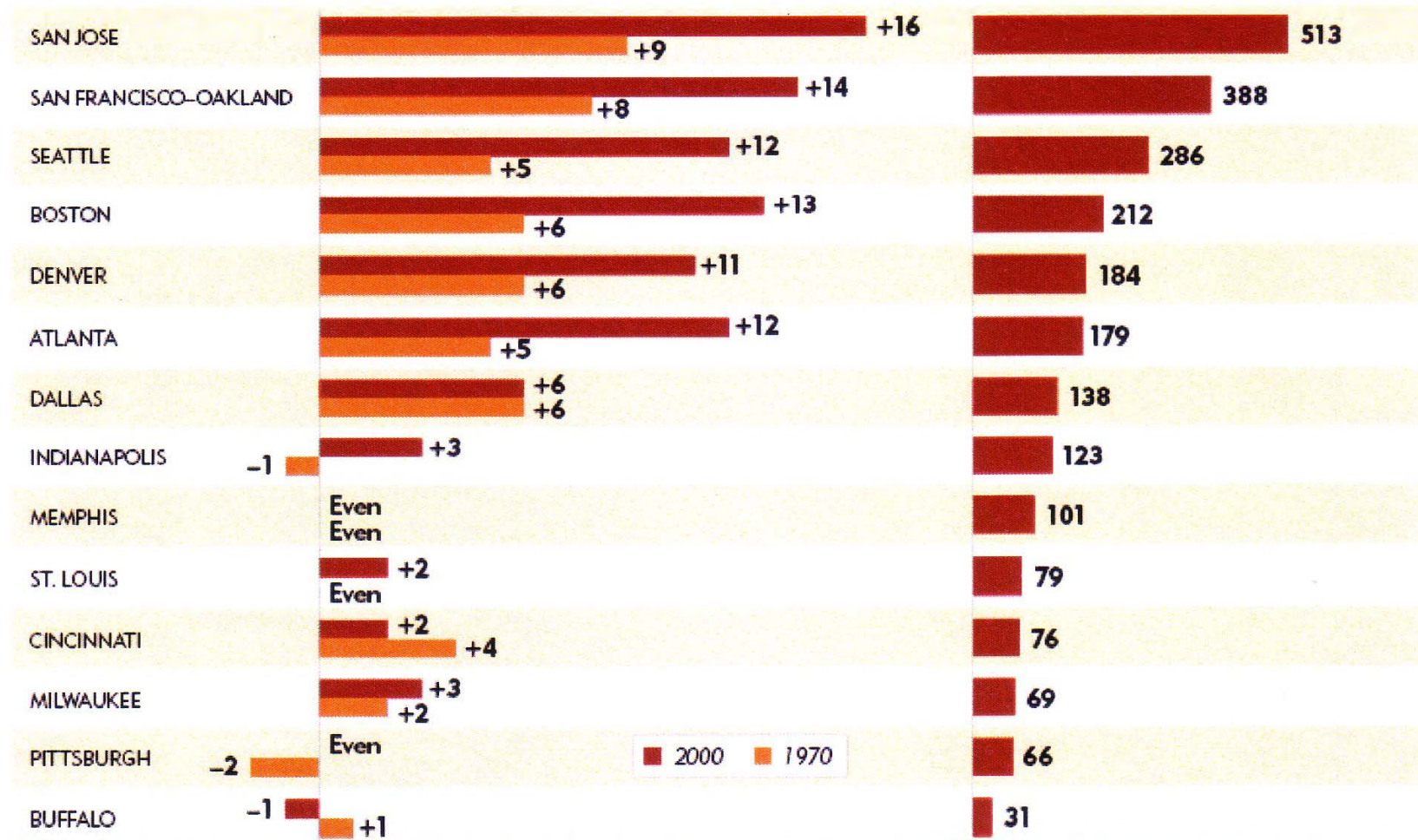
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THE UNEVEN FORTUNES OF AMERICA'S CITIES

Number of college graduates per 100 people,
relative to the national average

Percent change in mean housing values,
1950–2000



Education figures based on 1970 Standard Metropolitan Statistical Area (MSA) definitions; housing values based on 1990 Primary MSA definitions.

