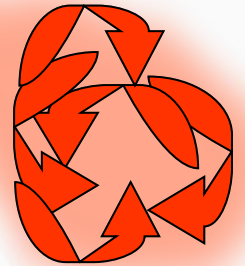
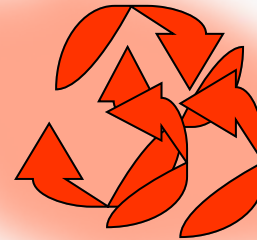
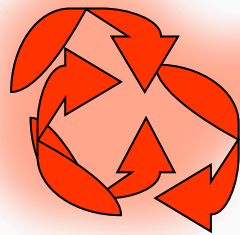


**Weak signals,
harsh impacts**



Weak signals, harsh impacts



Slowly changing systems



driven faster

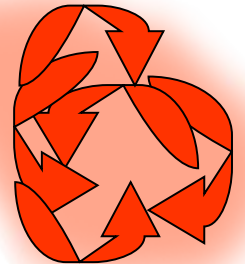
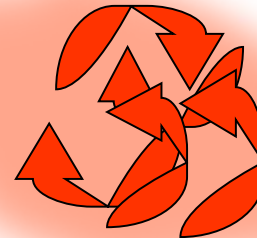
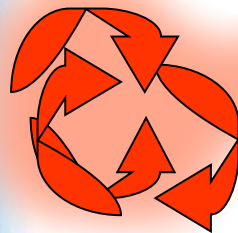
Isolated systems



connected together



Weak signals, harsh impacts



Slowly changing systems



driven faster

Isolated systems



connected together

New connections need new institutions to police them
Change impacts the natural world, societies and institutions
The surface vector of change is commerce
Commerce embroiled in political, social and security issues

However, some caveats...



Weak signals, harsh impacts

- The great systems change relatively slowly

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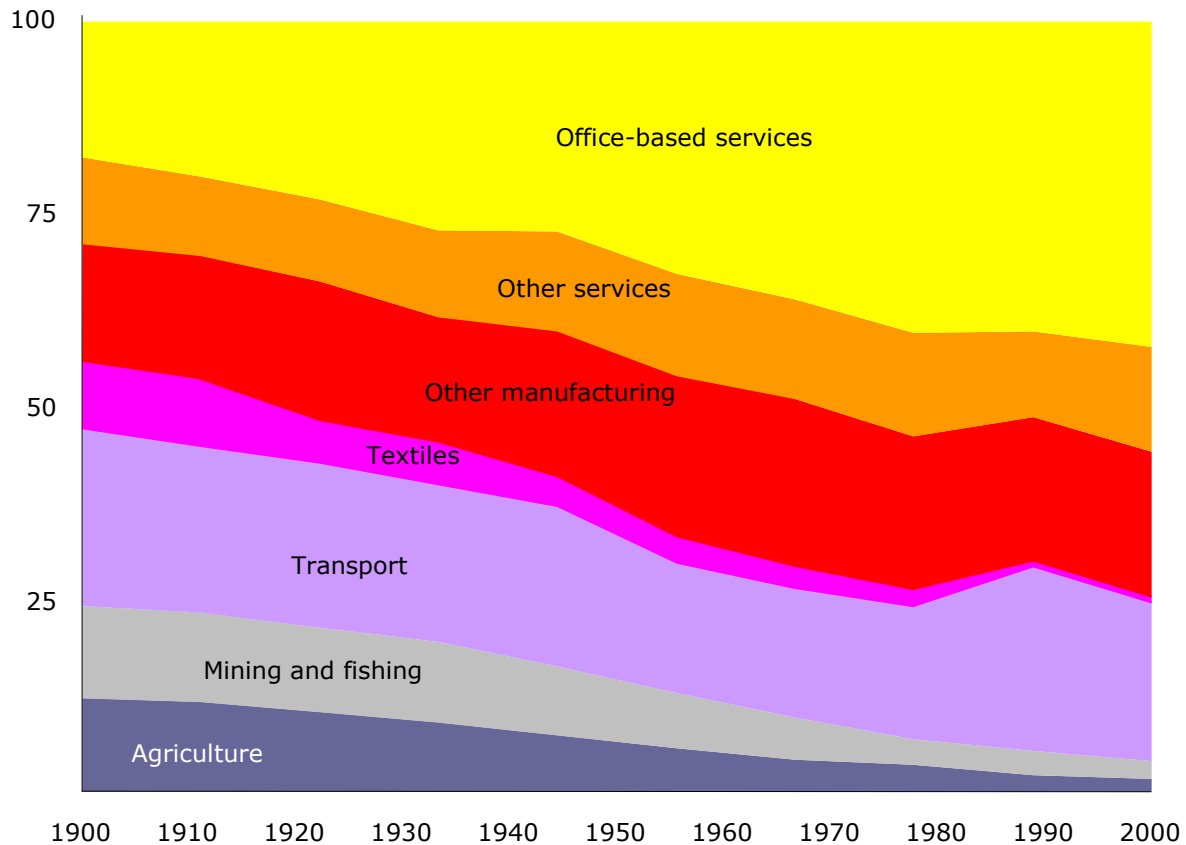
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Weak signals, harsh impacts

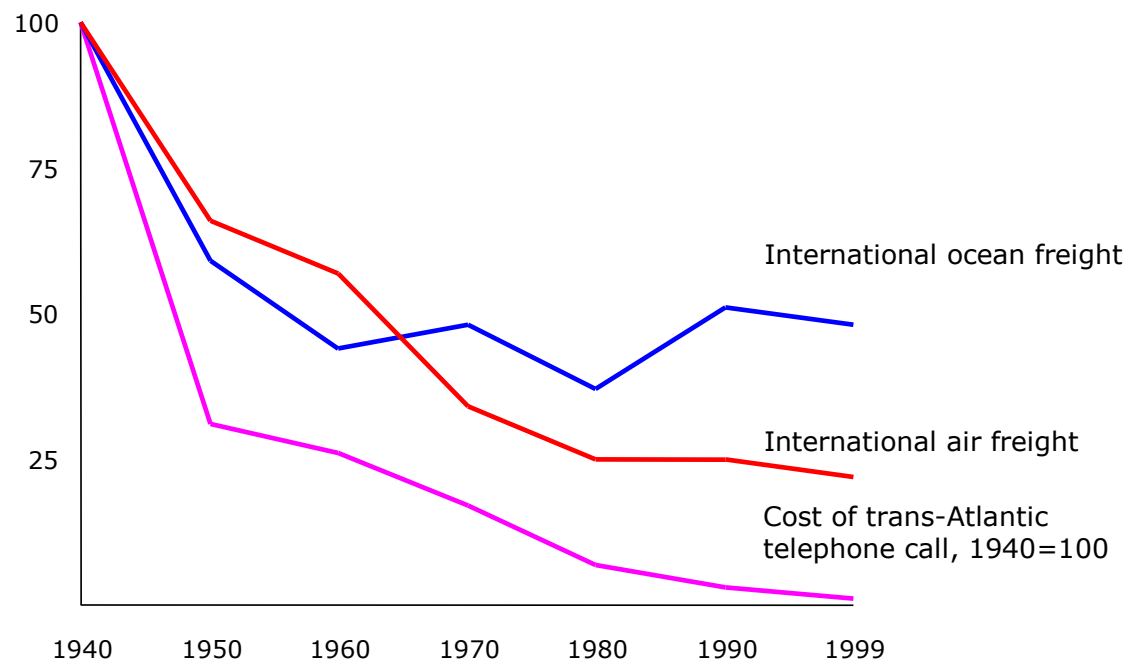
- The great systems change relatively slowly

Sector share in UK employment, 1901-2001



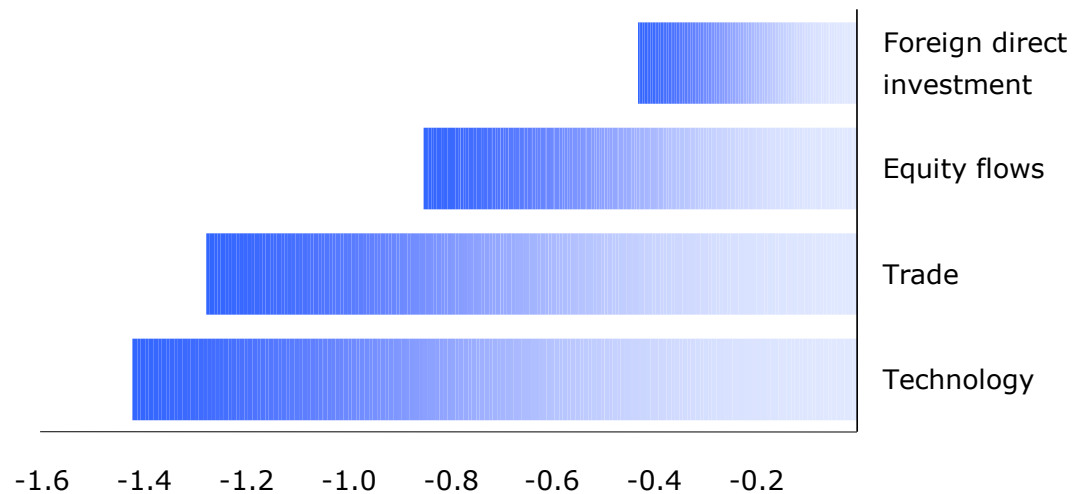
Weak signals, harsh impacts

- The great systems change relatively slowly
- Hitherto separate systems are being brought together



Weak signals, harsh impacts

- The great systems change relatively slowly
- Hitherto separate systems are being brought together



The elasticity of activity with respect to distance between the actors

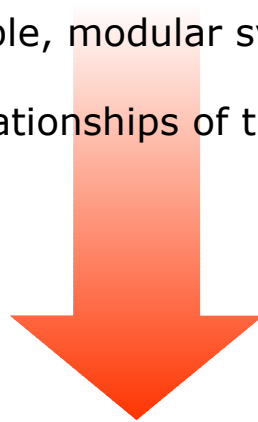




Knowledge-intensive products based in a complex and flexible infrastructure

Scalable, modular systems

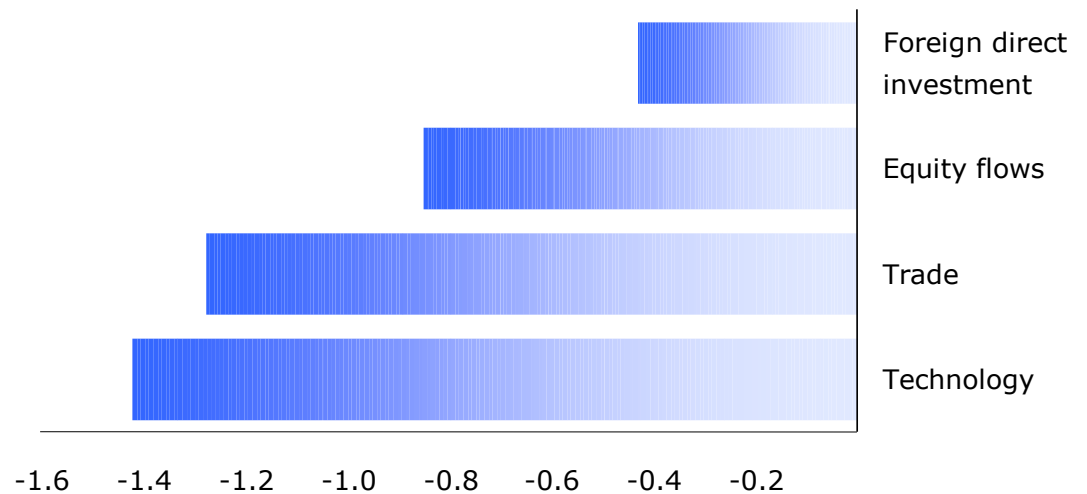
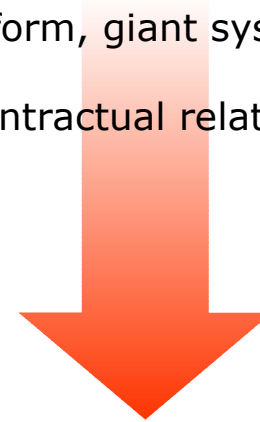
Relationships of trust



Tightly specified, exactly-defined products and services

Uniform, giant systems

Contractual relations

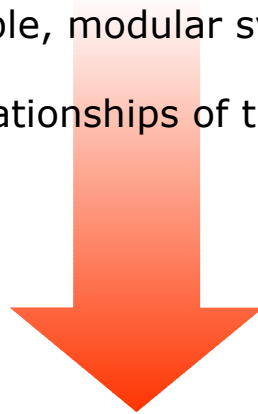


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Knowledge-intensive products based in a complex and flexible infrastructure

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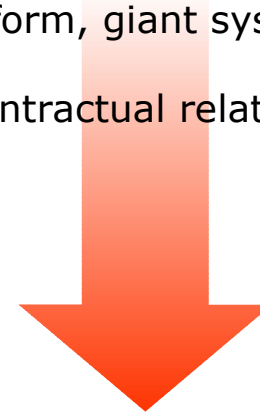


Clusters and networks

Tightly specified, exactly-defined products and services

Uniform, giant systems

Contractual relations



Risk, cost and necessity

- 80% of US car maker's suppliers operate within 12 hours of the main plant.
- Toyota's US suppliers 7 times closer than GM's; its working capital is 25% that of GM, its non-wage costs 80% of GM.
- Geographical cohesion has increased since 1980 in 37 of 40 industries studies.

So what *is* coming together?

Standards

Best practice

Scalable activities

Asset allocation

Consumer advocacy

Ideas

Scrutiny

Regulatory frameworks





Shareholder pressure

Regulatory change

Consumer cynicism

Technology

CI and cost management skills

More people, better people

Accelerated commoditisation

So what *is* coming together?

Standards

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Regulatory frameworks

Traditional societies

Established social balances

Established institutions

New institutions

Shareholder pressure **Regulatory change**

Consumer cynicism **Technology**

CI and cost management

More people, better people

Accelerated commoditisation

Commercial convergence in the industrial world

So what *is* coming together?

Standards

Best practice

Scalable activities

Asset allocation

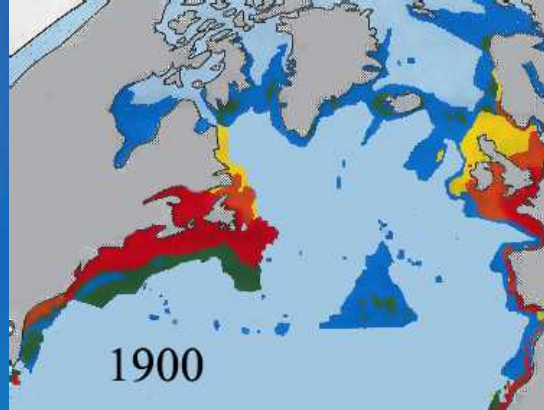
Consumer advocacy

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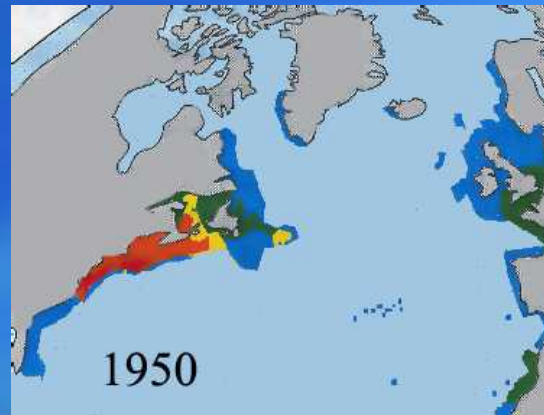
Regulatory frameworks

*Traditional
societies*



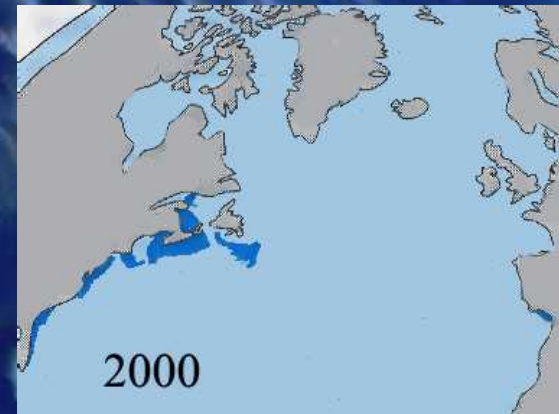
Fishing catch in 1900
Red = over 10 tons/sq km
Light blue = less than 0.1

*Established
social balances*



*Established
institutions*

*New
institutions*



*Traditional
societies*

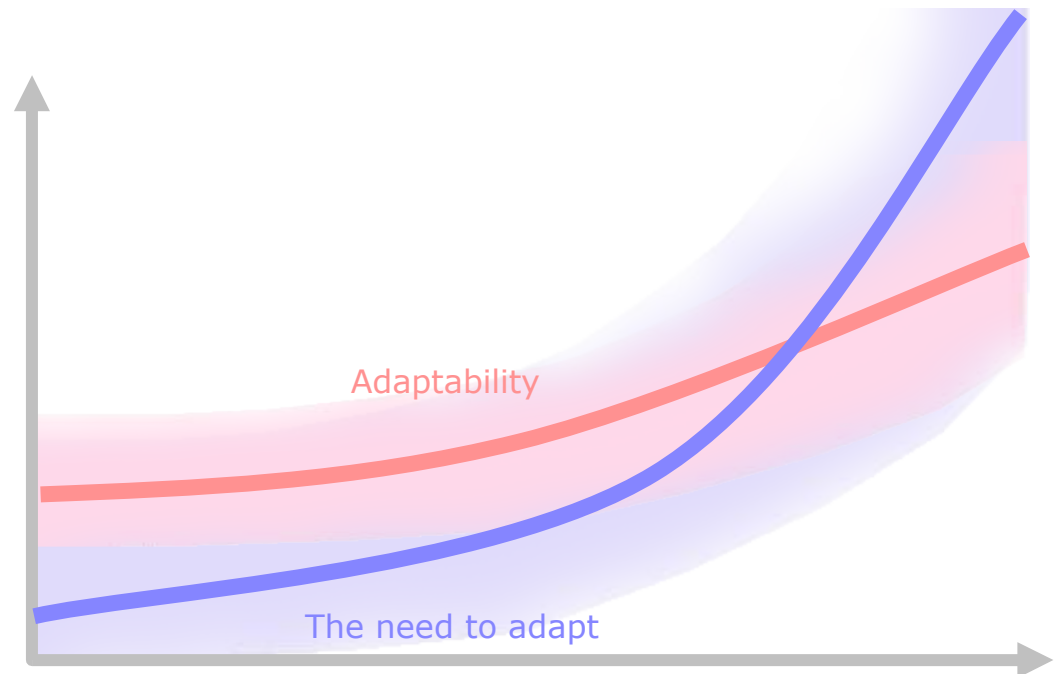
*Established
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Weak signals, harsh impacts

- The great systems change relatively slowly
- Hitherto separate systems are being brought together
- Long-established drivers continue to increase in force



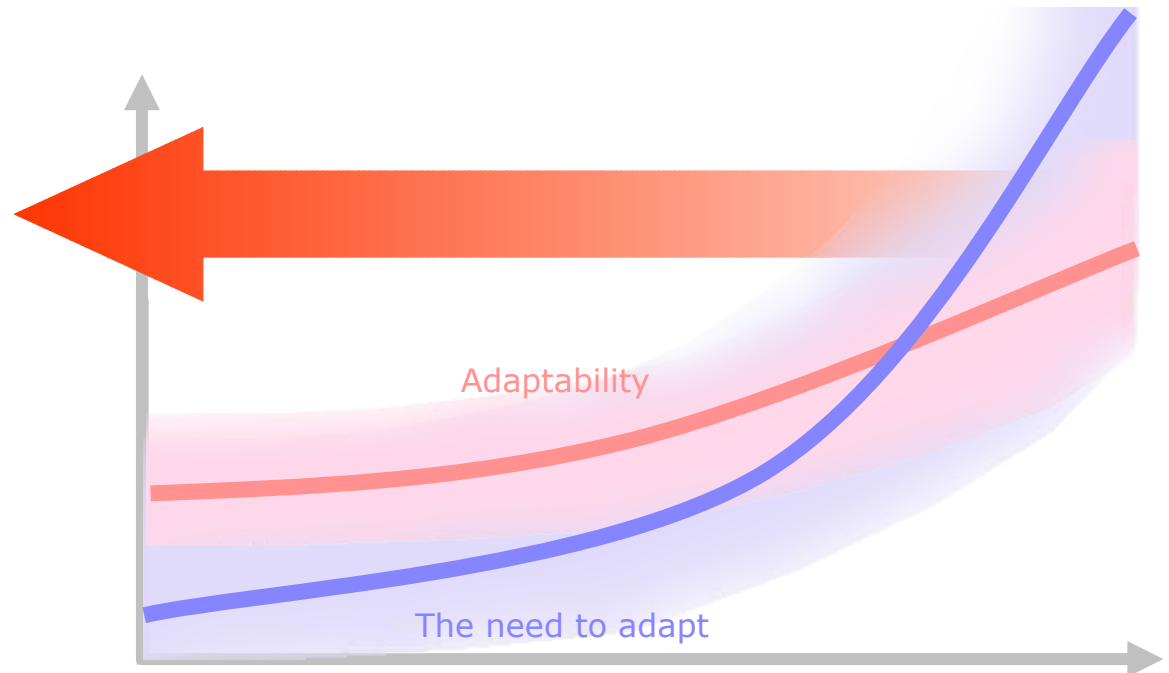
Weak signals, harsh impacts

What permits adaptation?

What drives change?

What creates friction?

- The great systems change relatively slowly
- Hitherto separate systems are being brought together
- Long-established drivers continue to increase in force
- Response to may create discontinuities



▶ **What permits adaptation?**

Human resource, confidence, knowledge
Informal and formal institutional integrity
Effective resource allocation
Security and predictability

What drives change?

What creates friction?



What permits adaptation?

Human resource, confidence, knowledge
Informal and formal institutional integrity
Effective resource allocation
Security and predictability

▶ What drives change?

Enablers of adaptation, as above
Pursuit of the best, shunning the worst
Connectivity between hitherto separate
domains, actors and systems

What creates friction?



