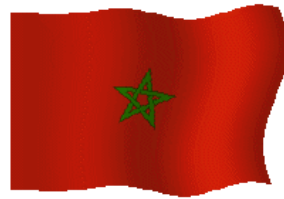


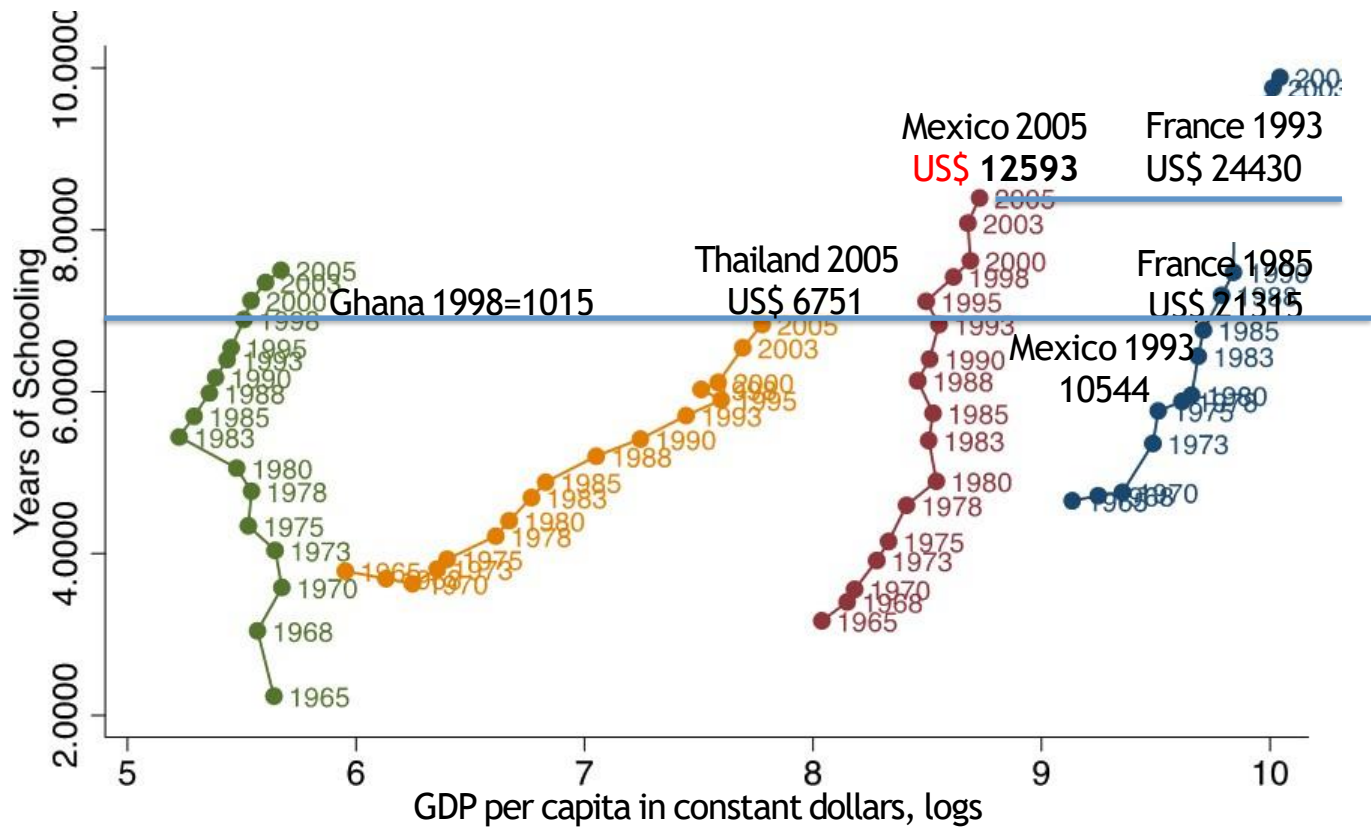
**ESCWA
EXPERTS GROUP MEETING**