8. De la société industrielle à la société hyperindustrielle de service

« économie de fonctionnalités »

Économie de fonctionnalité = substitution de la vente de la fonction d 'usage d 'un bien à la vente du bien lui-même

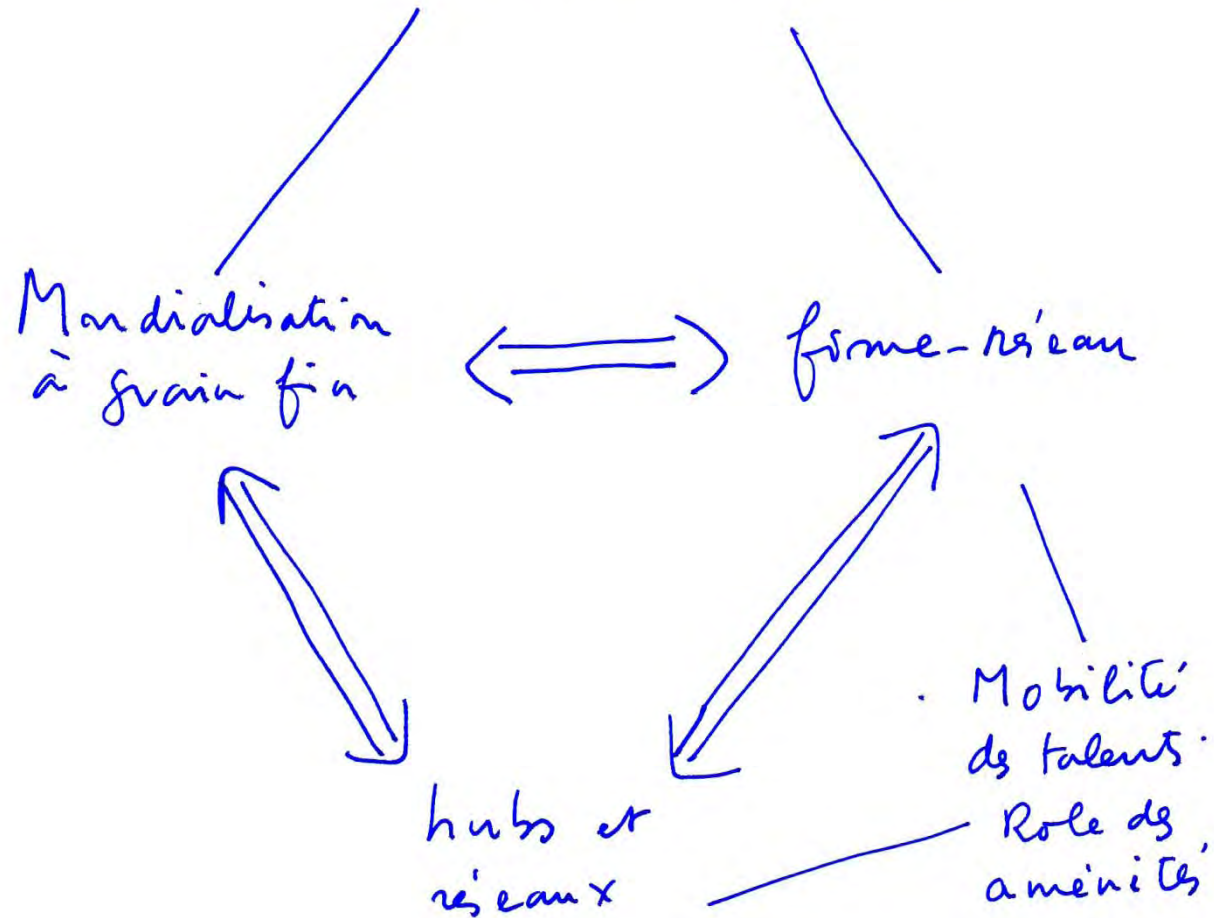
en B to B ou en B to C

gain environnemental : rentabilité dépend du taux d 'utilisation

ex carsharing *Mobility vs location classique ou vente*

Dominique Bourg

Bascullement
vers le Sud et l'Est



Les territoires

- 1) incertitude structurelle et durable
- 2) la compétition hors coûts mobilisant les ressources territoriales : après les districts italiens, le mystère allemand...