Rich nations

15% world population
90% world wealth

Economic stability and security frameworks
Control of dangerous technology
Respect for intellectual property
Common approach to taxes, regulation, trade

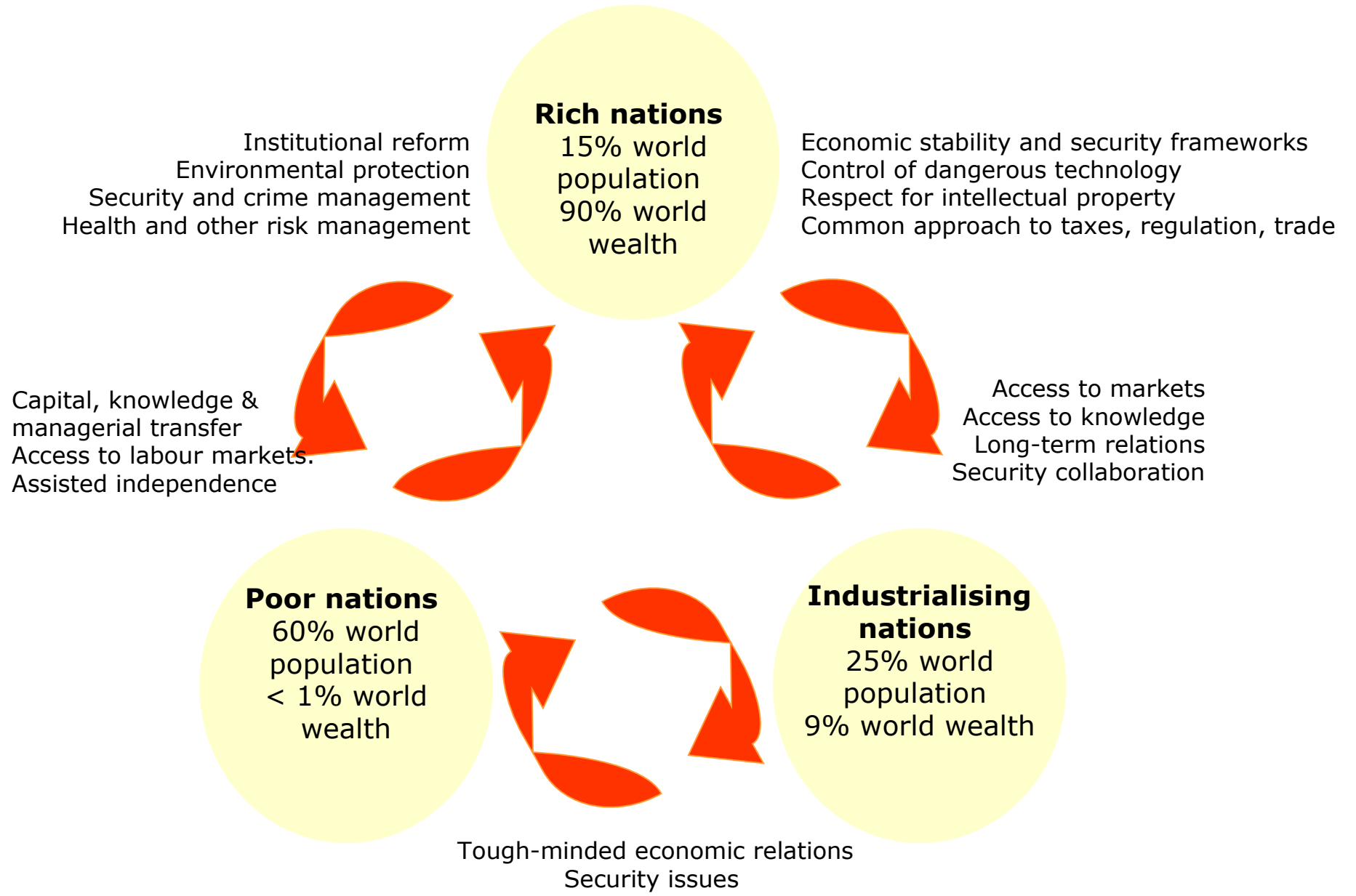
Access to markets
Access to knowledge
Long-term relations
Security collaboration

Industrialising nations

25% world population
9% world wealth

What drives change?

Enablers of adaptation, as above
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Connectivity between hitherto separate domains, actors and systems



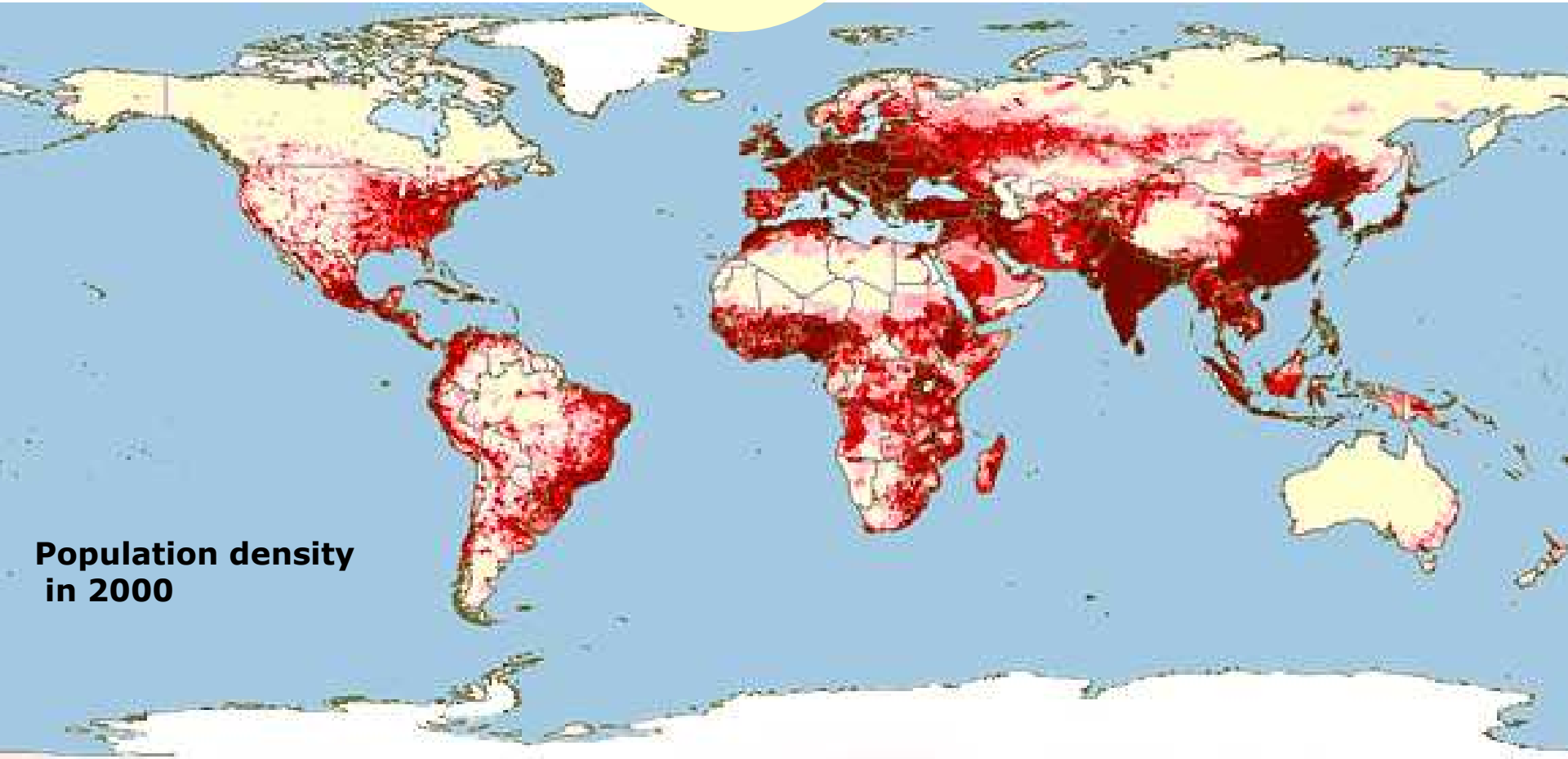
Institutional reform
Environmental protection
Security and crime management
Health and other risk management

Rich nations

15% world
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Economic stability and security frameworks
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Respect for intellectual property
Common approach to taxes, regulation, trade

**Population density
in 2000**

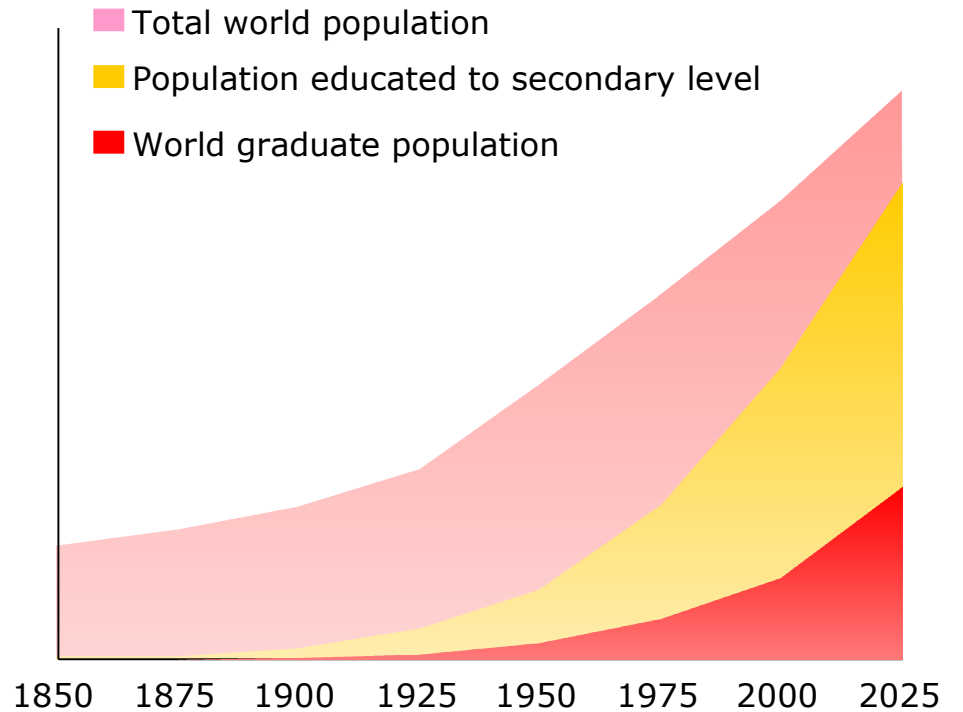
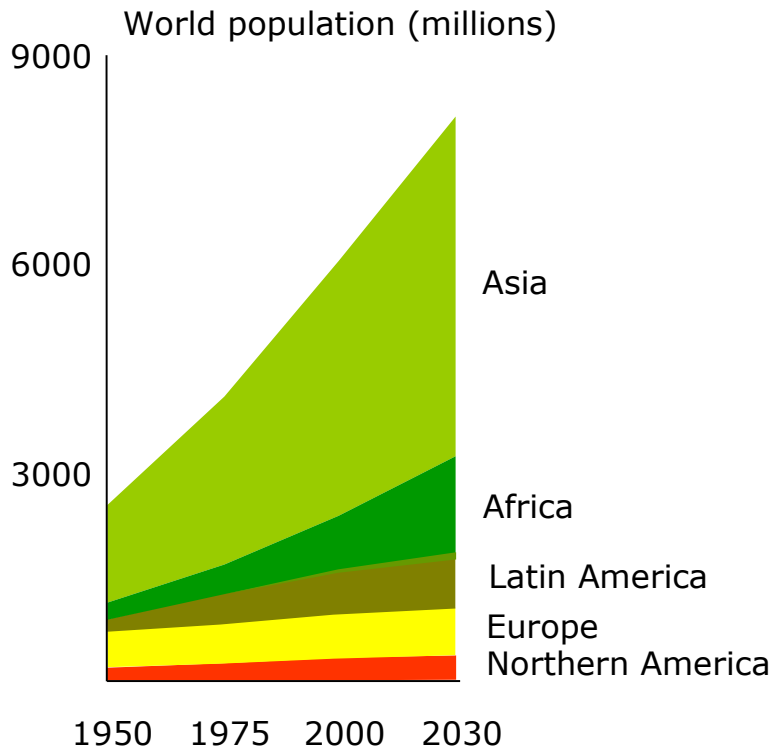


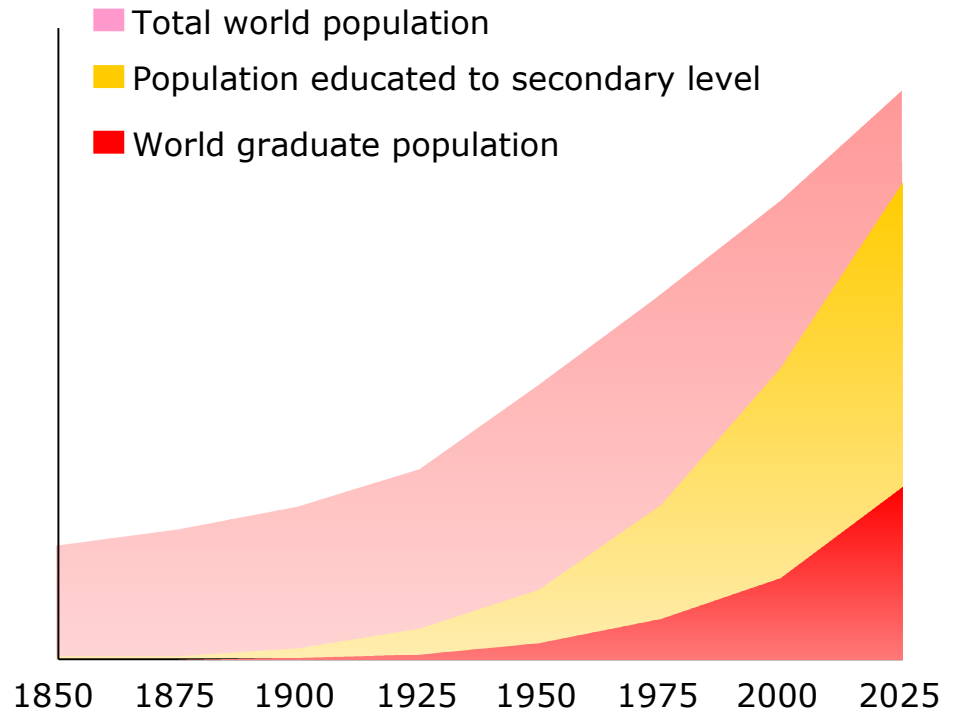
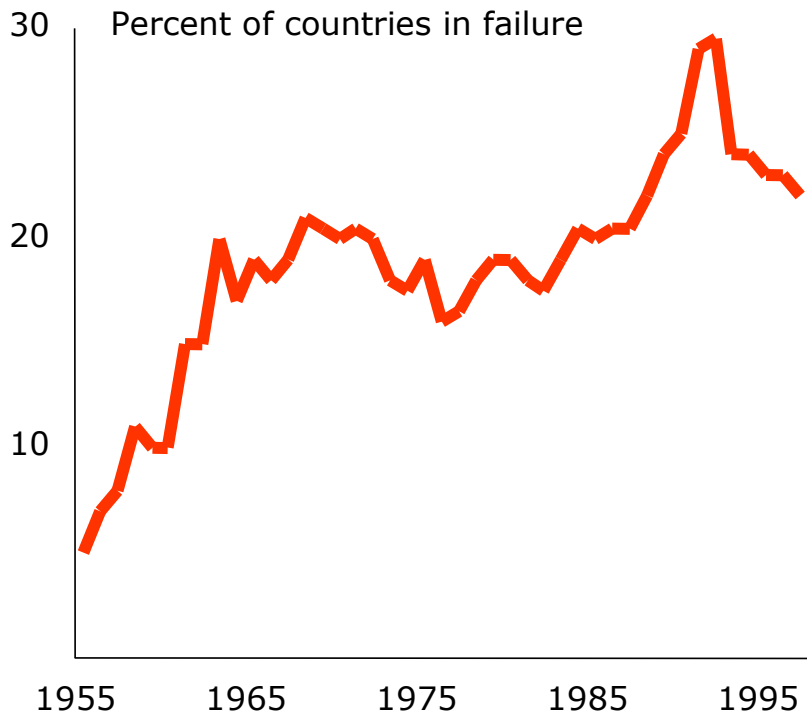
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Rich nations

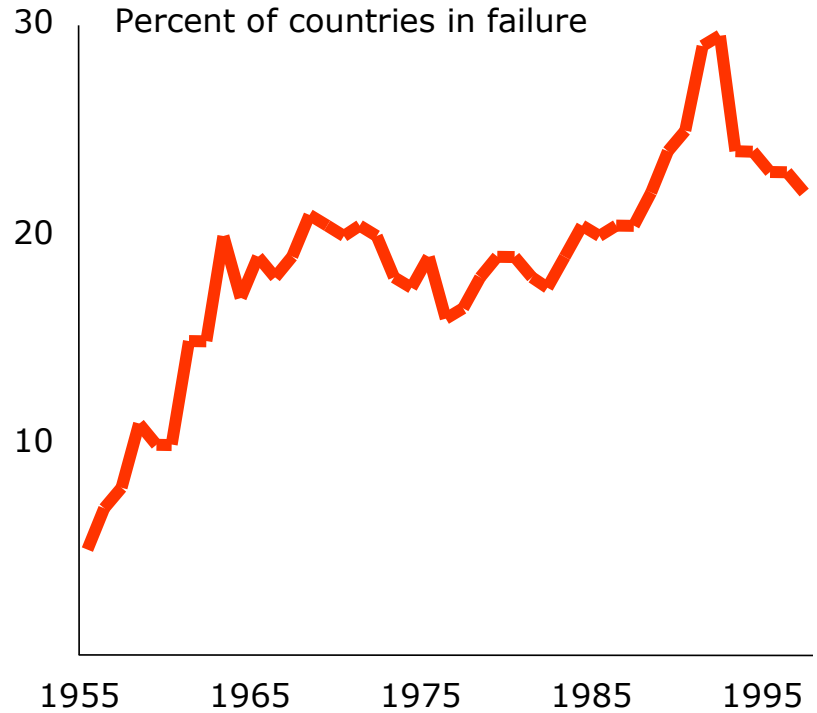
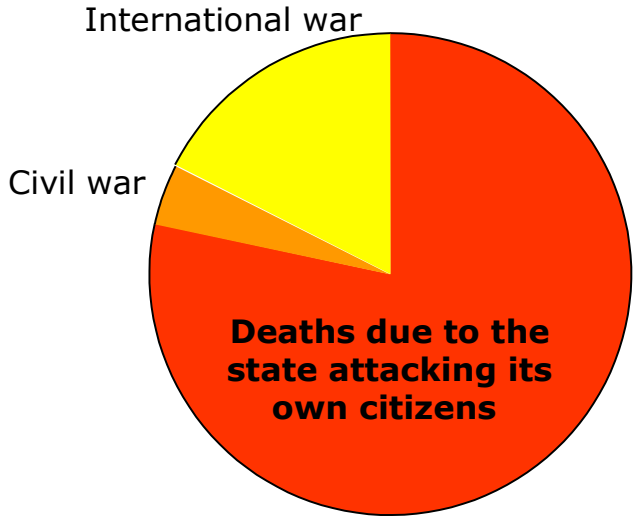
15% world population
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 Common approach to taxes, regulation, trade

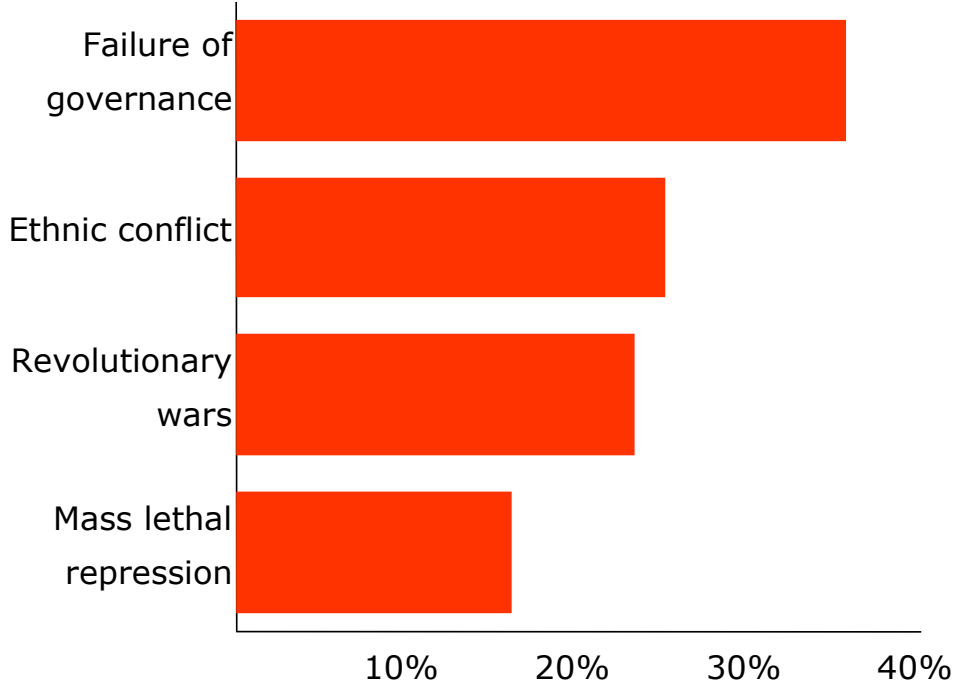




Around 220 million deaths due to conflict in the C20th



Estimated contribution to state failure, % 1955-95



What permits adaptation?

Human resource, confidence, knowledge
Informal and formal institutional integrity
Effective resource allocation
Security and predictability

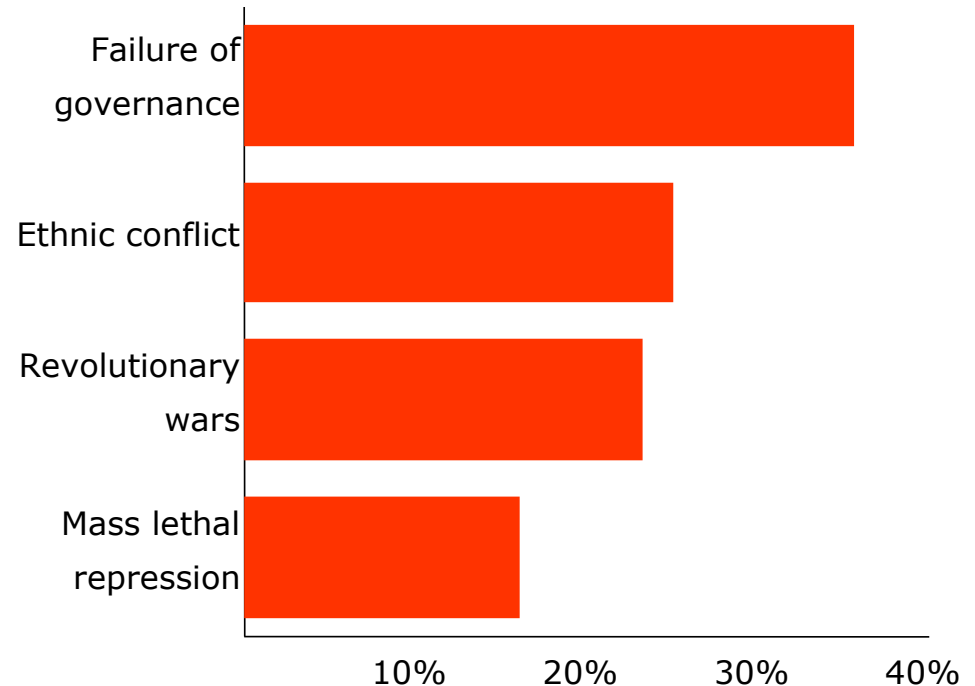
What drives change?