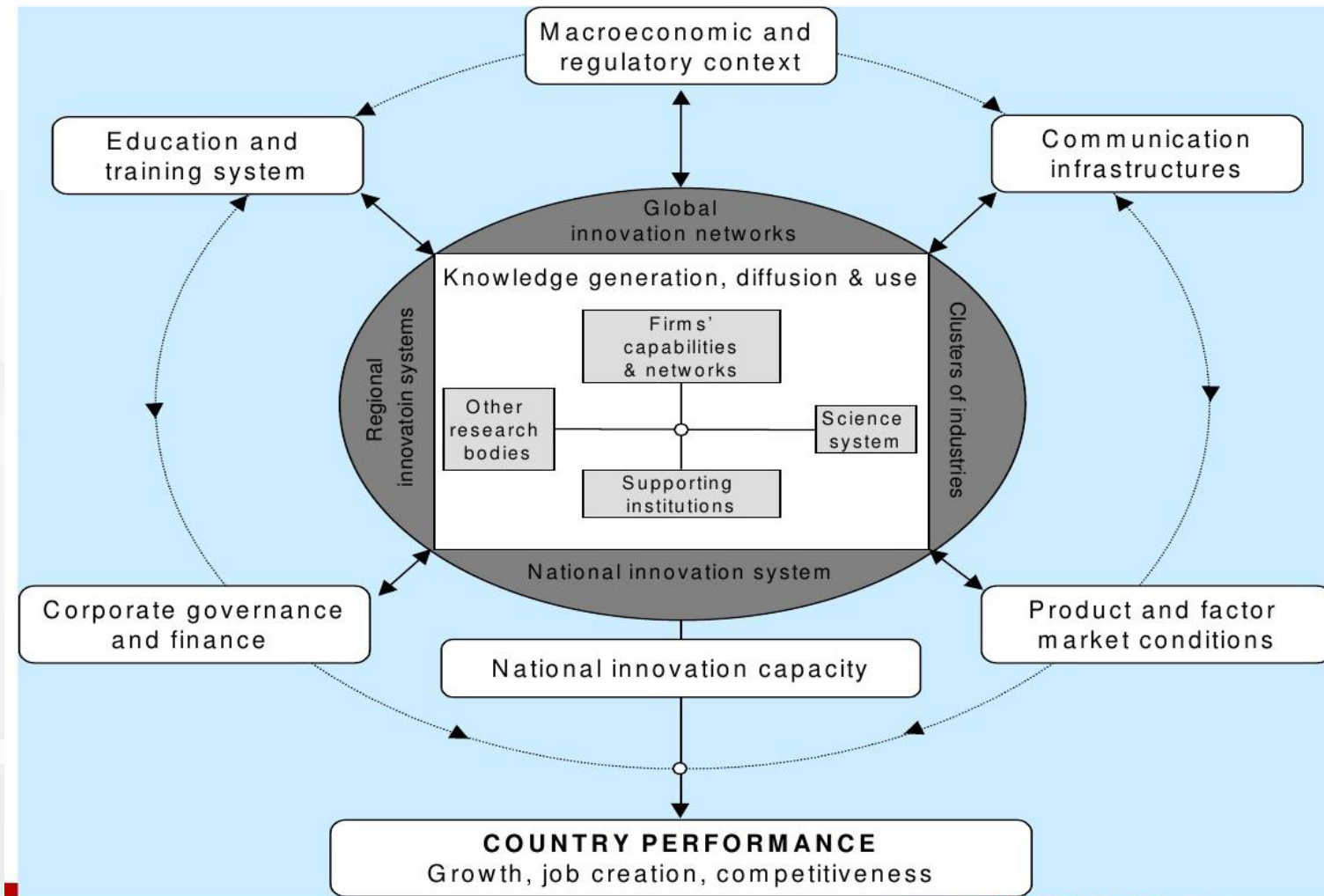
***ELEMENTS OF THOUGHT TOWARDS PROMOTING
COLLABORATION ON INNOVATION AND TECHNOLOGY
TRANSFER IN THE ARAB REGION***