- 3) la compétition productive passe de + en + par la consommation, la qualité de vie, les aménités
- 4) les fonctionnalités urbaines comme substitut des infrastructures de la firme ?

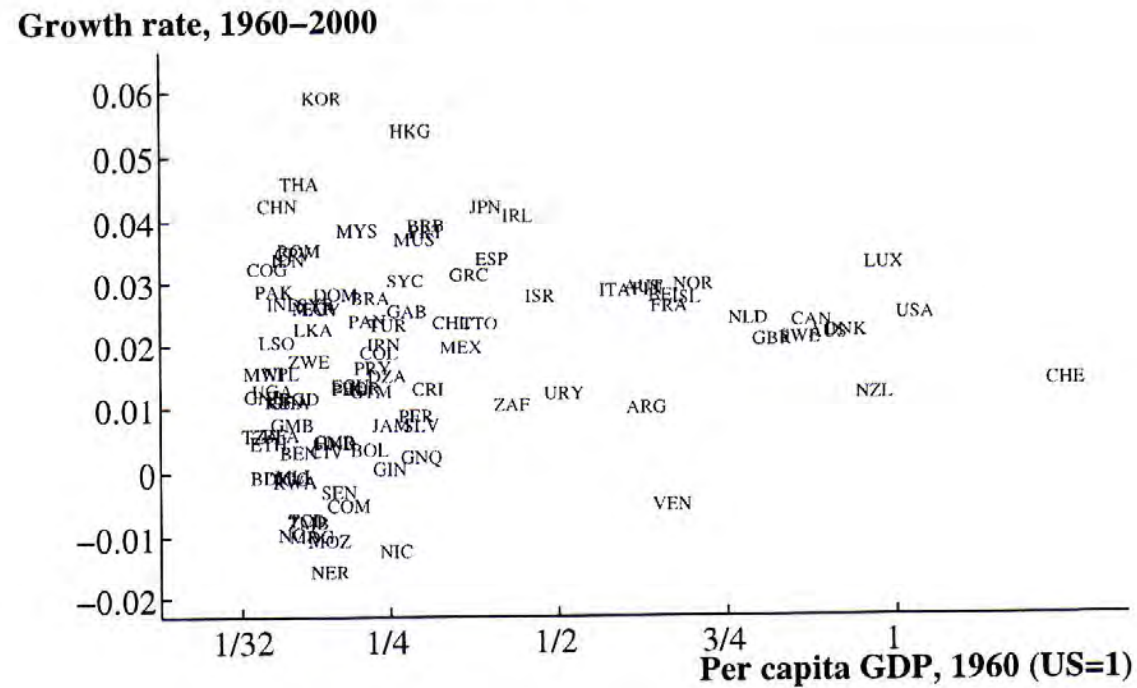
De la compétition surenchère (attirer des ressources banalisées dans l'économie des biens et services packagés)

à la compétition par les biens-services territorialisés (faire du territoire un laboratoire de création de ressources nouvelles dans l'économie des fonctionnalités).

Les villes et les territoires comme moteurs d'une éco-économie renouvelée

la « shared value » comme nouvel horizon ?