Enablers of adaptation, as above
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Connectivity between hitherto
separate domains, actors and systems

What creates friction?

Adaptive machinery that cannot cope

Estimated contribution to state failure, % 1955-95



What permits adaptation?

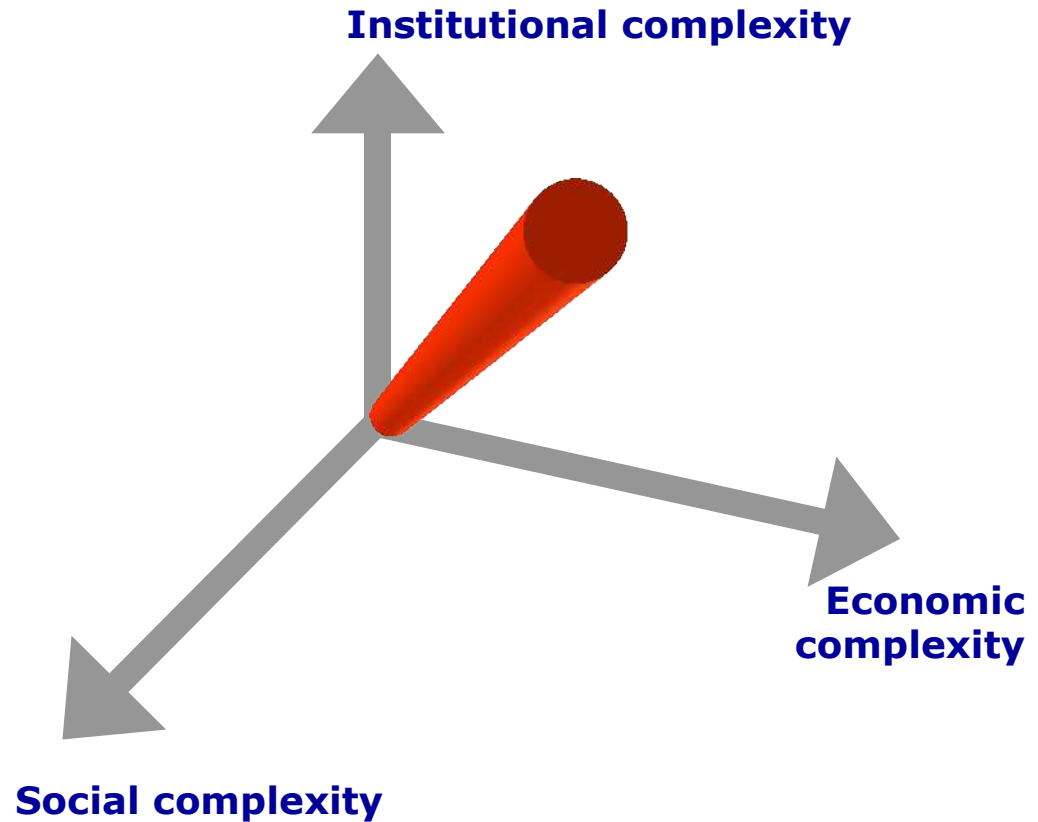
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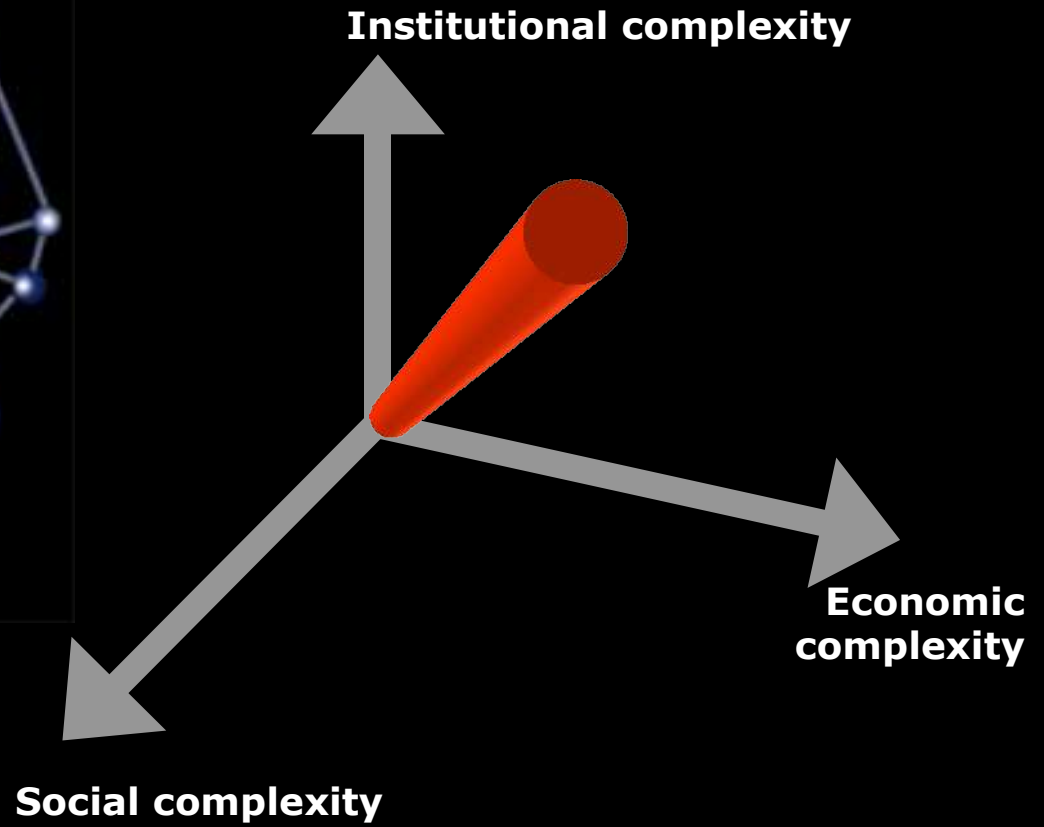
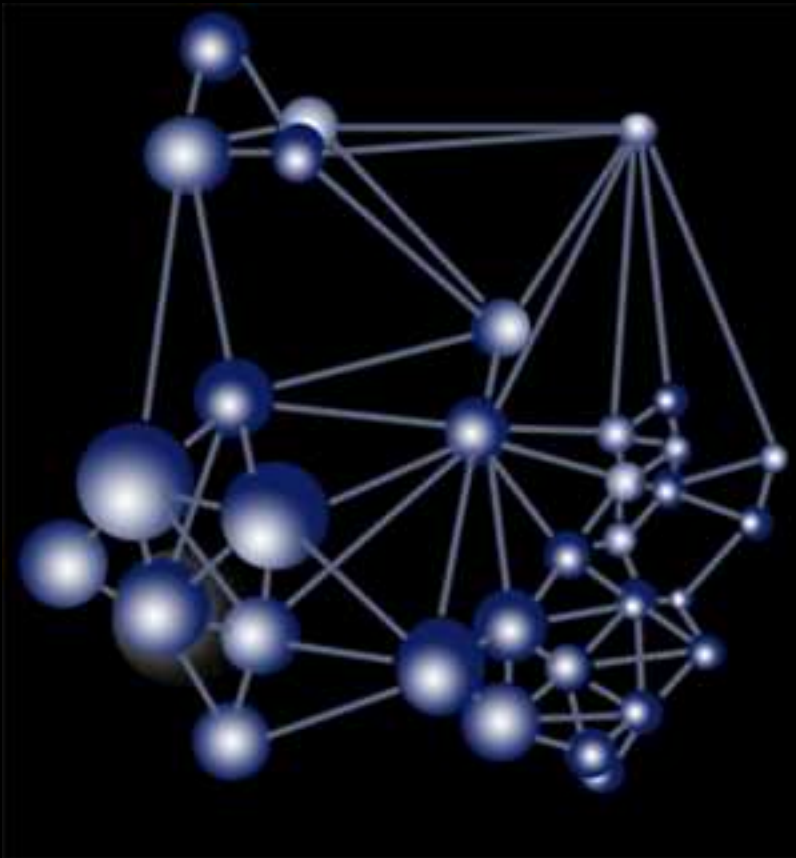
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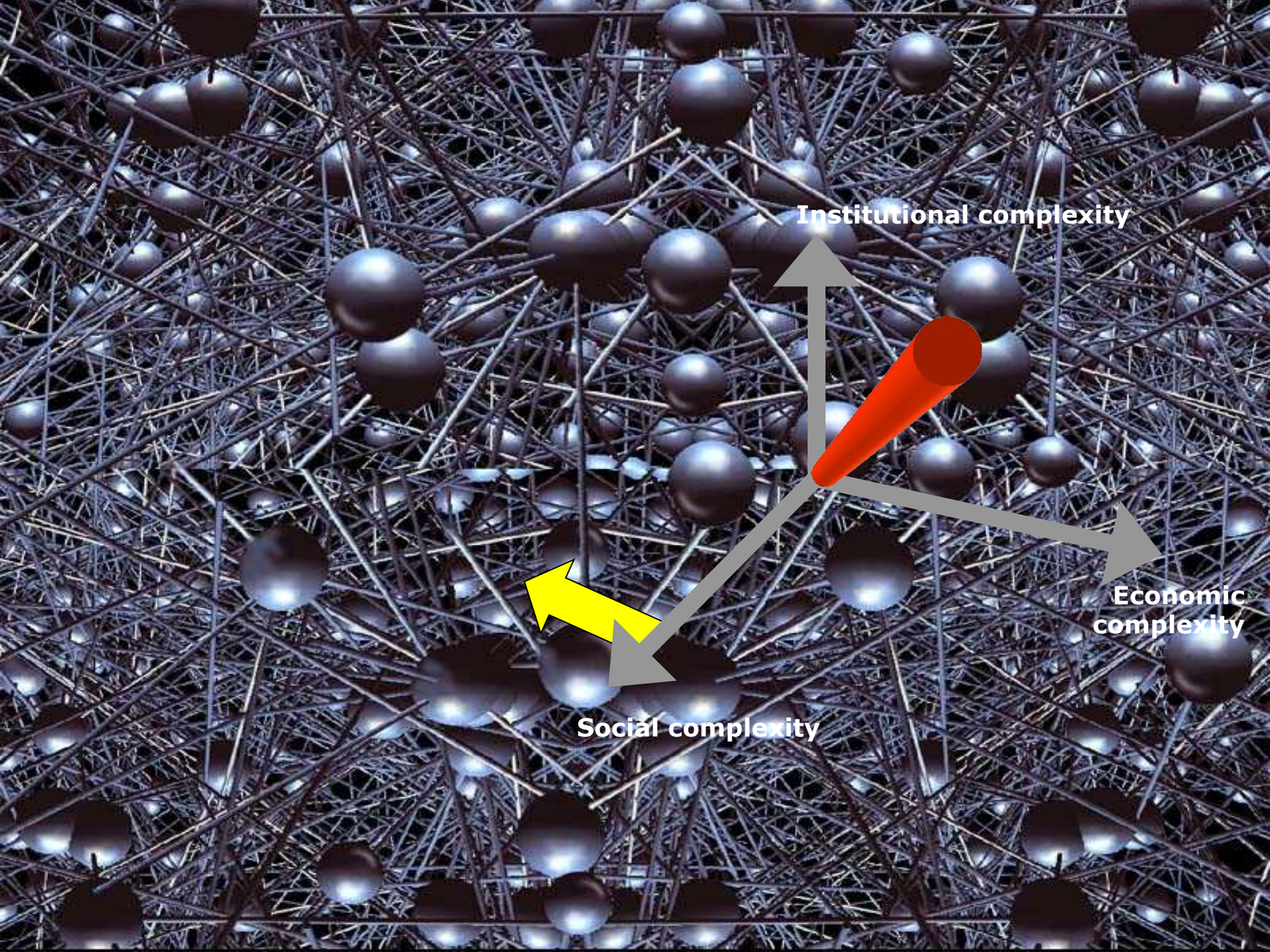
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What creates friction?