AMMAN-JIRDAN

Years of schooling and income per capita 1965--2005



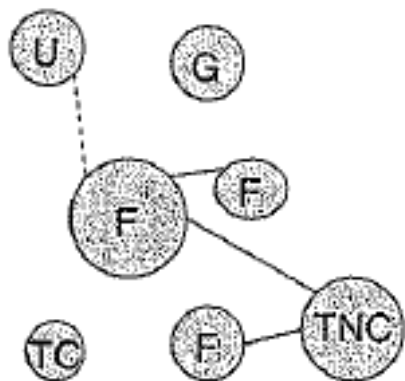
National System of Innovation



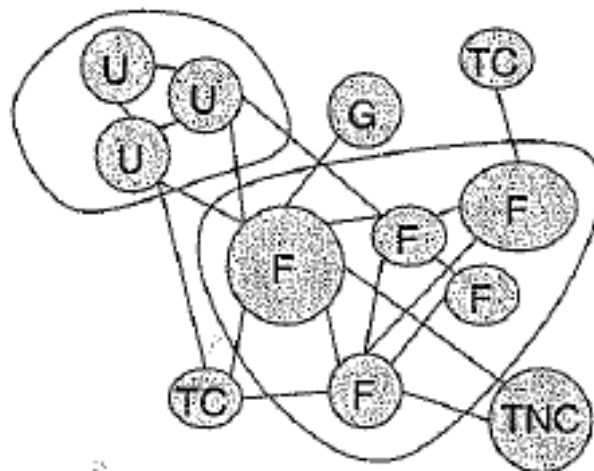
- ❑ The efficiency of of NSI depeds on the balanced combination of **4 capacities** :
- ❑ 1- **Creation of** knowledge 2- **Diffusion of** knowledge 3- **Absorption of** knowledge 4- **Utilisation** of knowledge for commercial purposes