Figure 3: Growth Variation and Distance from the Frontier

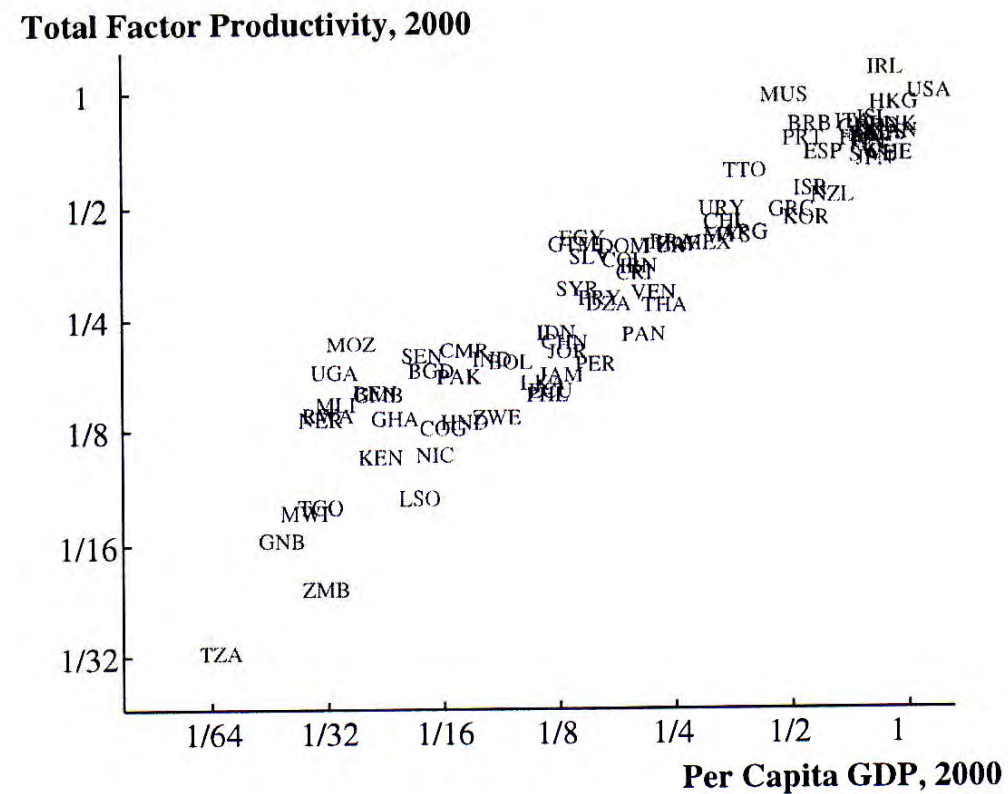


Source: Penn World Tables 6.1.

Fact 3: Variation in modern growth rates.

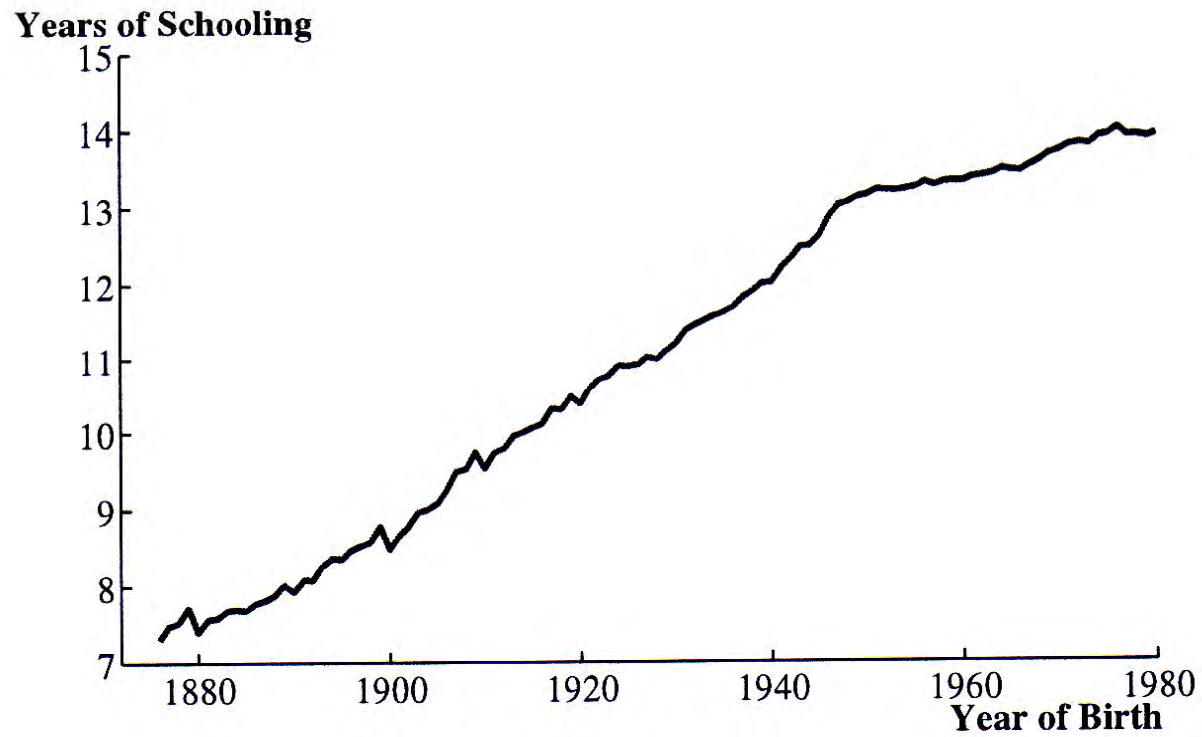
The variation in the rate of growth of per capita GDP increases with the distance from the technology frontier.⁹