Adaptive machinery that cannot cope







Institutional complexity

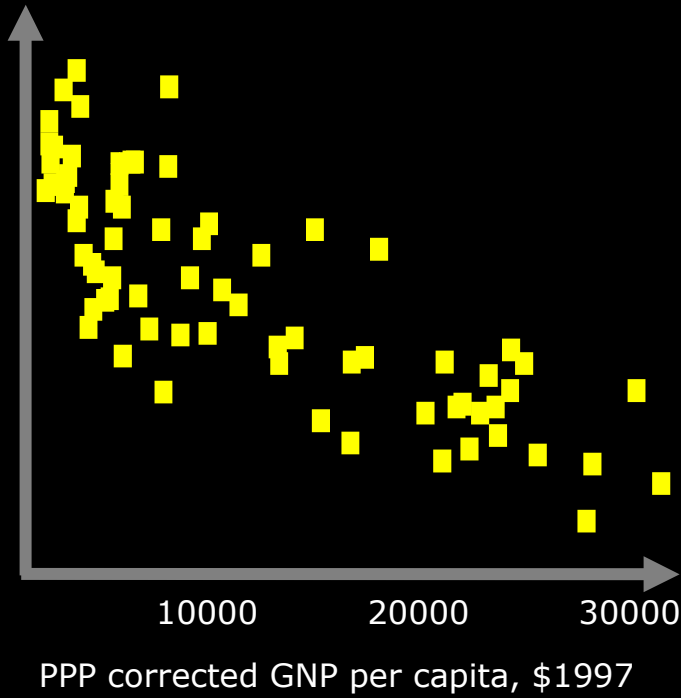
Economic complexity

Social complexity

■ Market-assessed level of relative business risk

High level of risk

Low level of risk

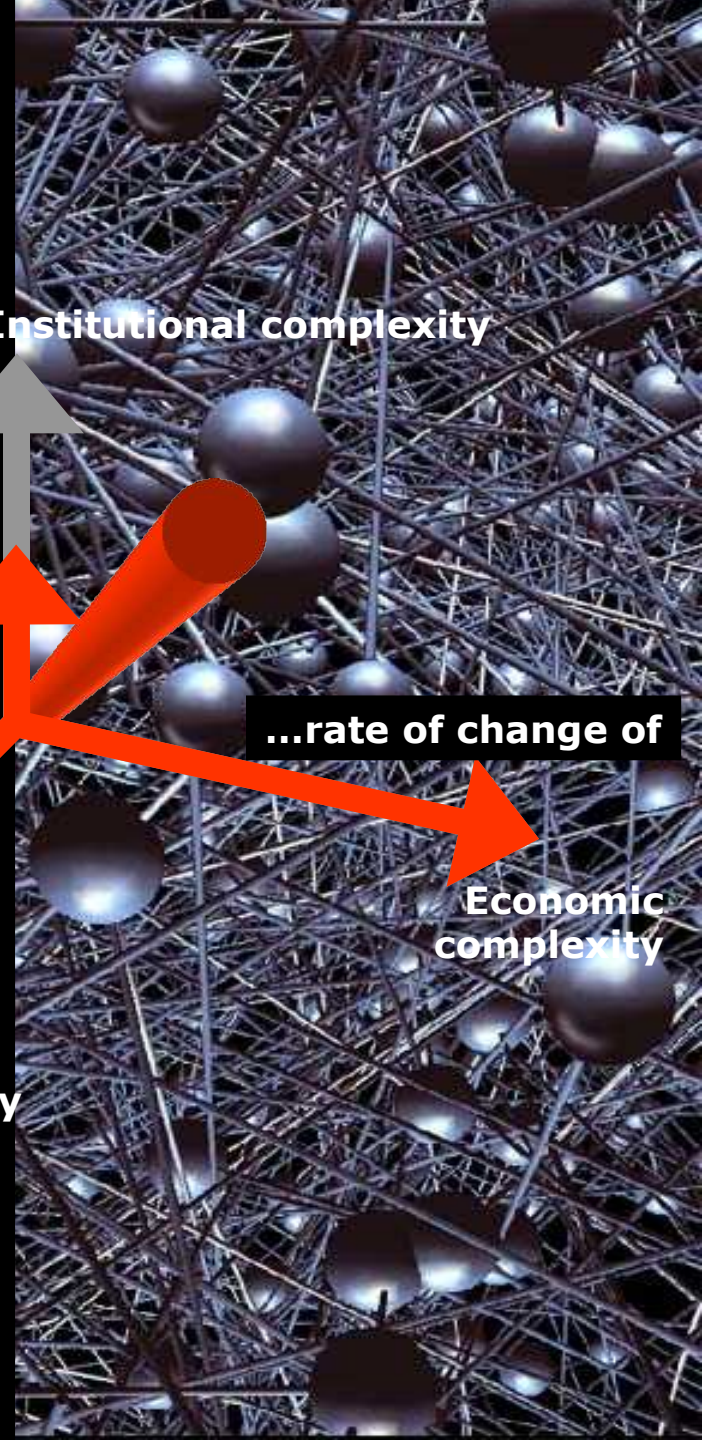


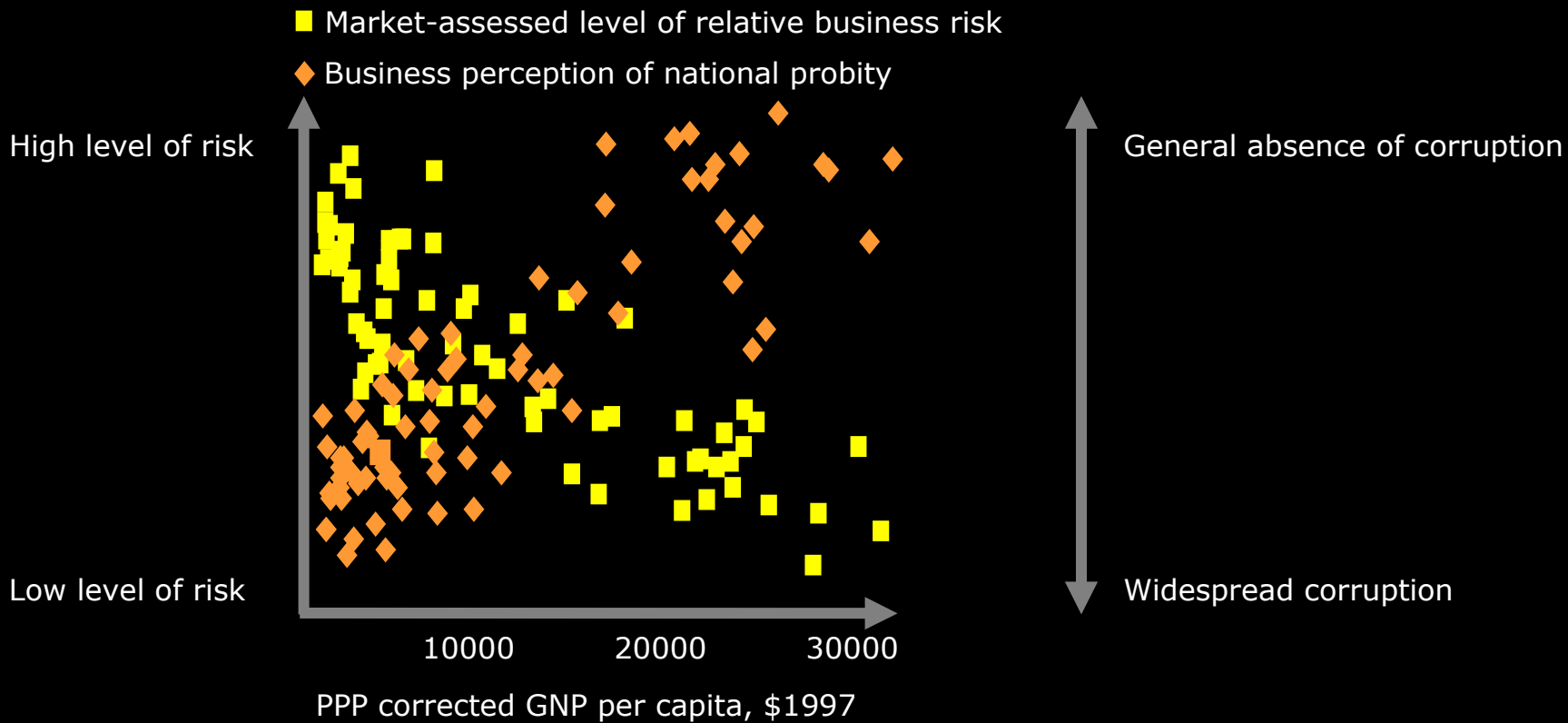
Institutional complexity

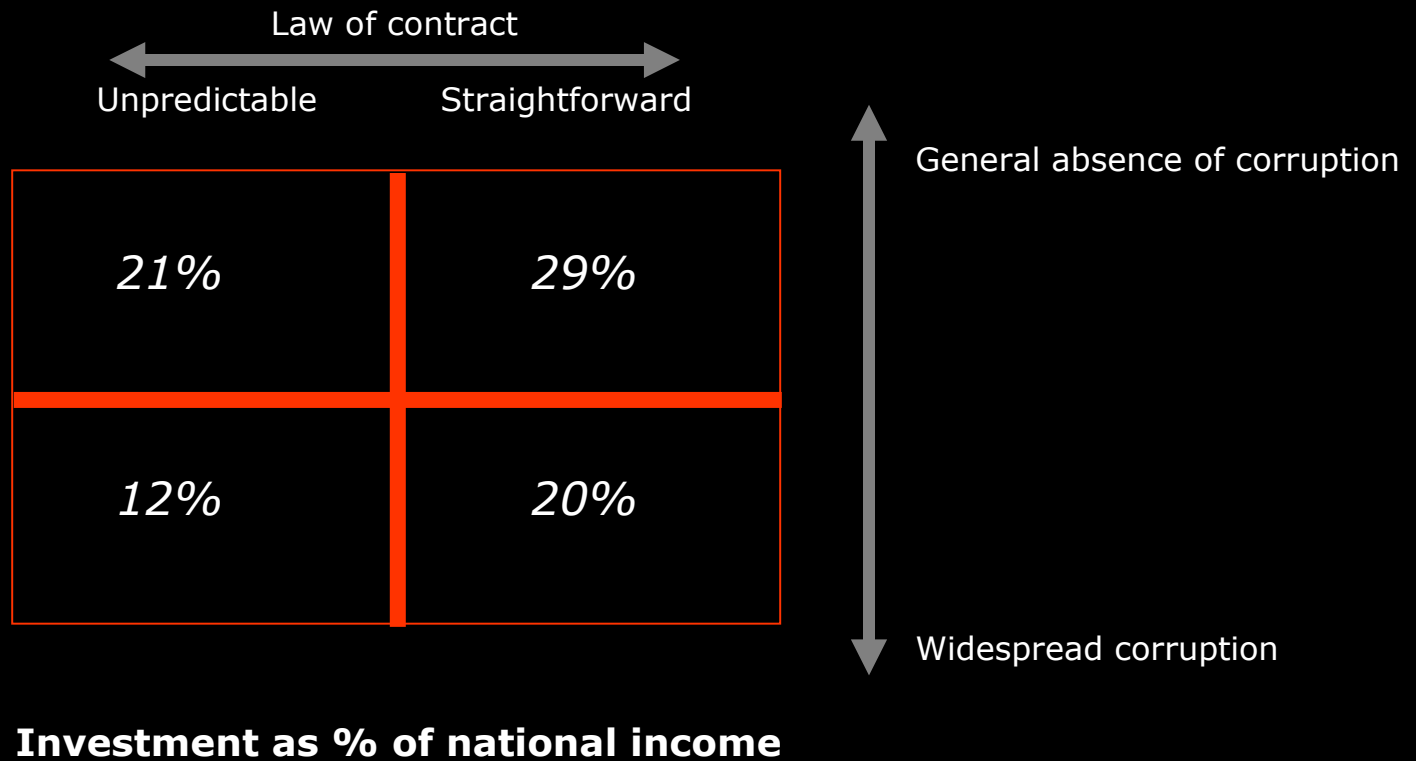
...rate of change of

Economic complexity

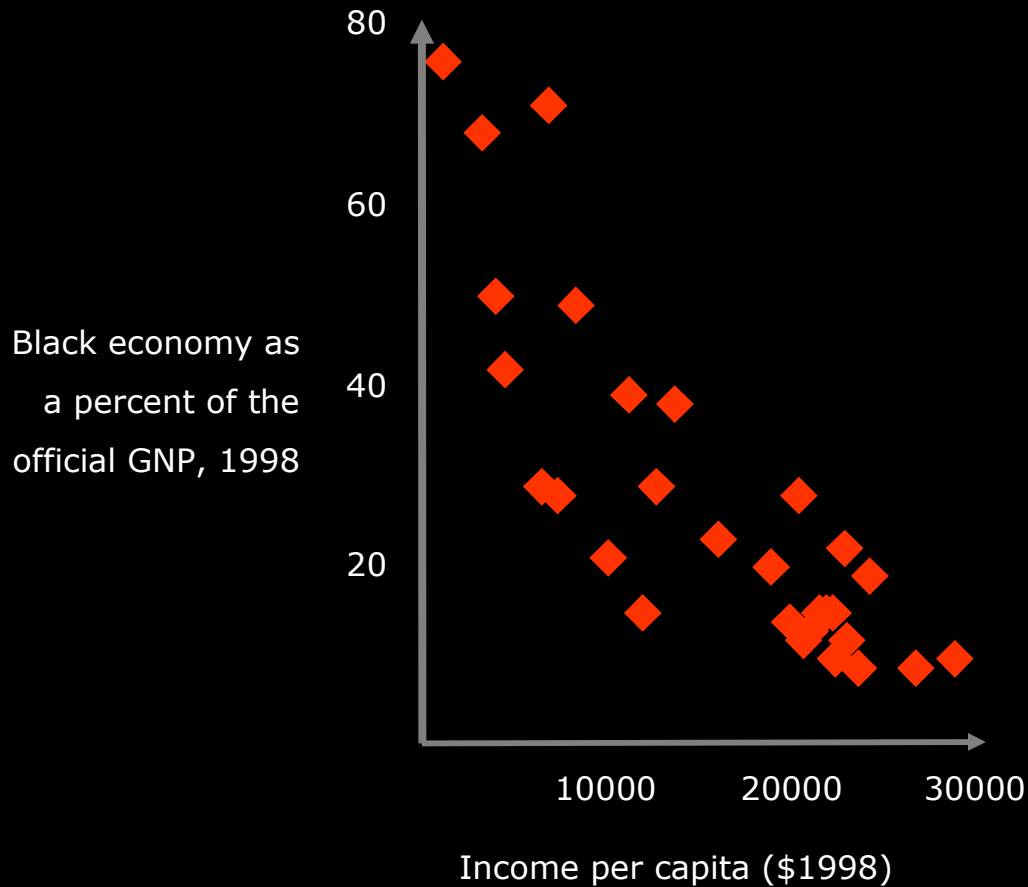
Social complexity



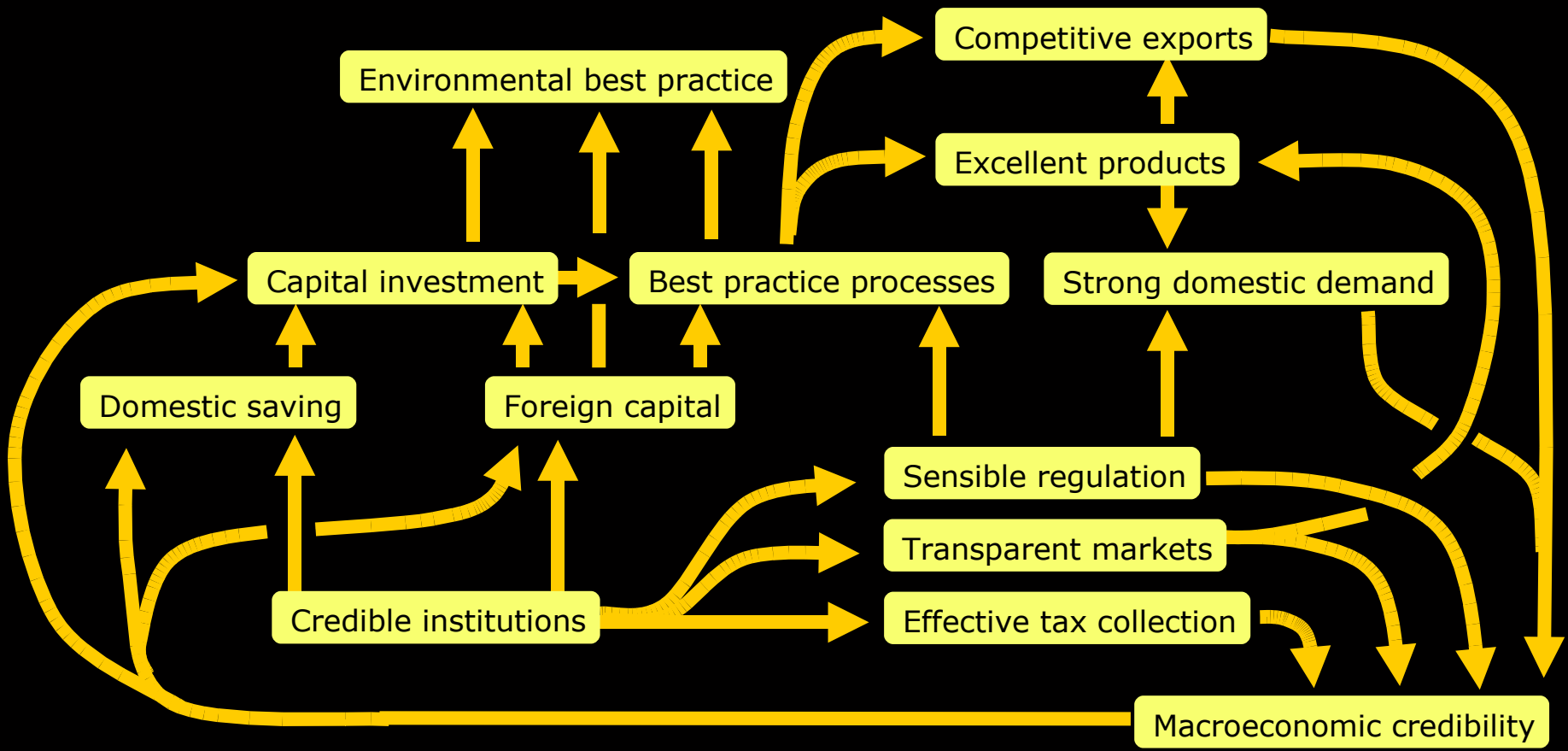




Lack of corruption ➤ public income and investment, rationality, trust



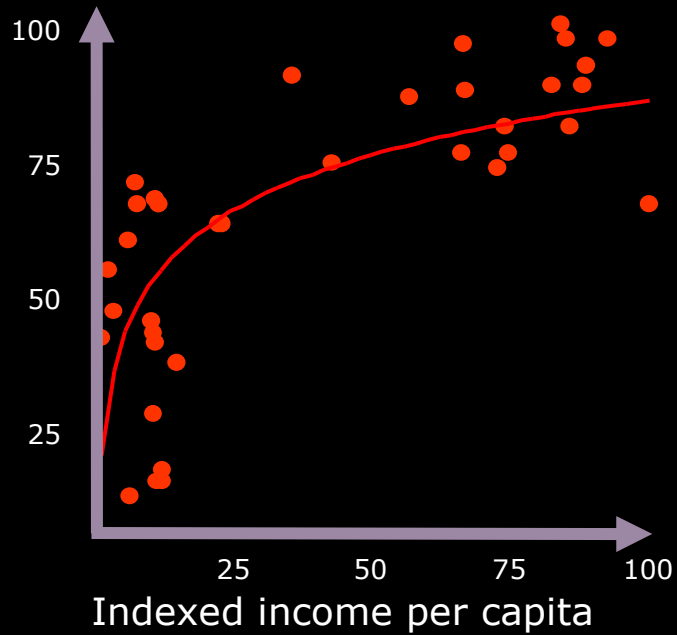
- Lack of corruption ➤ public income and investment, rationality, trust
- Stable environment ➤ savings, investment, foreign funds, foresight
- Equitable society ➤ engagement with institutions, entrepreneurship
- Systems approach ➤ pulling together the threads, public integration



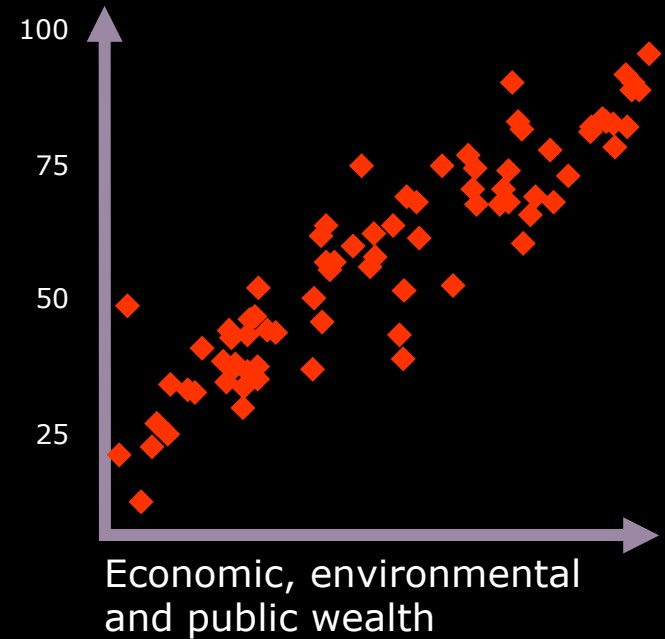
Human resources ➤ capability, trust, engagement

Systems approach ➤ pulling together the threads, public integration

Index of subjective well-being

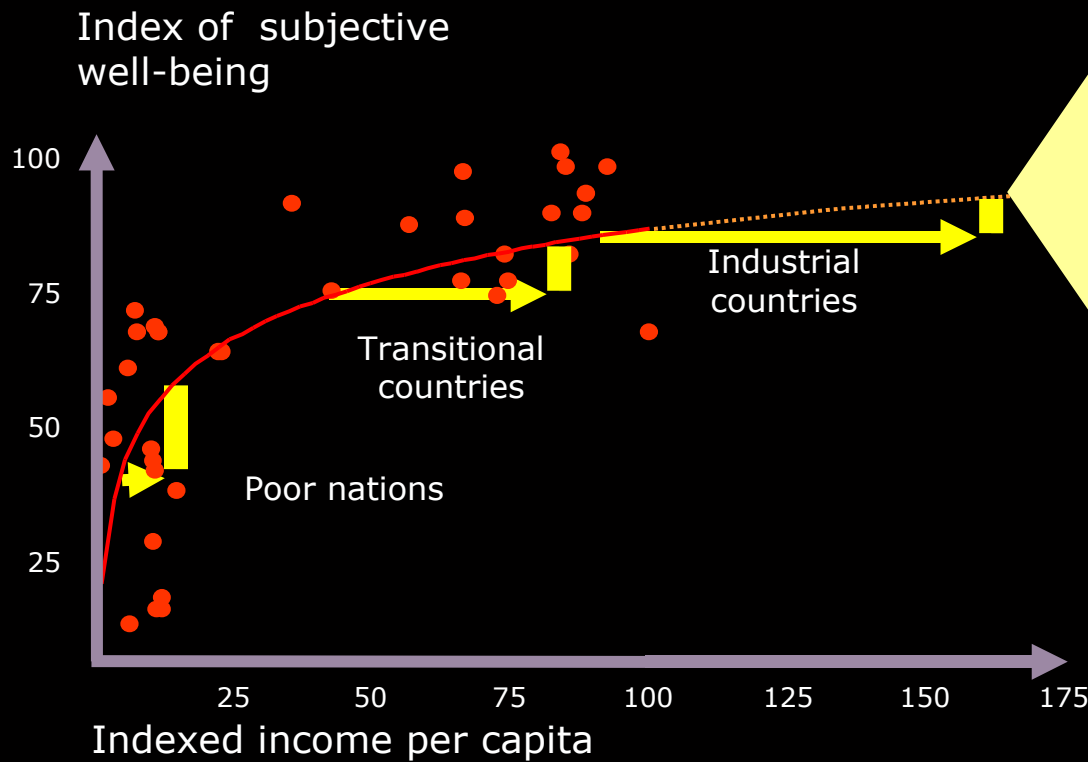


Increasing capabilities amongst the population



Human resources ➤ capability, trust, engagement

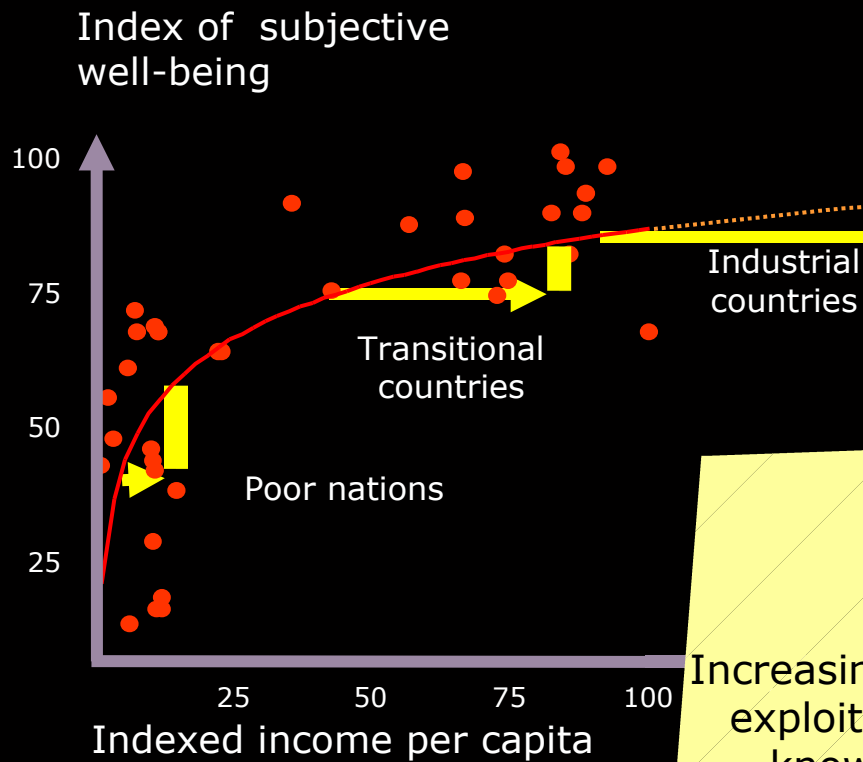
Systems approach ➤ pulling together the threads, public integration



Elderly, concerned by internal affairs. Key external issues are maintaining competitiveness, retaining intellectual property, assuring security & tending to the natural environment.

Human resources ➤ capability, trust, engagement

Systems approach ➤ pulling together the threads, public integration



Elderly, concerned by internal affairs. Key external issues are maintaining competitiveness, retaining intellectual property, assuring security & tending to the natural environment.

Increasingly seen as exploiting other peoples' knowledge, unsettling or dangerous new technologies and natural resources in troubling ways. Becoming elderly, but racing to catch up with the knowledge economy

Grasping at available economic and political possibilities

What permits adaptation?

Human resource, confidence, knowledge
Informal and formal institutional integrity
Effective resource allocation
Security and predictability

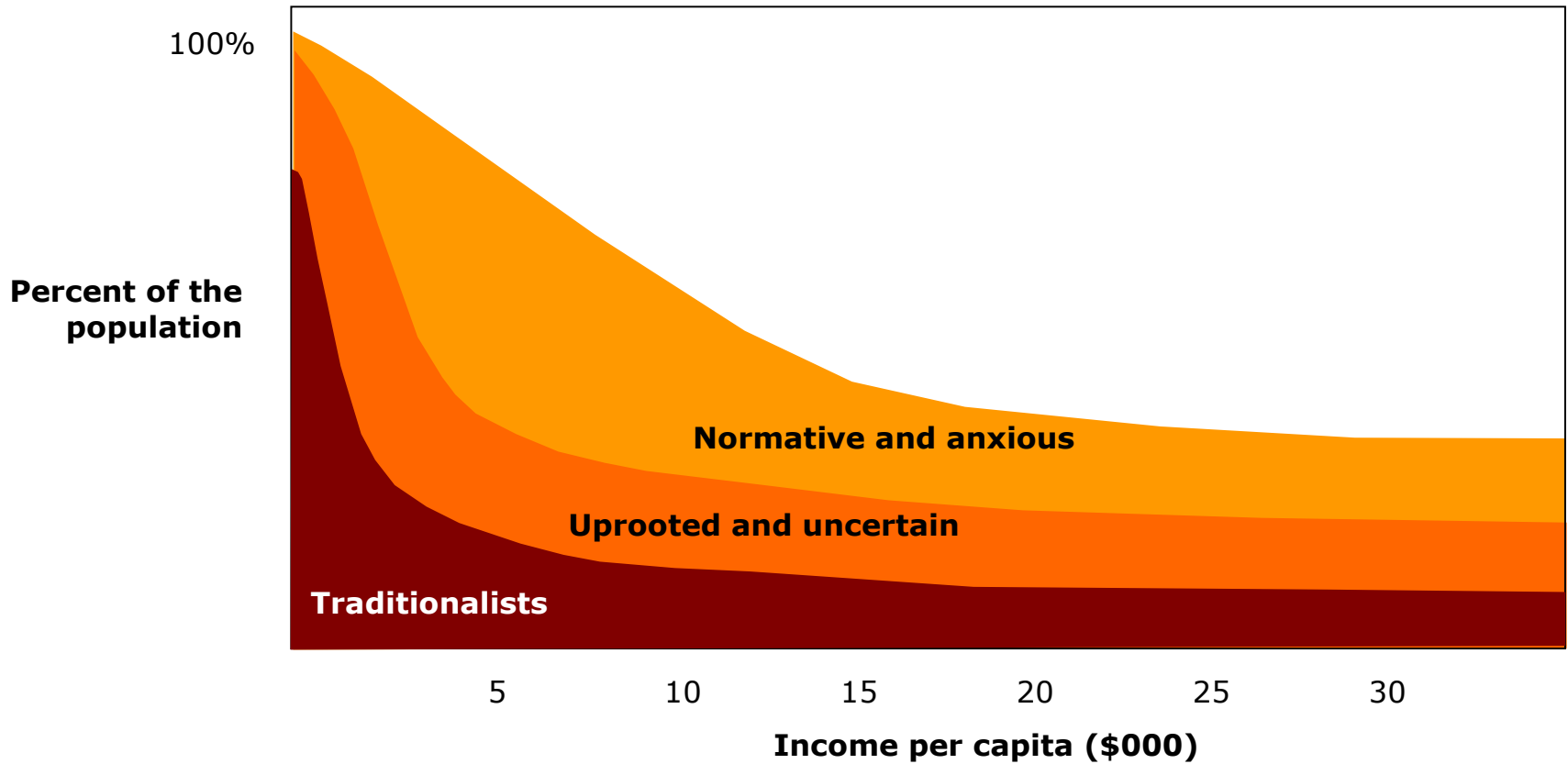
What drives change?

Enablers of adaptation, as above
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Connectivity between hitherto
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What creates friction?

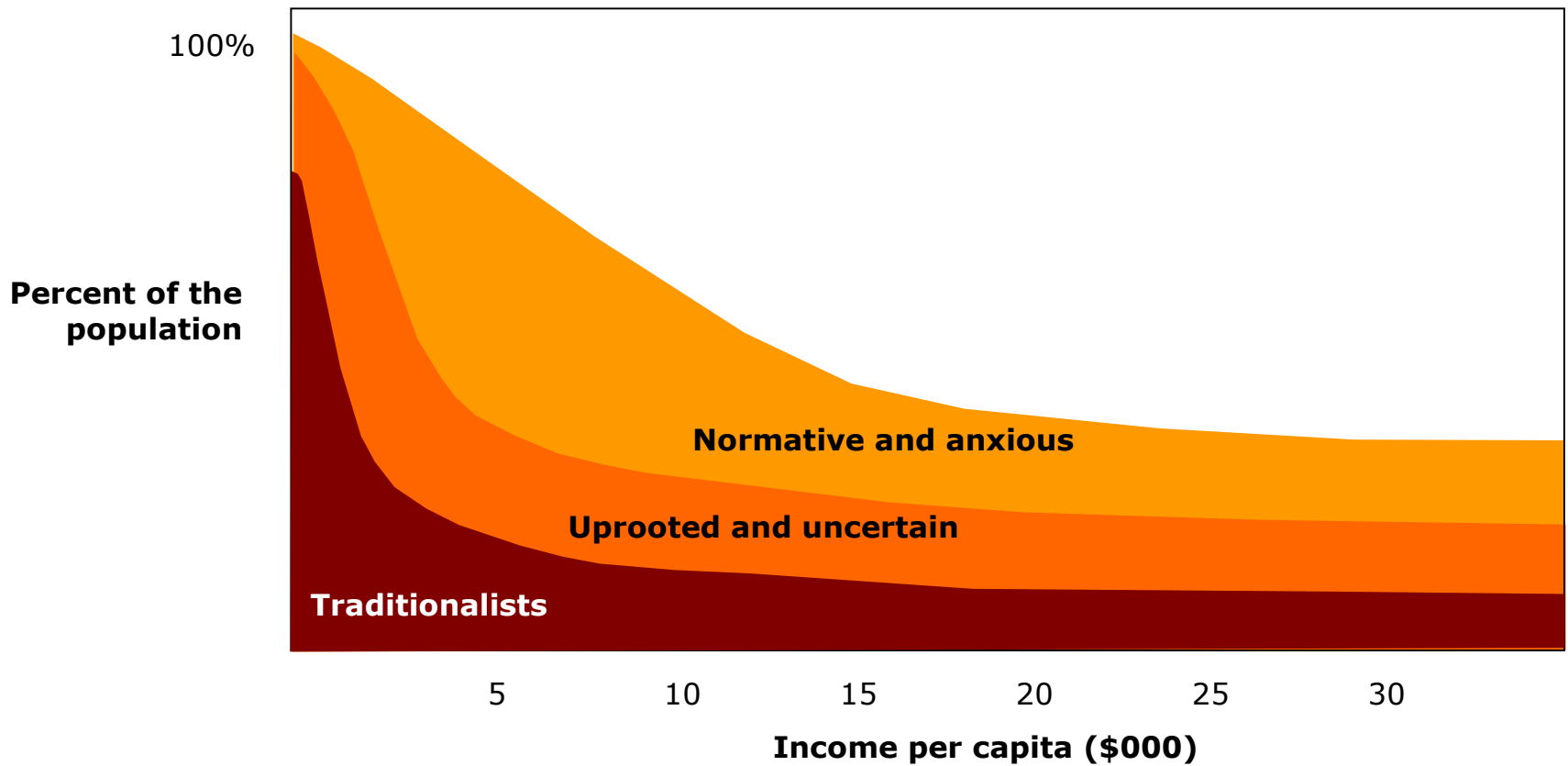
Adaptive machinery that cannot cope
Resource scarcity: food, water
Incompatible goals or world view



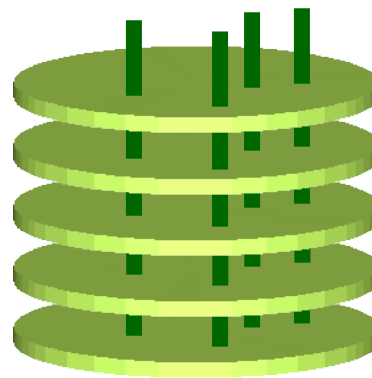


What creates friction?

- Adaptive machinery that cannot cope
- Resource scarcity: food, water
- Incompatible goals or world view



Individual lives seen as 'threads' cutting through these layers of activity



Village community

- Personal preference
- Family life
- Culture & entertainment
- Getting & spending
- Adding value



Tacit rules, trust
Informal institutions
Traditional power hierarchies
Traditional support mechanisms
Stasis maintained by relative privilege

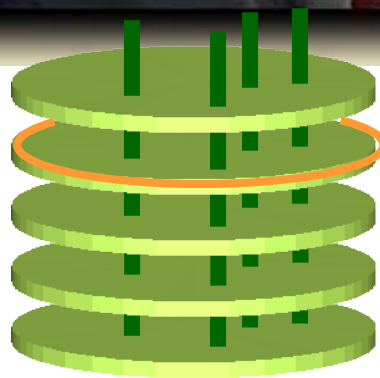


Village community

Personal preference
Family life
Culture & entertainment
Getting & spending
Adding value

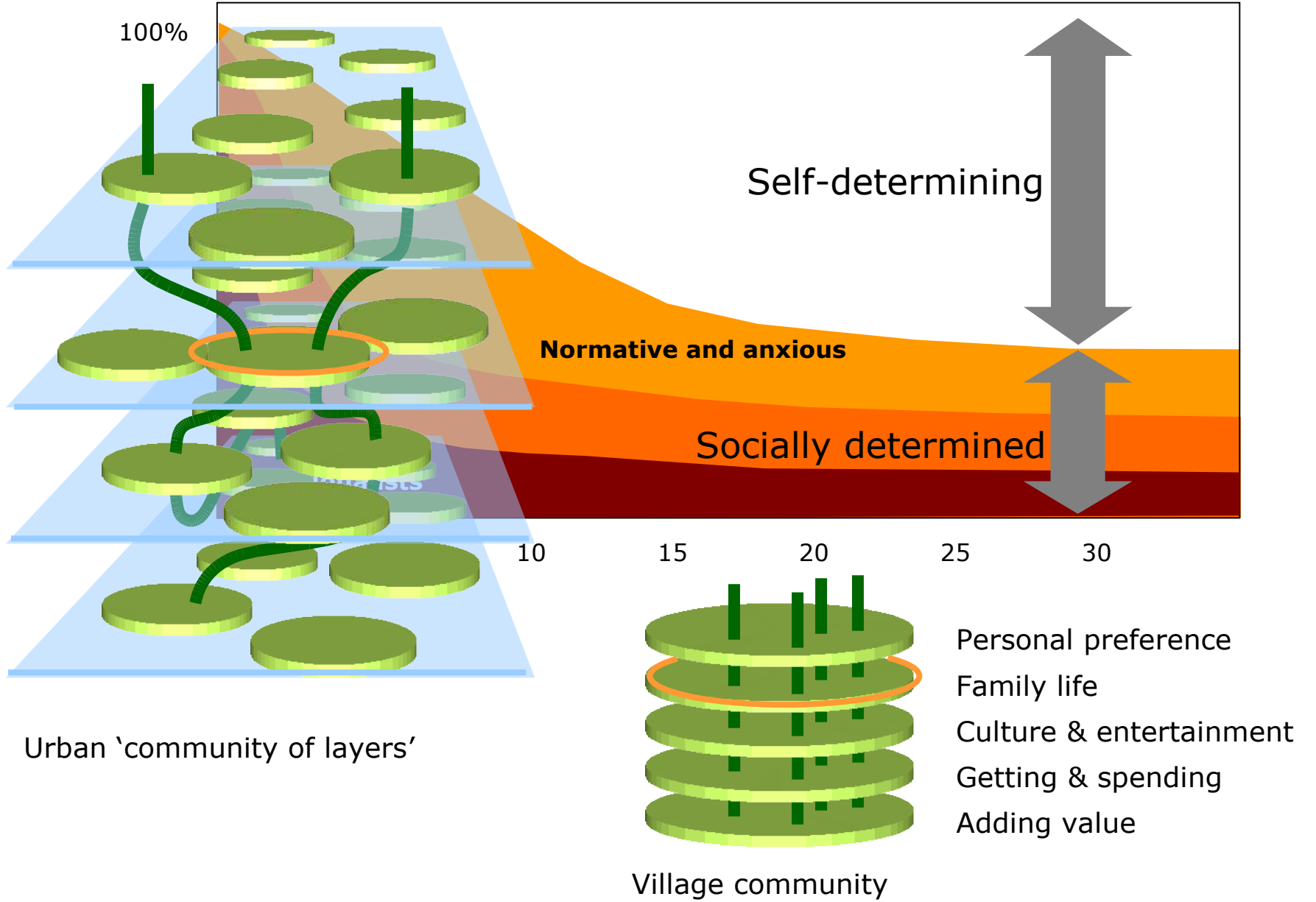


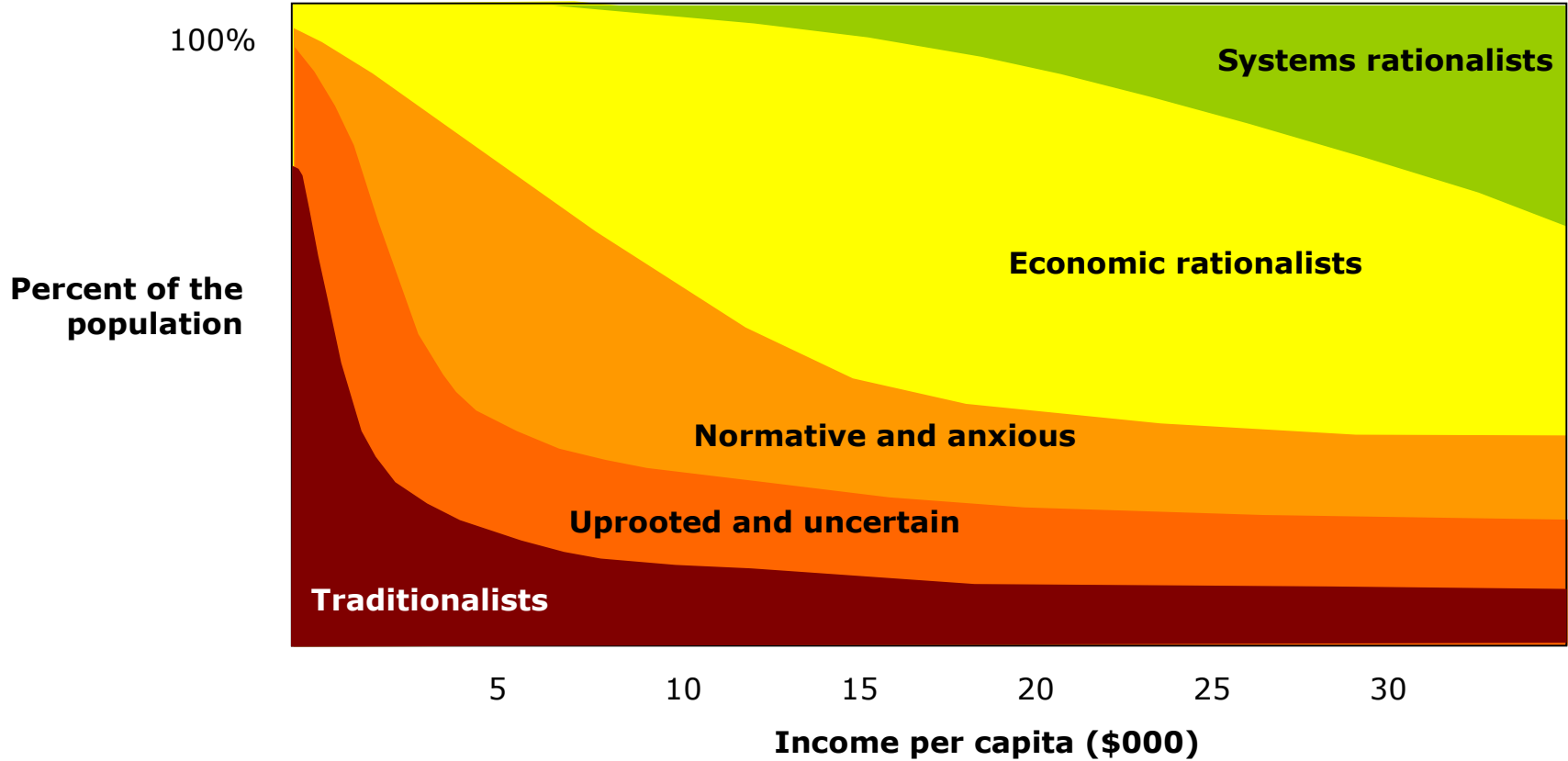
Urban 'community of layers'



Village community

- Personal preference
- Family life
- Culture & entertainment
- Getting & spending
- Adding value





What creates friction?

- Adaptive machinery that cannot cope
- Resource scarcity: food, water
- Incompatible goals or world view
- Active malevolence, larceny & predation



What creates friction?

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Weak signals, harsh impacts

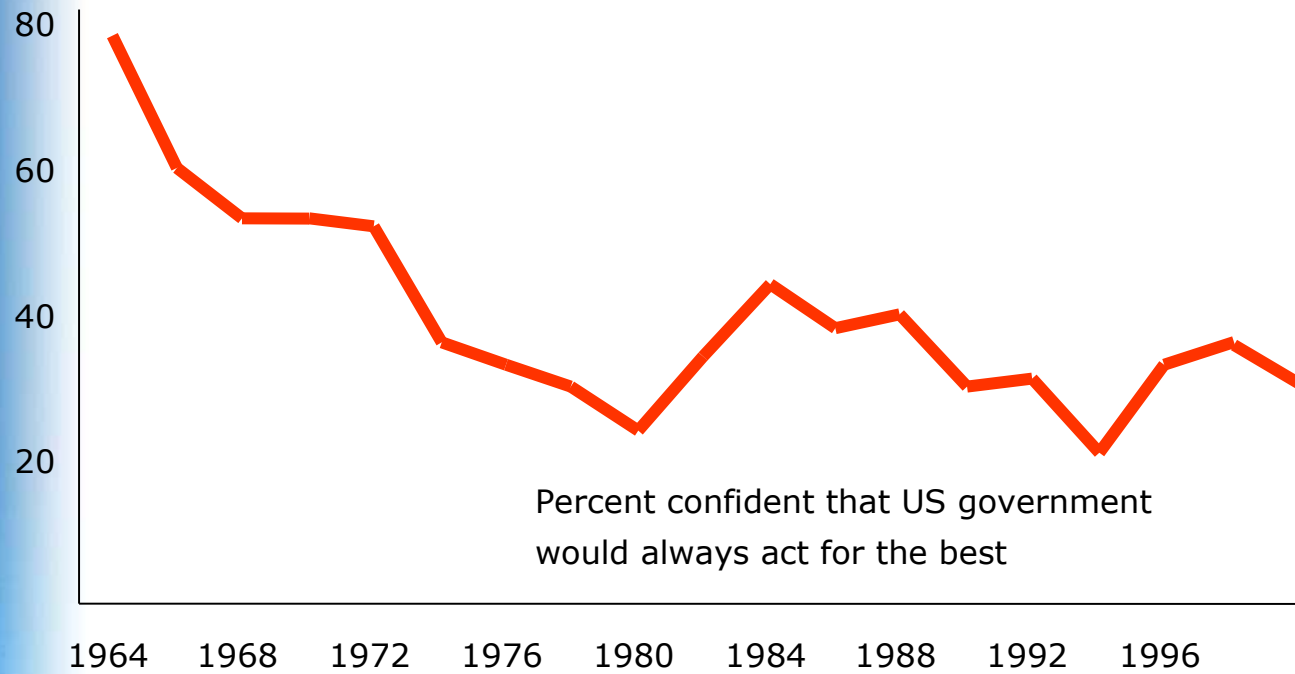
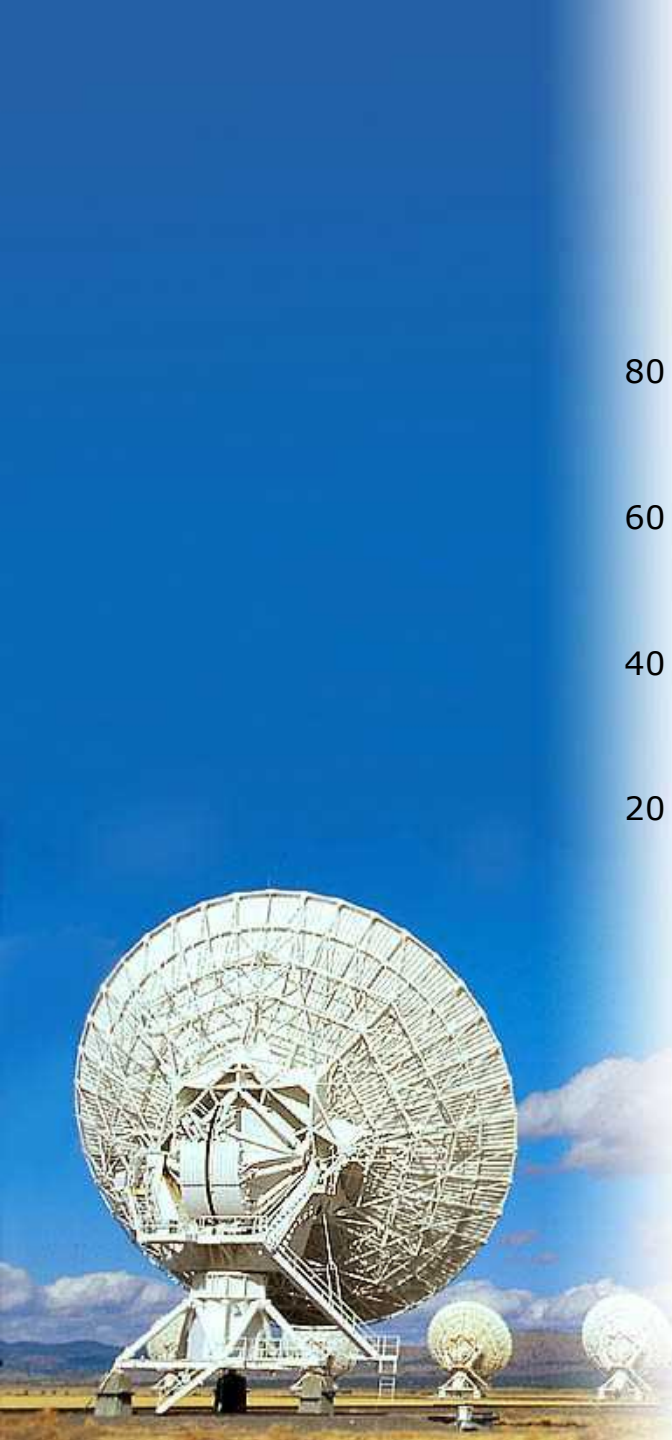
- Difficulties in the wealthy world
- Two cases for 2020