Figure 4: Large Income and TFP Differences



CHARLES I. JONES AND PAUL M. ROMER

Figure 5: Years of Schooling by Birth Cohort, United States

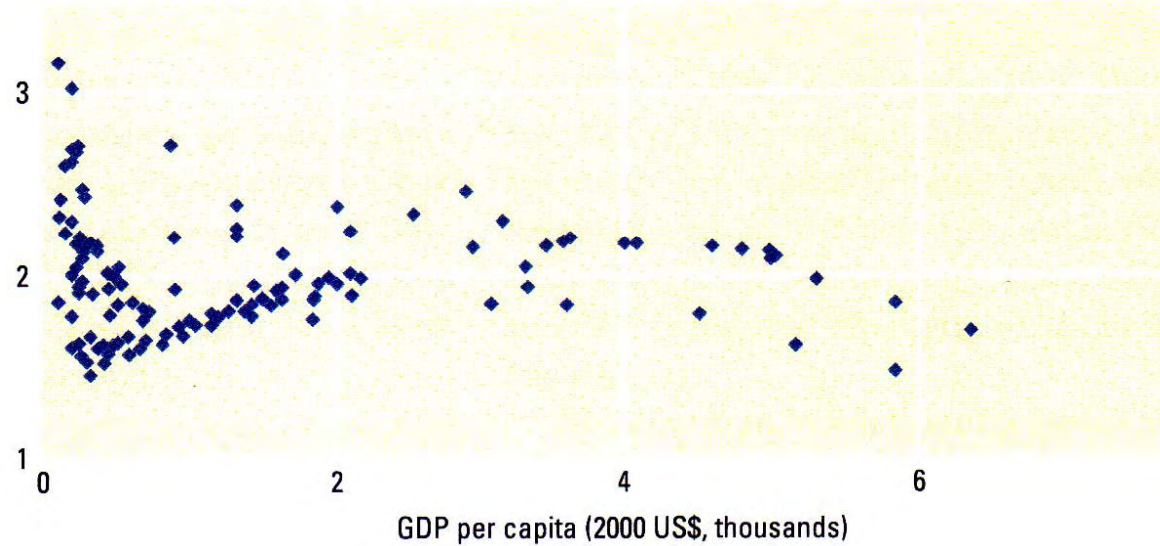


Source: Goldin and Katz (2007), Figure 7.

Journal

a. Locally, first divergence, then convergence, in rural-urban gaps

Ratio of urban to rural per capita consumption



b. Nationally, divergence, then convergence, in incomes between leading and lagging areas

Coefficient of variation of regional wages or income