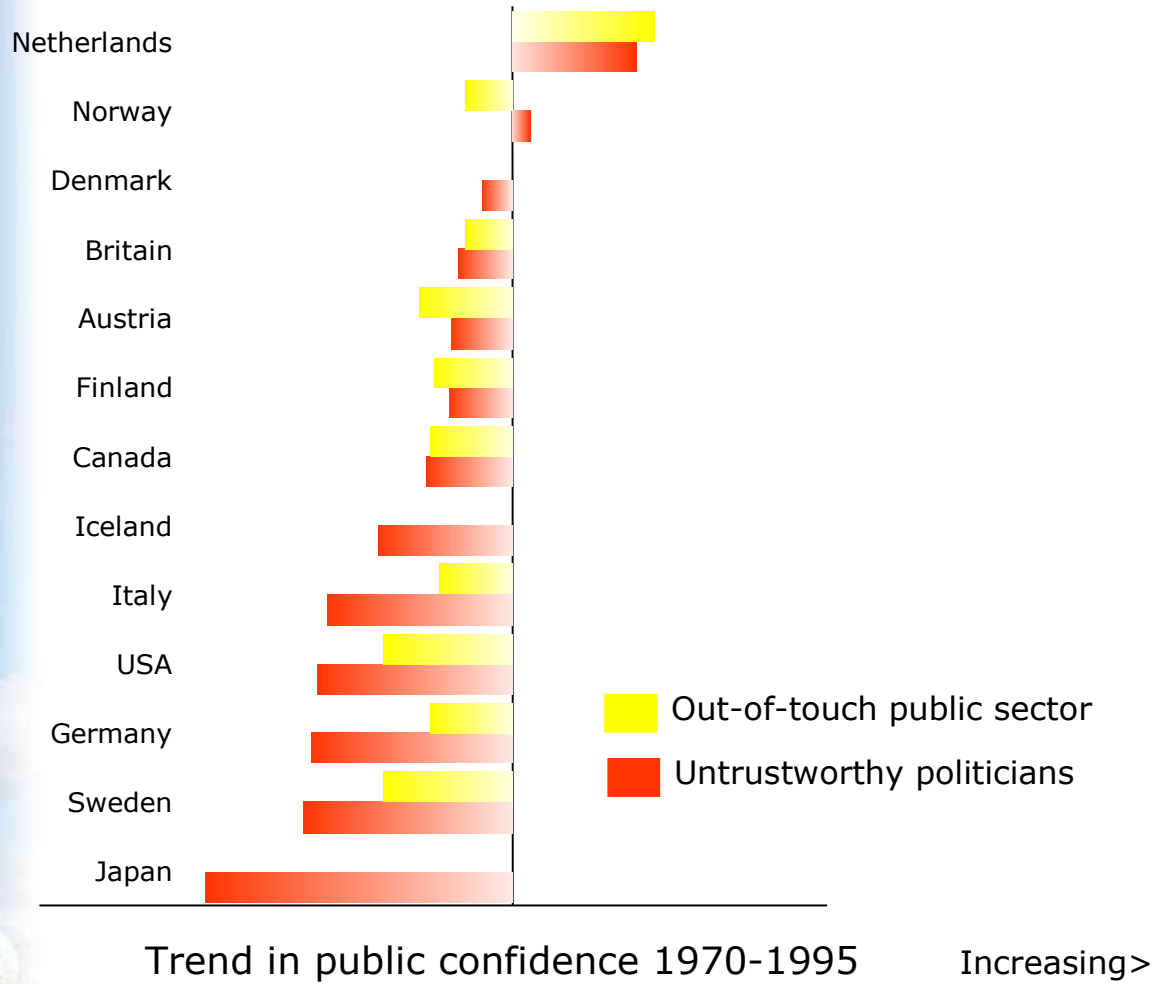
Political cohesion and consent

Demographics

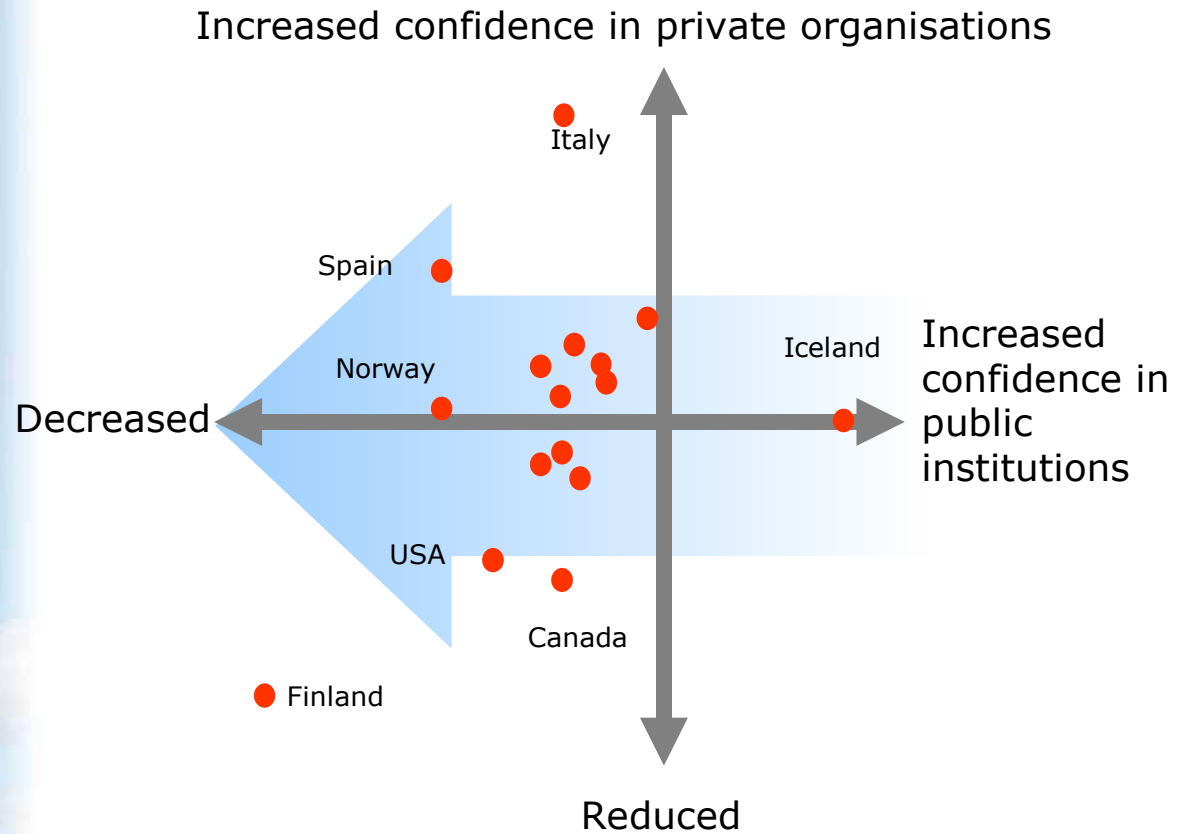
Issues of wealth generation



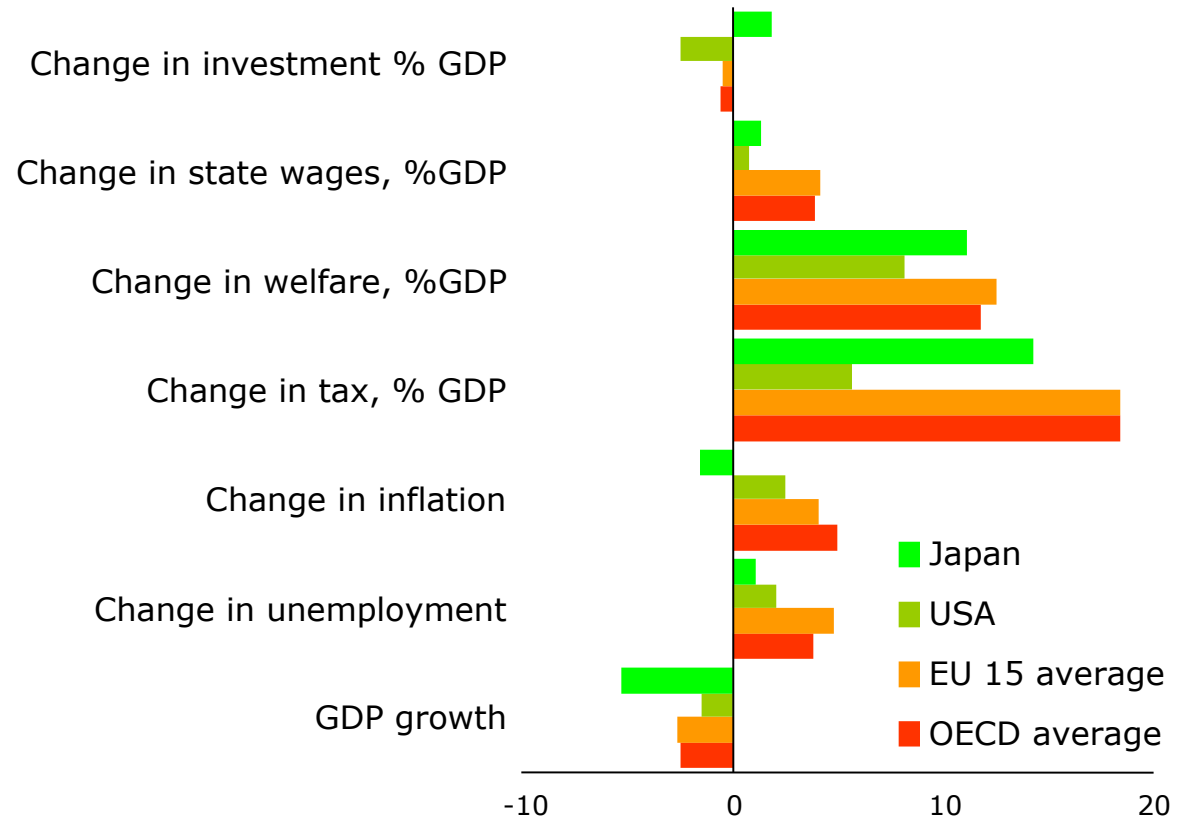




Have governments in fact performed worse than before?



Have governments in fact performed worse than before?



Percent change between average performance 1960-73 and average performance after 1973



Have governments in fact
performed worse than before?

Two sources of malaise:

Party politics has reached the limits of its usefulness



Have governments in fact
performed worse than before?

Two sources of malaise:

Party politics has reached the limits of its usefulness

No brand-unifying social or economic principles. Issues are seen as operationally separate.

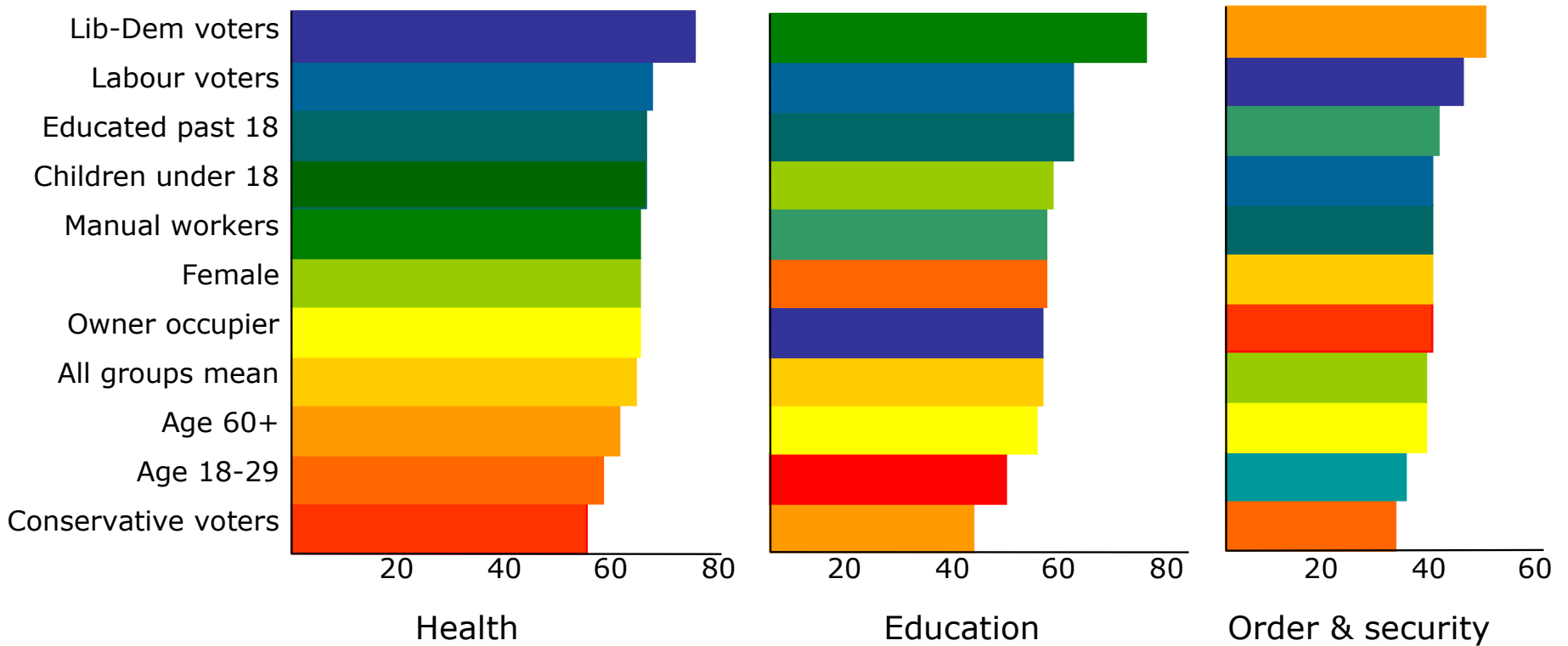


Have governments in fact performed worse than before?

Two sources of malaise:

Party politics has reached the limits of its usefulness

No brand-unifying social or economic principles. Issues are seen as operationally separate.



Have governments in fact performed worse than before?

Two sources of malaise:

Party politics has reached the limits of its usefulness

Populations have complex values and do not 'bundle' into two or three supporter groups.



Emphasis on personality and reputation, on presentation and issue micro-management

Parties have become only machines for getting elected:

- They must attempt to please all, and to alienate no significant groups.
- Brand is a dominant consideration. It tends to drive policy and priorities.
- Career development focuses on charisma rather than efficacy.

Have governments in fact performed worse than before?

Two sources of malaise:

Party politics has reached the limits of its usefulness

Policy machinery is archaic

The complexity and speed of events demand a modular, expert approach
Once-and-for-all legislation is shifting towards continual “managerial” review
More and more issues are becoming technical, rather than aspirational.
The relevant knowledge pool often lies beyond government.
An expert, confident population seeks a more direct voice



Multi-layered, focused, agency-based governance, with more expert representation
A tier of integrative, strategic governance focused more on process and integration

Weak signals, harsh impacts

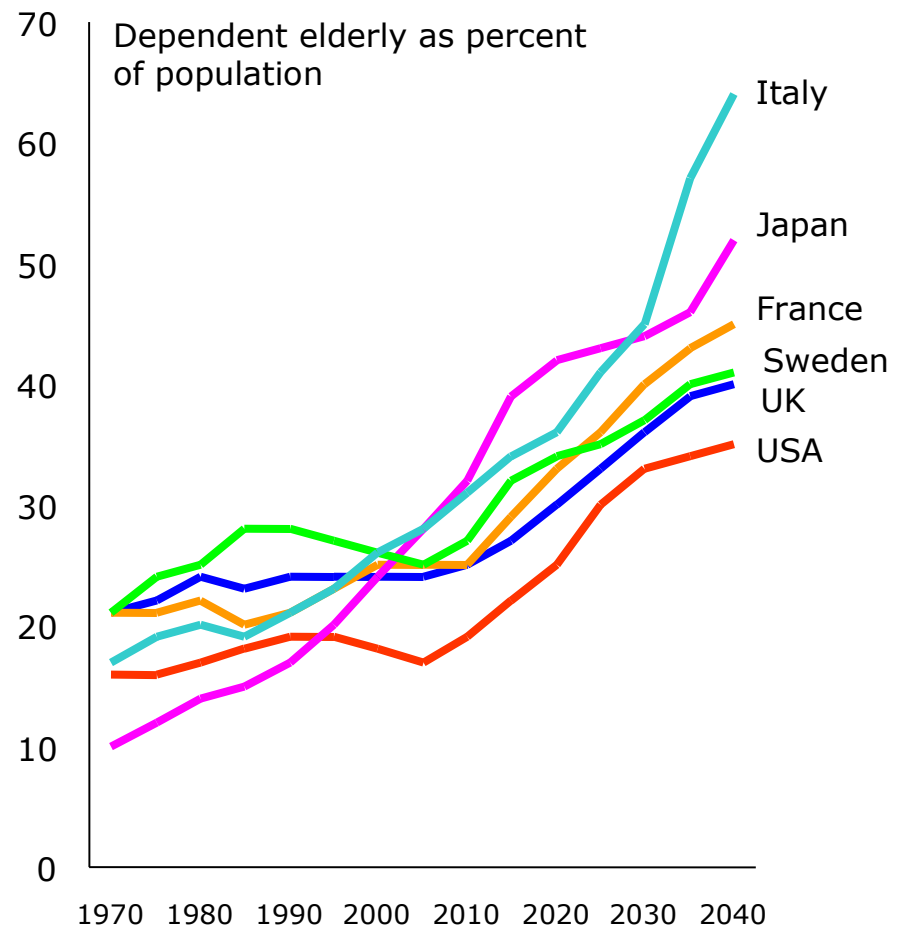
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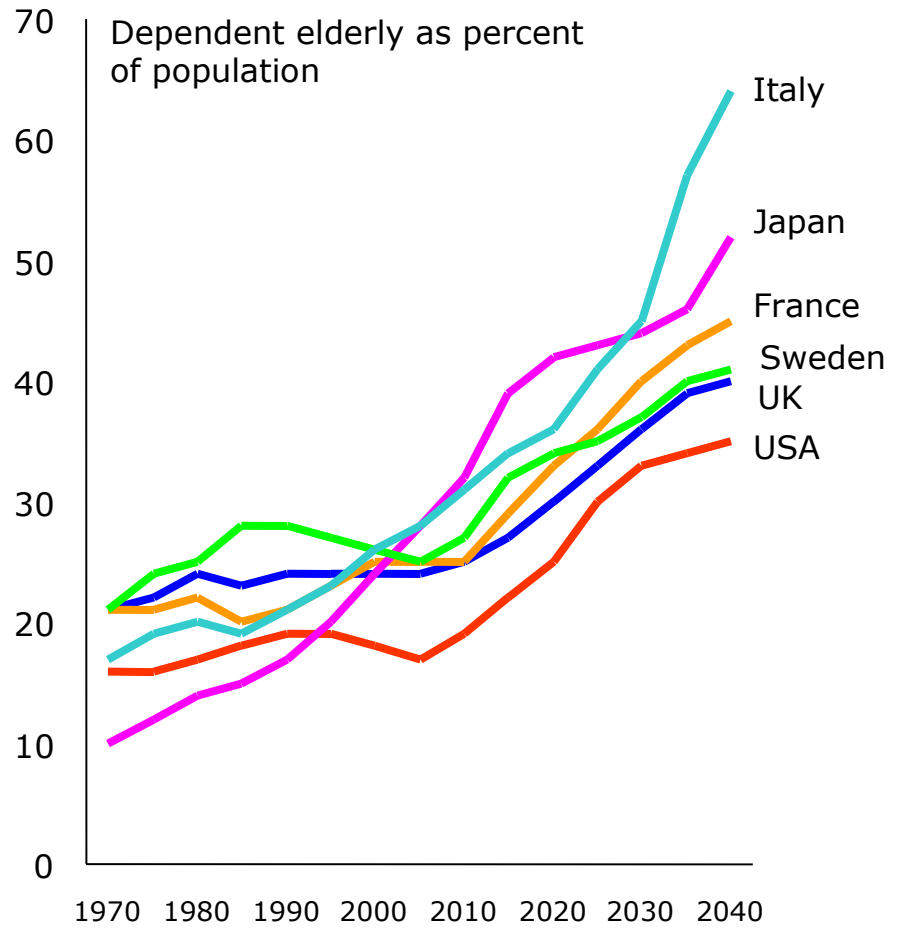
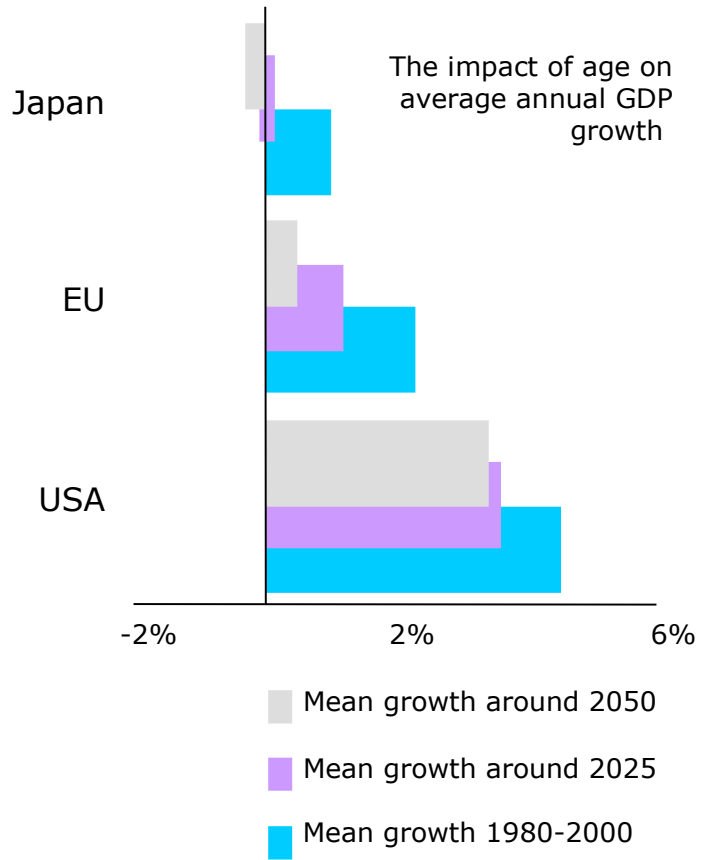
Political cohesion and consent

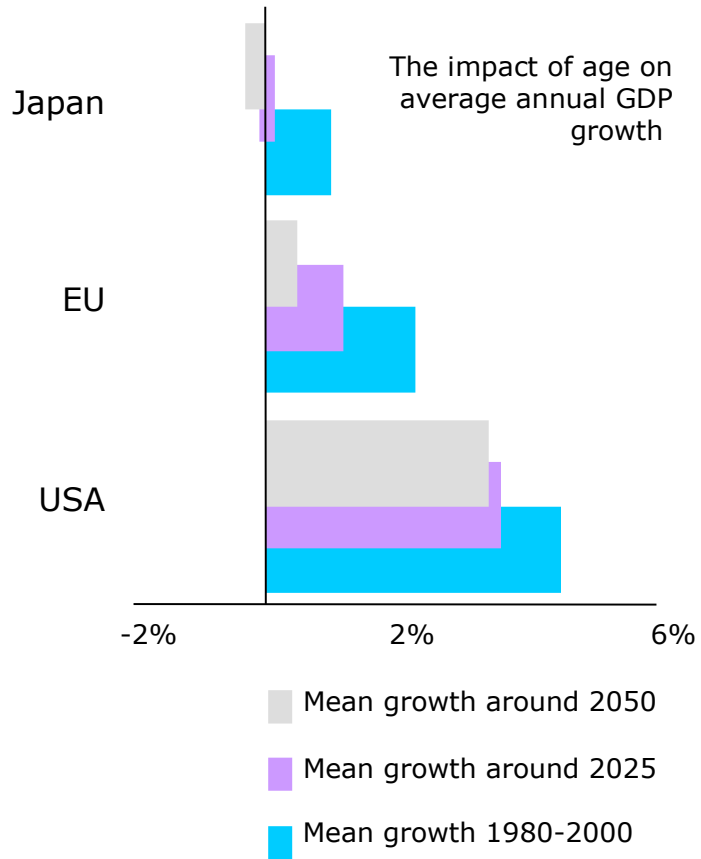
Demographics

Issues of wealth generation









Pensions

Health

Care

Weak signals, harsh impacts

- Difficulties in the wealthy world
- Two cases for 2020

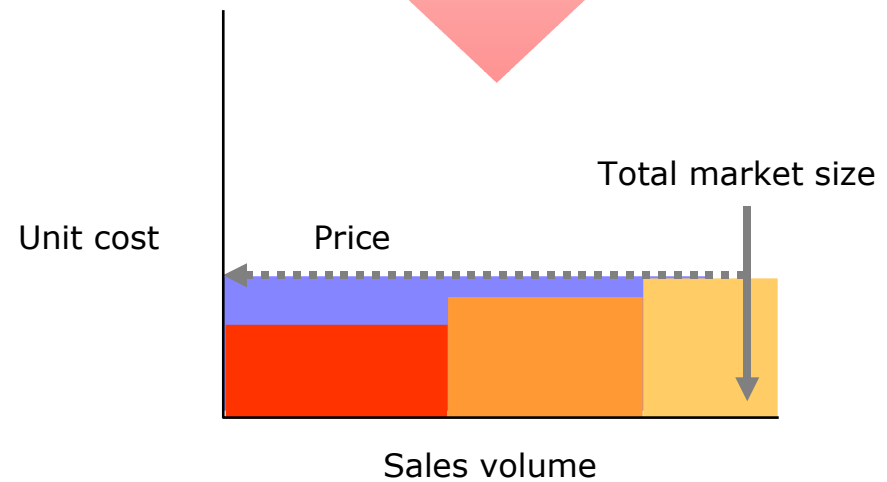
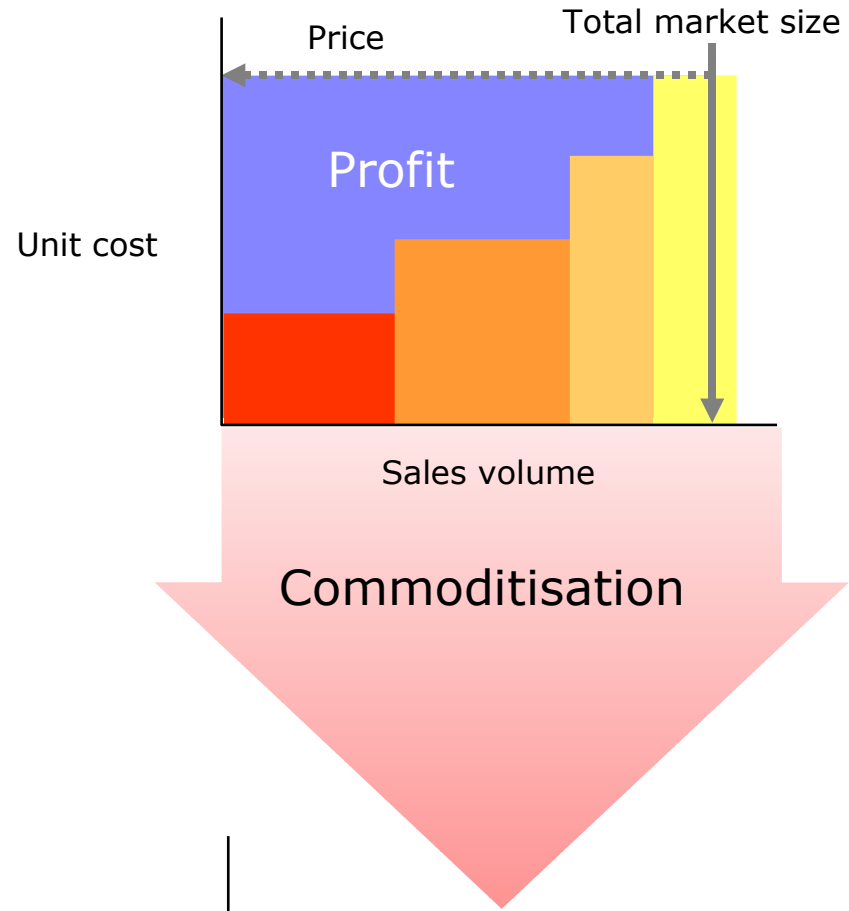
Political cohesion and consent

Demographics

Issues of wealth generation

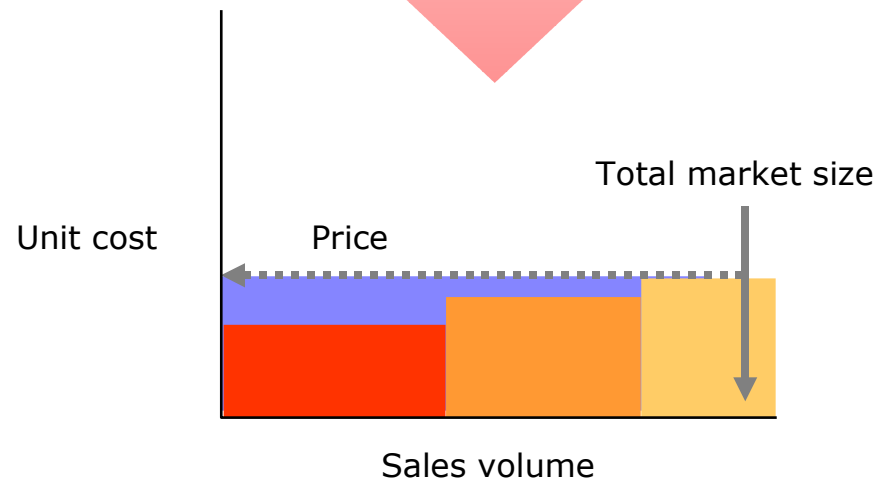
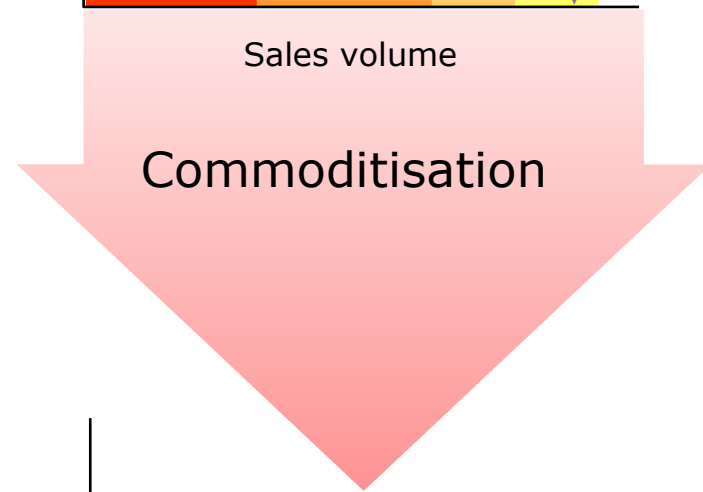
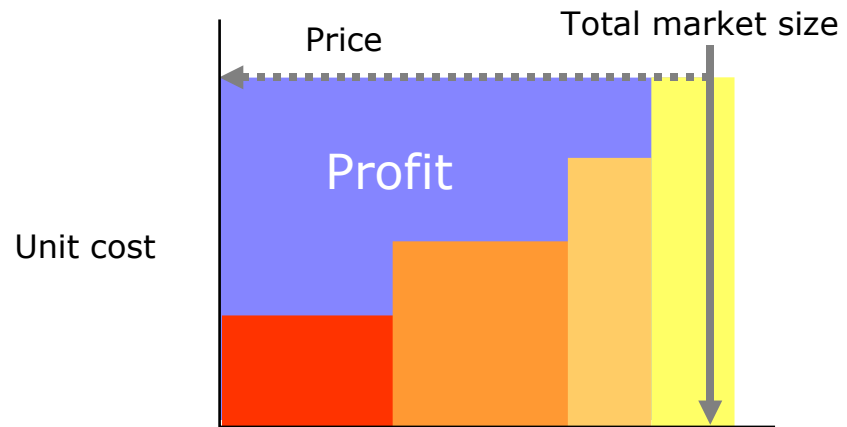


- Good for the consumer
- Difficult for commerce



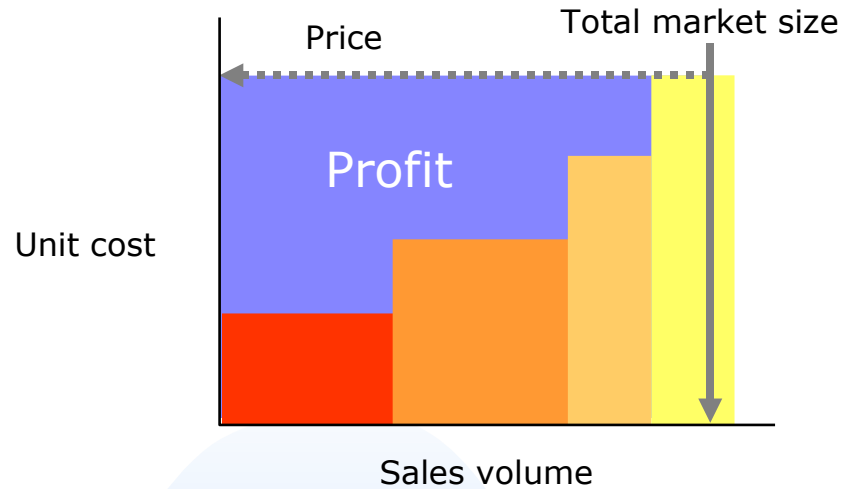
Innovation and new markets

Generic responses to competition



Innovation
and new markets

Generic responses
to competition



Risk containment

Consolidation

Cost management

Process streamlining

Benchmarking

Measurement and accountability

Continuous improvement

Bureaucratisation and
algorithmatisation

Total quality management

Outsourcing

Internal segmentation

Supply chain management

Working capital management

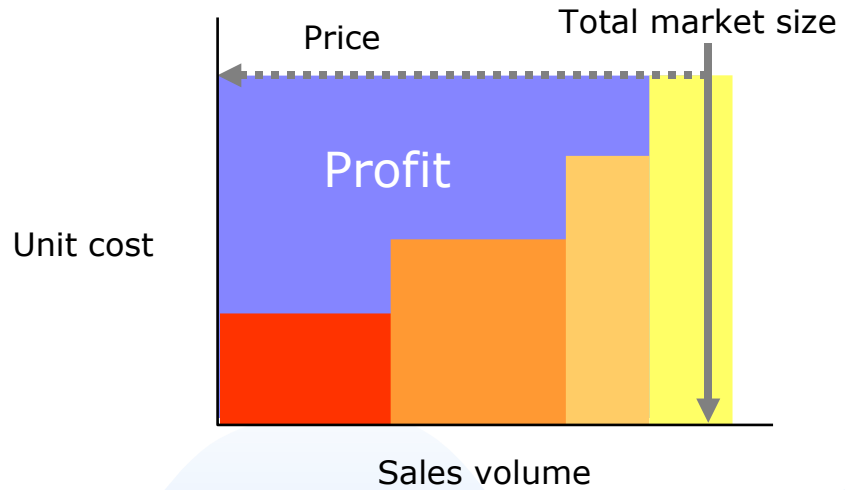
The stereotyped customer

Flight to the middle

Unspecified goals, uncertain tools

Specified, defined tools and goals

Innovation
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The stereotyped customer

Flight to the middle

Unspecified goals, uncertain tools

Specified, defined tools and goals



?

Guidance

Measurement

Accountability

Motivation

Tools

Unspecified goals, uncertain tools

- Exact metrics
- Clear deliverables
- Economies of scale
- IT is easily applicable
- Silo management works
- Resource planning works
- Risks are familiar and transparent
- People act as replaceable modules

Specified, defined tools and goals



- No metrics
- 'Know it when you see it'
- Existing structures often subverted
- IT is seldom more than an enabling tool
- Silo management is actively unhelpful
- Traditional resource planning unhelpful
- New and unfamiliar risks
- People act as knowledge agents

Unspecified goals, uncertain tools

- Exact metrics
- Clear deliverables
- Economies of scale
- IT is easily applicable
- Silo management works
- Resource planning works
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Specified, defined tools and goals

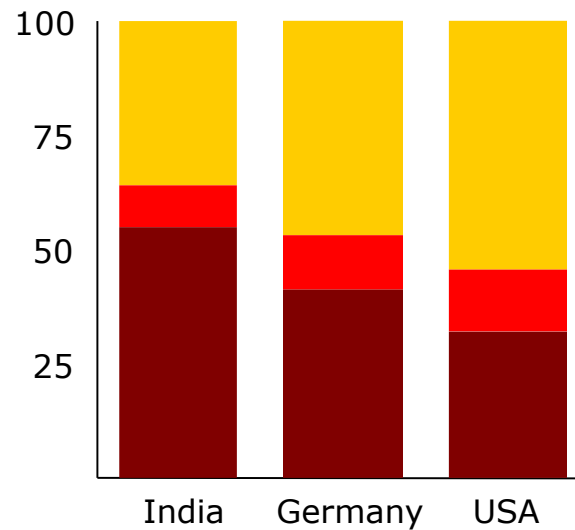


- Direction and renewal cannot be delivered 'top down'
- Options arise from three key elements:
 - Consolidation and synthesis of the knowledge stored in individual heads
 - A common sense of context, of what the organisation is trying to achieve
 - Machinery for converting ideas and options into motivation, action and reward
- Each of these elements are extremely complex, and need supporting processes
- Few organisations have even the skeleton of this in place

Unspecified goals, uncertain tools

Specified, defined tools and goals

Lifetime project costs in manufacturing (% share)



■ Cost of gaining insight

■ Cost of managerial oversight

■ Cost of physical transformation

- Ever-shortening life cycles
- Explosion in knowledge and connectivity
- "Specified" activities increasingly delocalised
- Firms have only three long-term defensible capabilities:

Cost control

Capacity to innovate

Resilience and predictability

Weak signals, harsh impacts

- The drivers of change



- Two cases for 2020



Adaptation is forced on nations and firms through the workings of impersonal forces



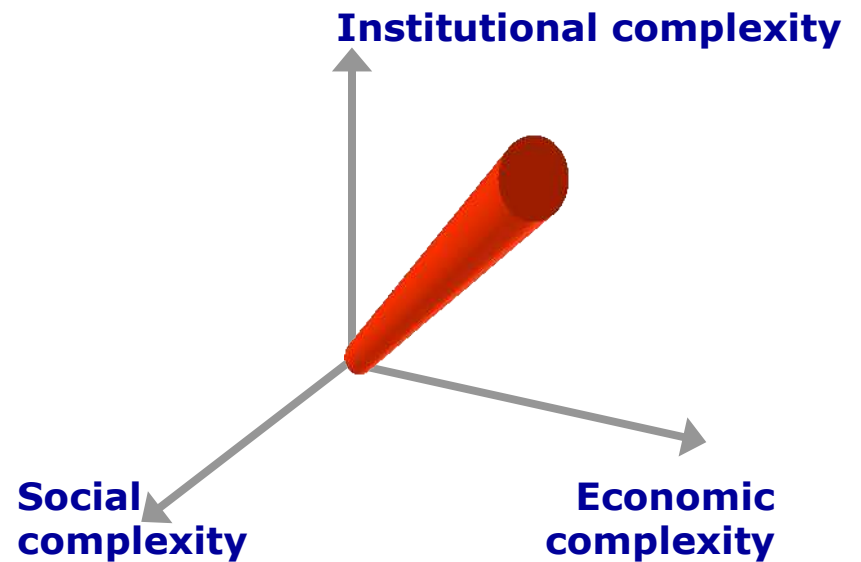
Social and institutional structures tend both to limit and to shape the nature of events



Adaptation is forced on nations and firms through the workings of impersonal forces



Social and institutional structures tend both to limit and to shape the nature of events




The international environment
becomes increasingly open and
well-policed

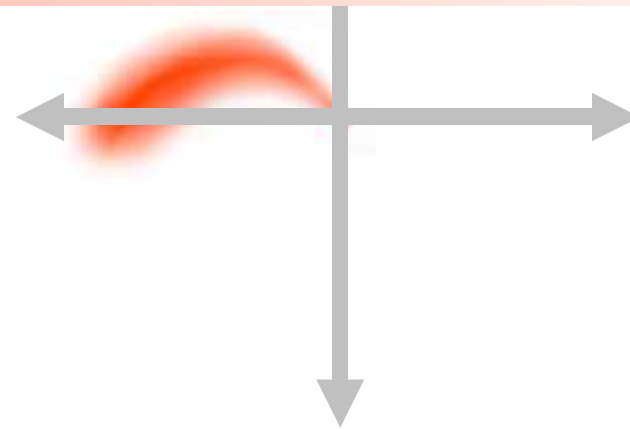
Adaptation is forced on
nations and firms through
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Social and institutional
structures tend both to
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International relations become
increasingly fractious and complex.



- 
- Effective US hegemony in the international arena, NAFTA boom
 - Japanese banking reform and institutional re-design
 - European restructuring
 - A dominant paradigm: competition, no boundaries, no limits
 - ... but, an underlying entanglement of commerce and government



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- ... but, an underlying entanglement of commerce and government

Rigidities such as labour and sectoral protection or subsidy lessened
Management teams exposed to international capital market norms
Labour mobility and equilibrating wage rates
Genuine regionalisation in decision-taking



The international environment becomes increasingly open and well-policed

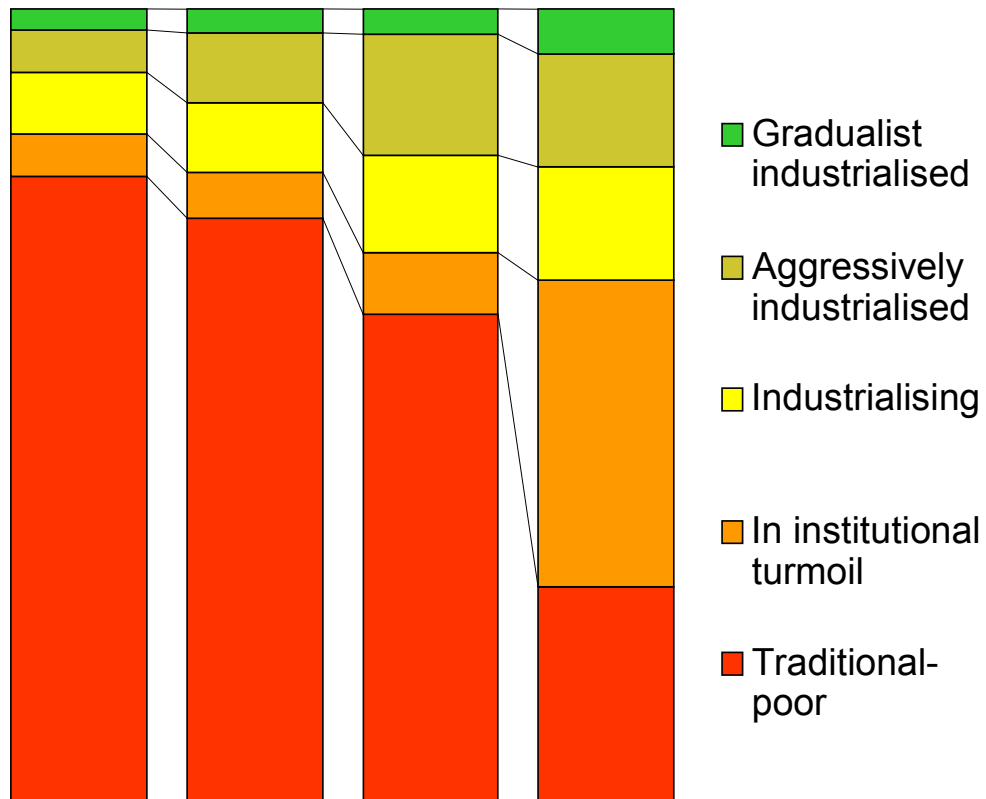
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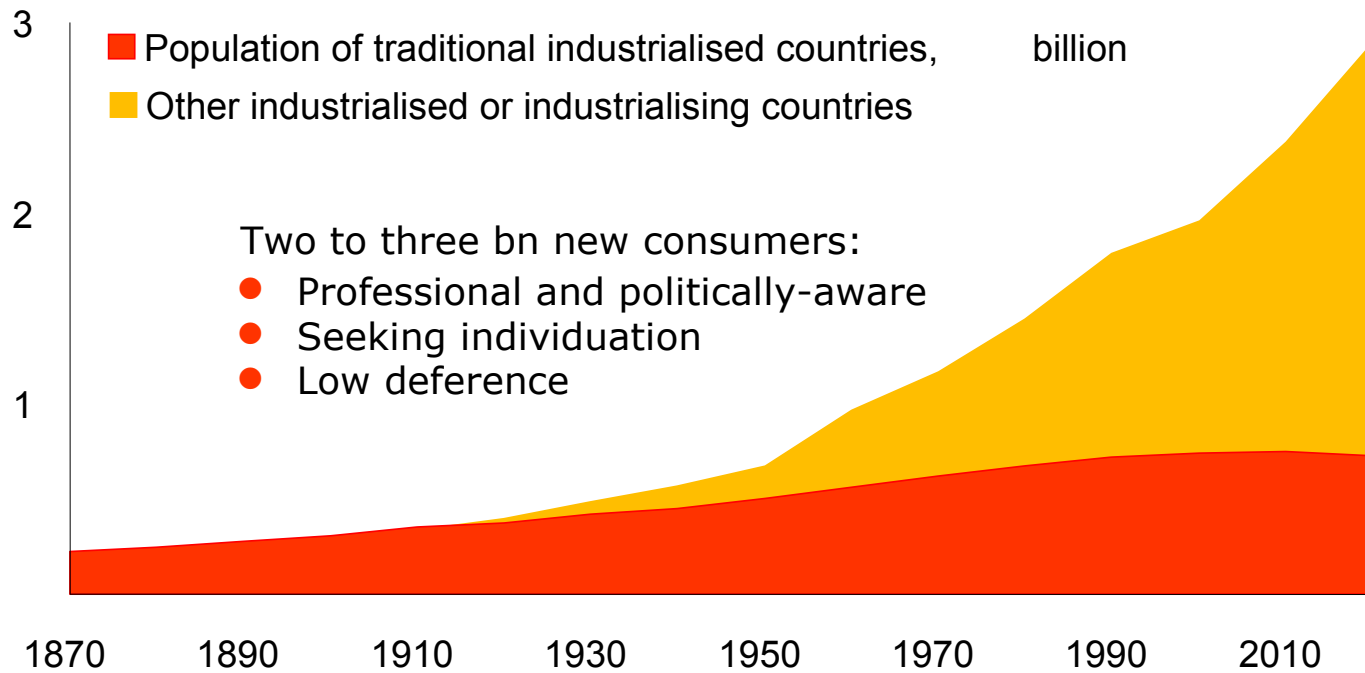
Proportional make-up of world population



1900 1950 2000 2010

International relations become increasingly fractious and complex.





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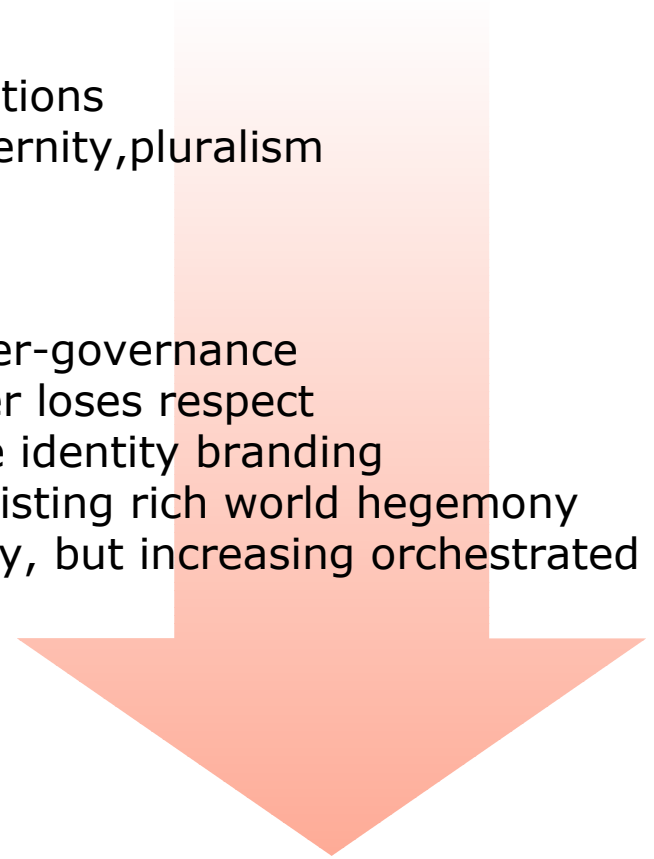


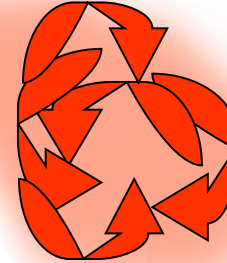
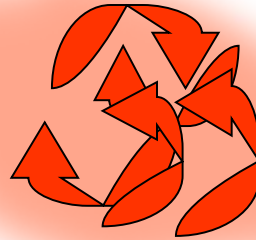
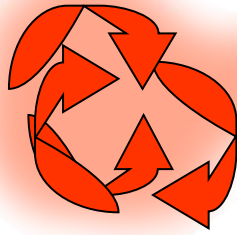
In the industrial world

- The “faster, faster” syndrome
- Over-close state and private sector relations
- A growing rejectionist movement: modernity, pluralism

In the developing world

- Economic disruption and economic under-governance
- Weak tacit institutions, traditional power loses respect
- New consuming classes begin to pursue identity branding
- Trans-national political movements, resisting rich world hegemony
- Two billion still living in absolute poverty, but increasing orchestrated





Slowly changing systems



driven faster

Isolated systems



connected together

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The international environment becomes increasingly open and well-policed

Adaptation is forced on nations and firms through the workings of impersonal forces

Social and institutional structures tend both to limit and to shape the nature of events

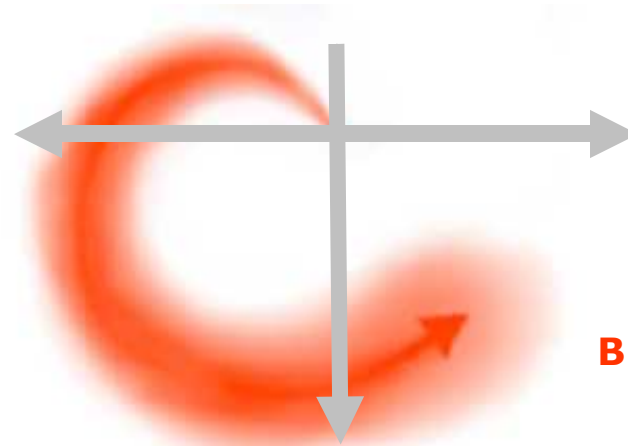
International relations become increasingly fractious and complex.

Broken Edge



- Industrial world stock market re-adjustment
- Economic turmoil in the industrialising markets
- The former prevailing paradigm - competition, growth - discredited
- Crisis in the poor countries, rejectionism and renaissance of terrorism
- Latent international political movements, popular concerns now unleashed
- Withdrawal from outsourcing and un-economic "policy-related" investments

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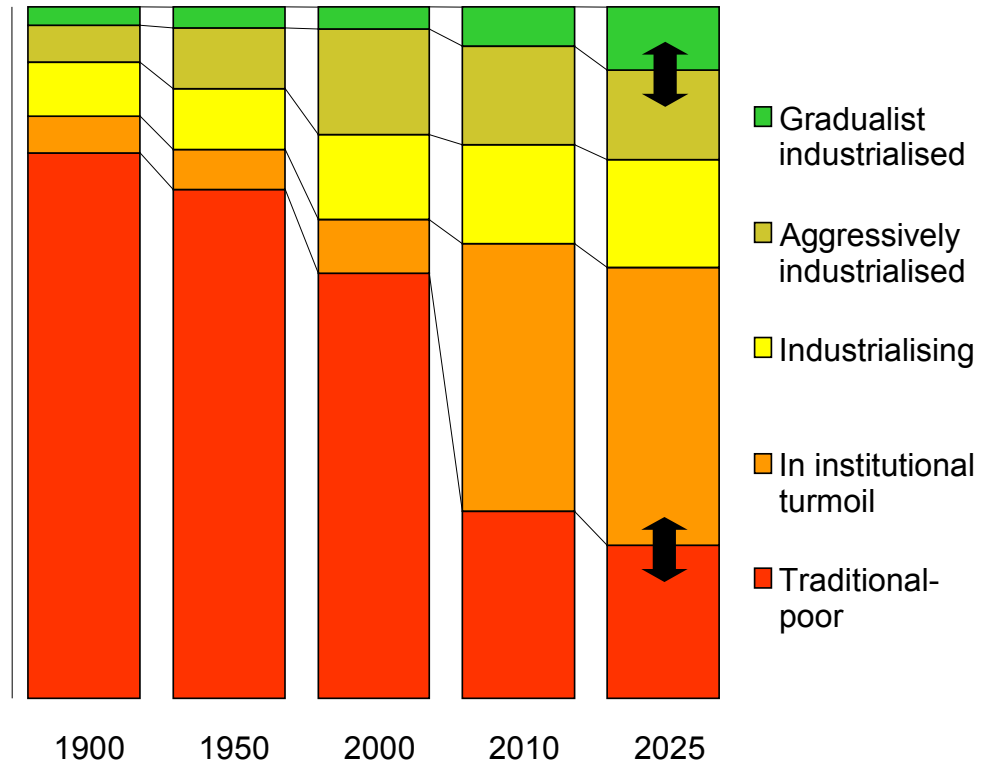
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Re-thinking the paradigm
Persistent instability



Re-thinking the paradigm

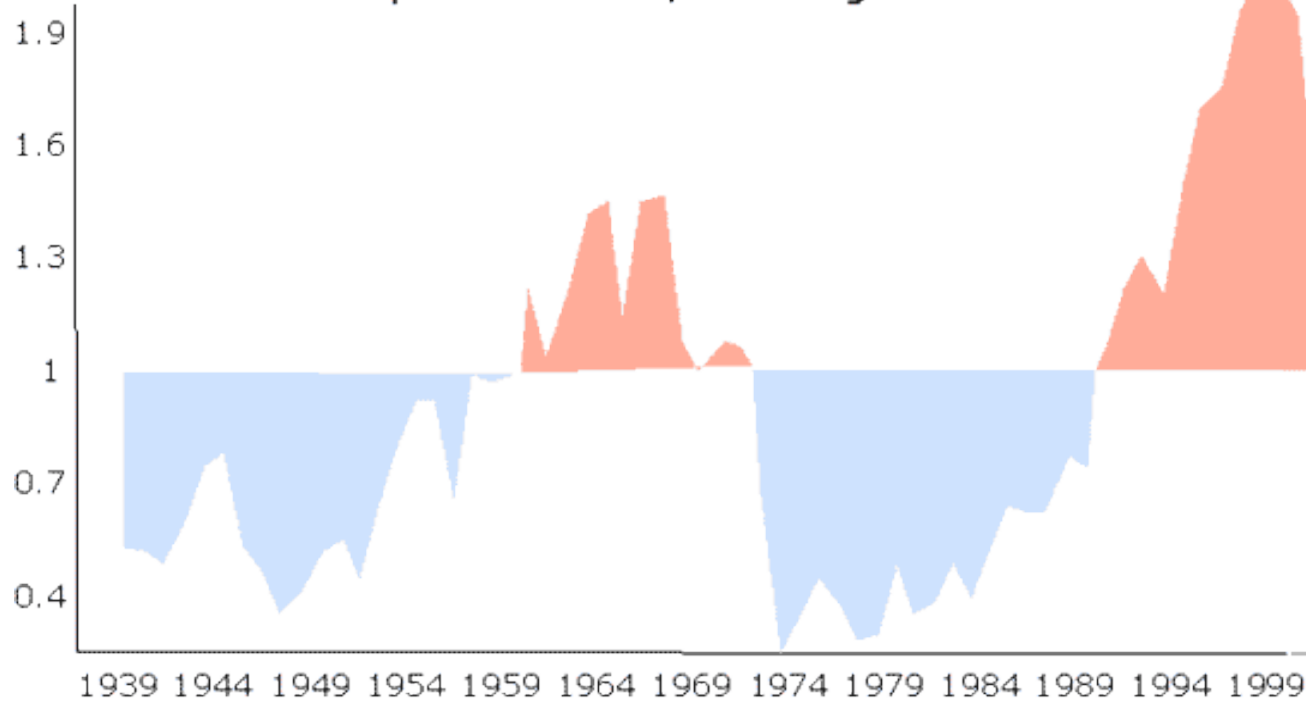
Managing complexity

- Political cohesion and closure:
 - ➔ Coping with demographics
 - ➔ Absorbing fast change
- In commerce:
 - ➔ Resilience & adaptation
 - ➔ Competitiveness
 - ➔ Triple bottom line
- Managing the new linkages:
 - ➔ Equity, or anyway legitimacy
 - ➔ Finding sources of security

Suppose that the paradigm has already failed...

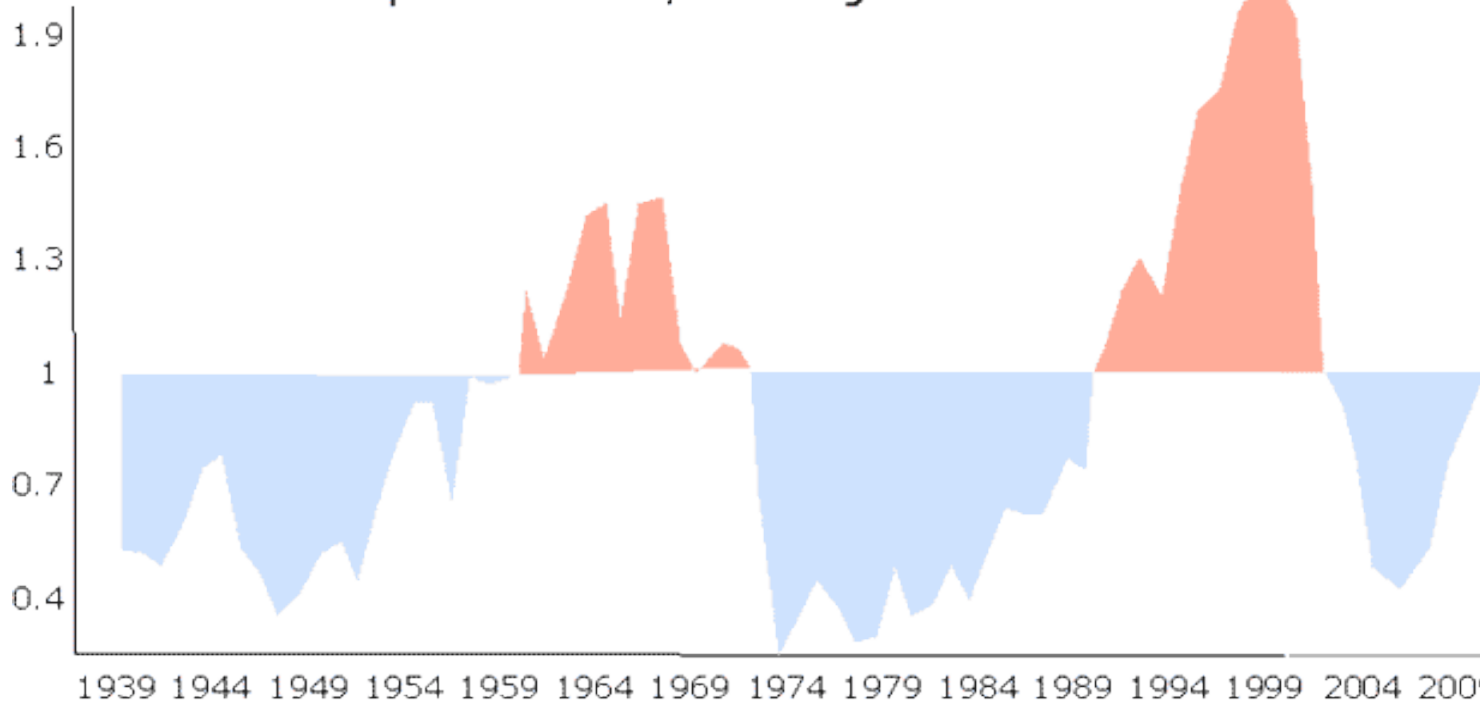


Ratio of US stock market capitalisation to corporate net worth at replacement cost, excluding land



Suppose that the paradigm has already failed...

Ratio of US stock market capitalisation to corporate net worth at replacement cost, excluding land



- Political cohesion and closure
 - pensions, confidence, jobs
 - activism, systems-blocking
- In commerce
 - suppression of innovation
 - minimalism and pragmatism
- Managing the new linkages
 - Little attempted or achieved

The international environment
becomes increasingly open and
well-policed

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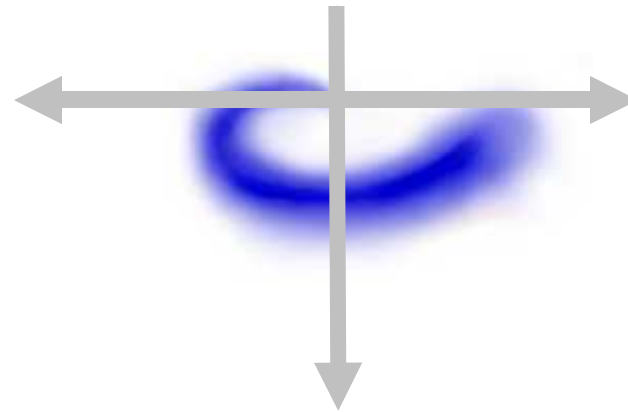


Initially:

- Populist, hobbyist and issue-driven activist politics paralyse decision taking
- Pro-welfare programs, institutional reforms are stopped or put into reverse
- State borrowing increases, but without tax rises: inflation

... and elsewhere in the world

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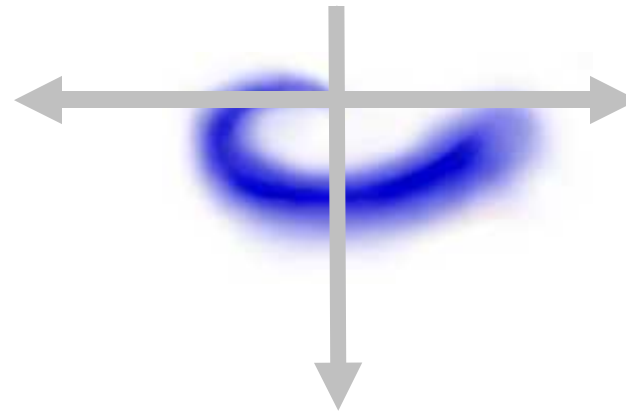
- Slow economic growth produces hardship, but also a time to absorb change
- The new middle class see the industrial world as an old fashioned model
- Relations between these countries, and with the poor nations mature
- Extremist groups find less to react against, & are openly triumphant



However, a successful model for wealth creation and complexity management is emerging in the old industrial nations:

- Managing complexity requires careful analysis, communication and trust
- High-level governance works best through networks of subsidiary debate
- Closure comes from finding trusted, accessible ways of talking about issues
- Explicit steps must be taken to create and maintain this insight and trust
- Analysis is best done in expert networks, but *using* analysis requires more and different kinds of work in make it accessible and trusted

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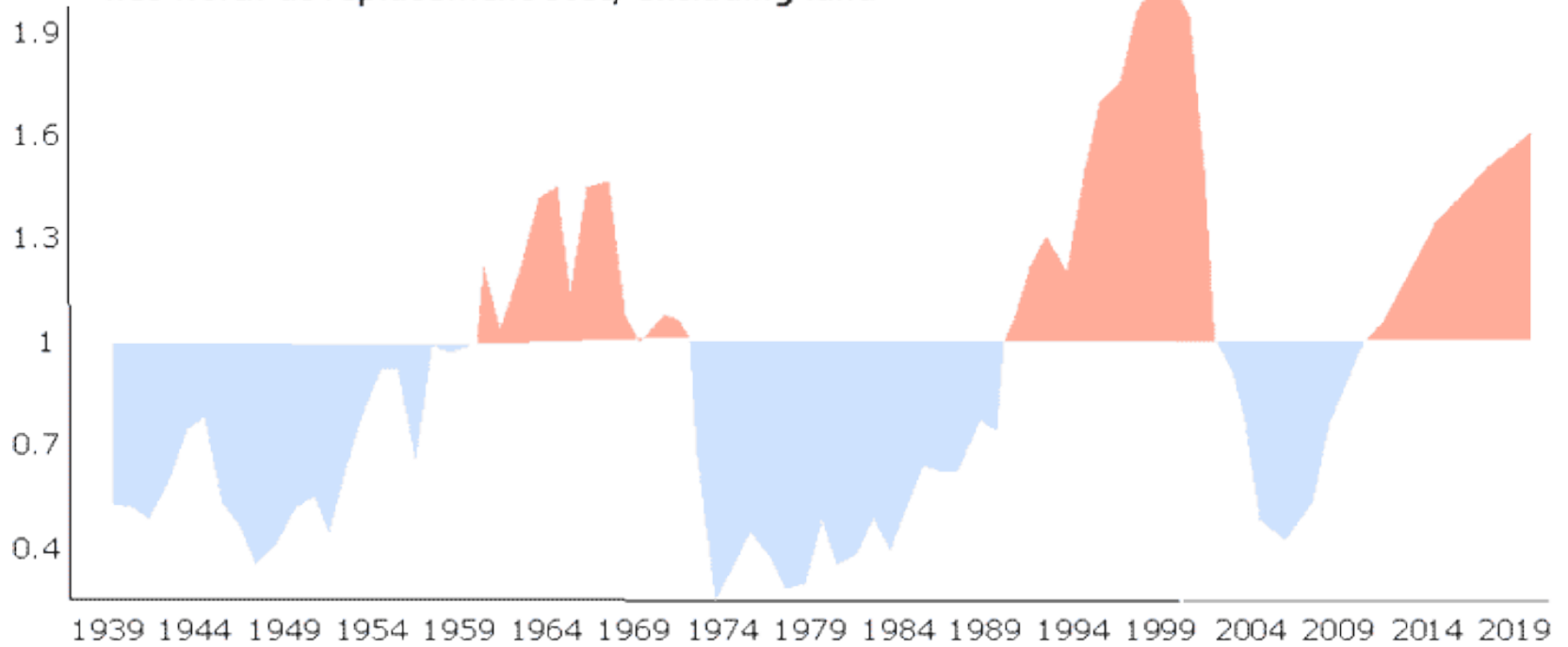
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- The fit with the needs of the knowledge economy is tight
- The link to international systems of collaboration is also strong
- The basis is set for a gradual return to collaborative, rapid growth



Ratio of US stock market capitalisation to corporate net worth at replacement cost, excluding land



- The basis is set for a gradual return to collaborative, rapid growth



The international environment becomes increasingly open and well-policed

New Deal

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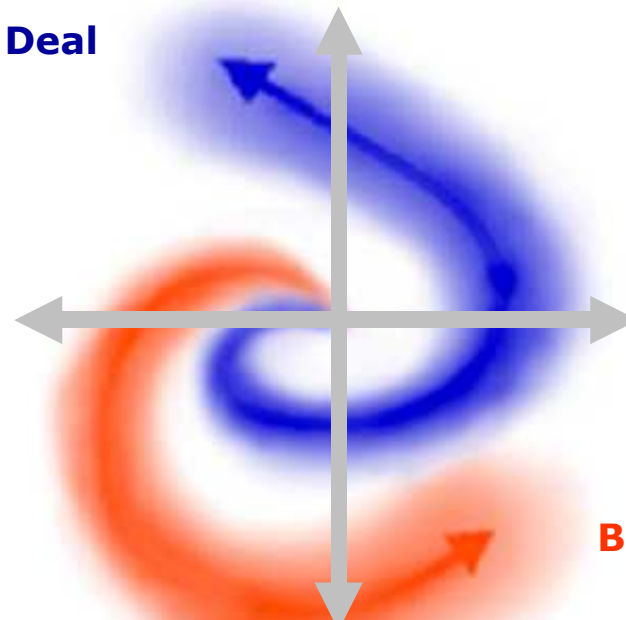


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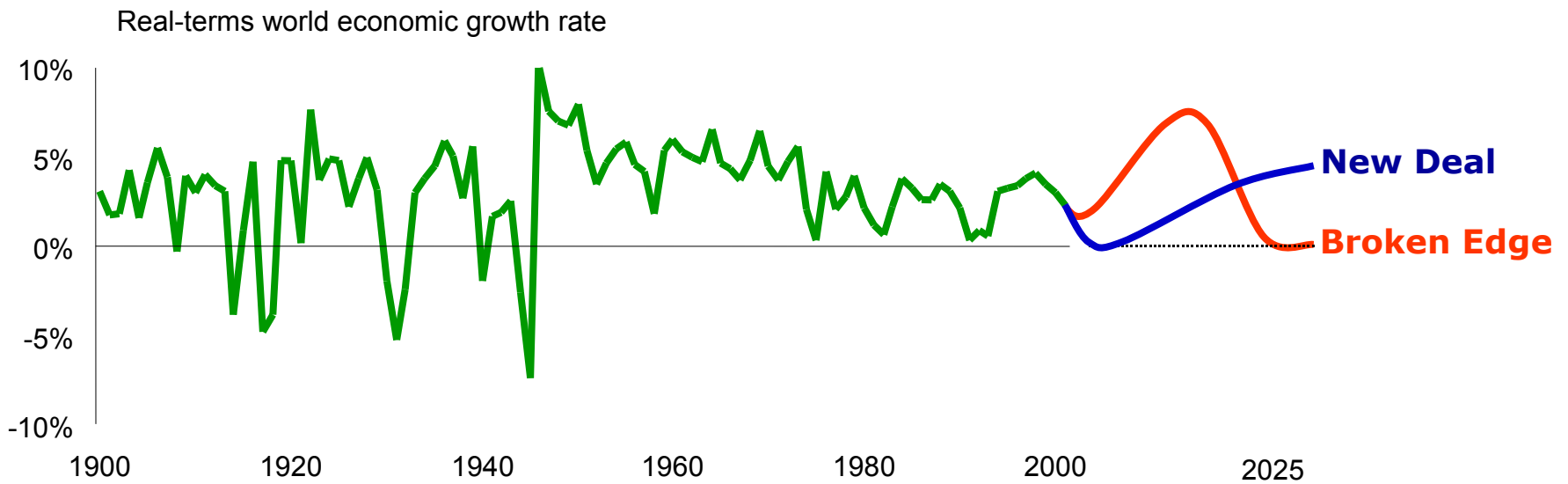


Broken Edge

International relations become increasingly fractious and complex.

These very different worlds generate roughly similar overall rates of economic growth

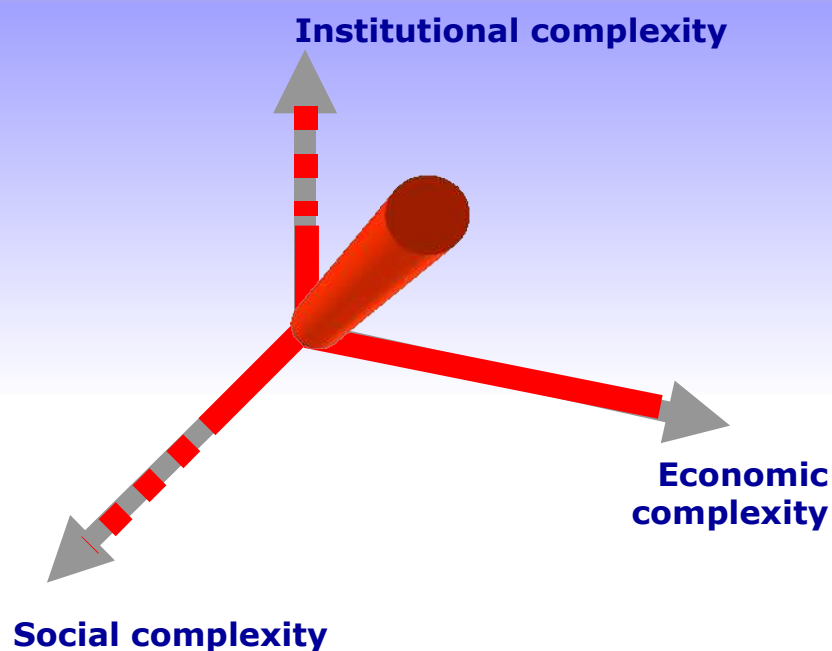




These very different worlds generate roughly similar overall rates of economic growth

... but very different issues

- It is not possible to make only one part of a society more complex
- Commerce is affected by many forces which drive it very quickly
- Conflict will arise if one area runs too much ahead of others



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- It is not possible to make only one part of a society more complex
- Commerce is affected by many forces which drive it very quickly
- Conflict will arise if one area runs too much ahead of others
- Complexity management is itself a major source of wealth
- The world's social framework is going to change sharply
- Existing systems of governance are unlikely to be able to cope, either nationally nor internationally, with foreseeable complexity
- Failure to address these issues will polarise the world in ways which make the major issues virtually impossible to address

These very different worlds generate roughly similar overall rates of economic growth

... but very different issues



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