NSI in developing countries

Emerging IS



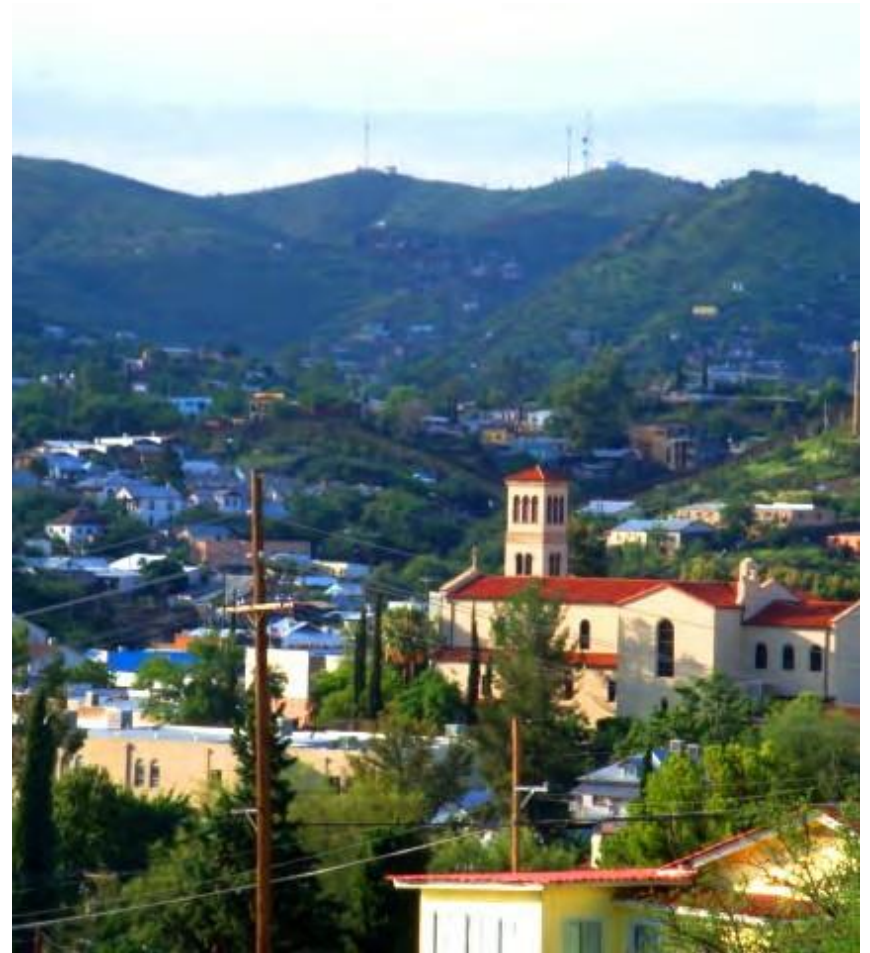
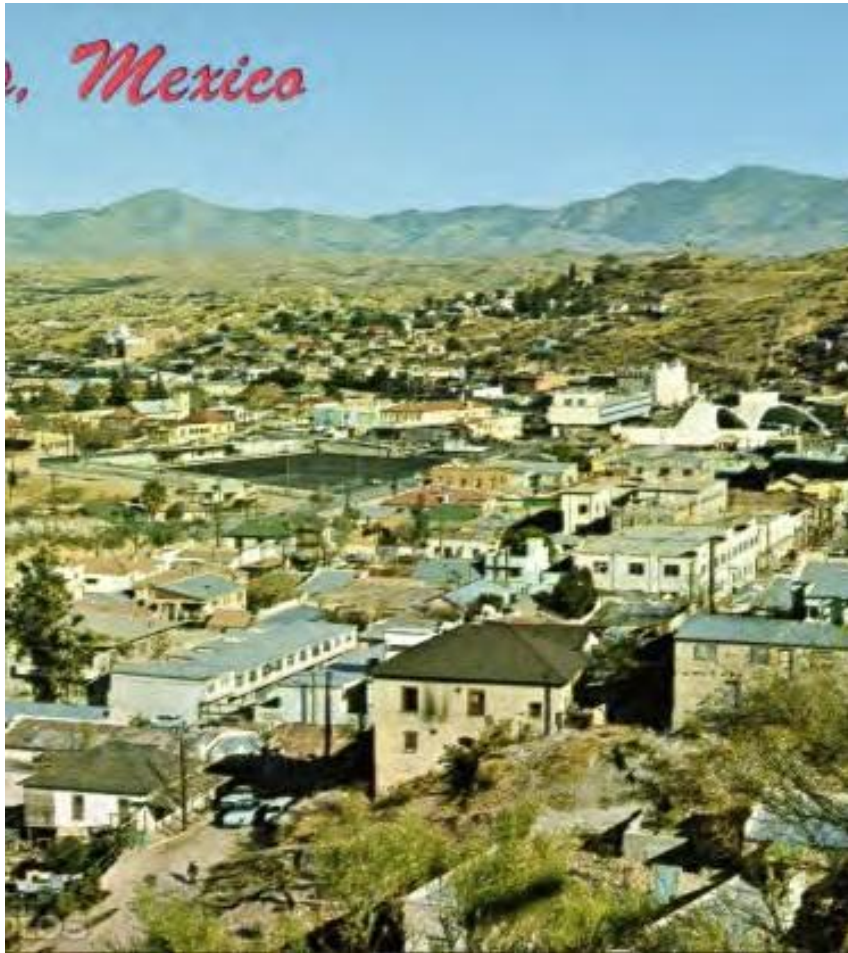
Mature (well functioning) IS



Time

- F** Indigenous firms
- U** Universities
- TC** Technological centres
- G** Government
- TNC** Transnational corporations

The two Nogales



Guerrero

\$5,281 per capita



Sinaloa

\$10,945 per capita



Guanajuato

\$20,827 per capita

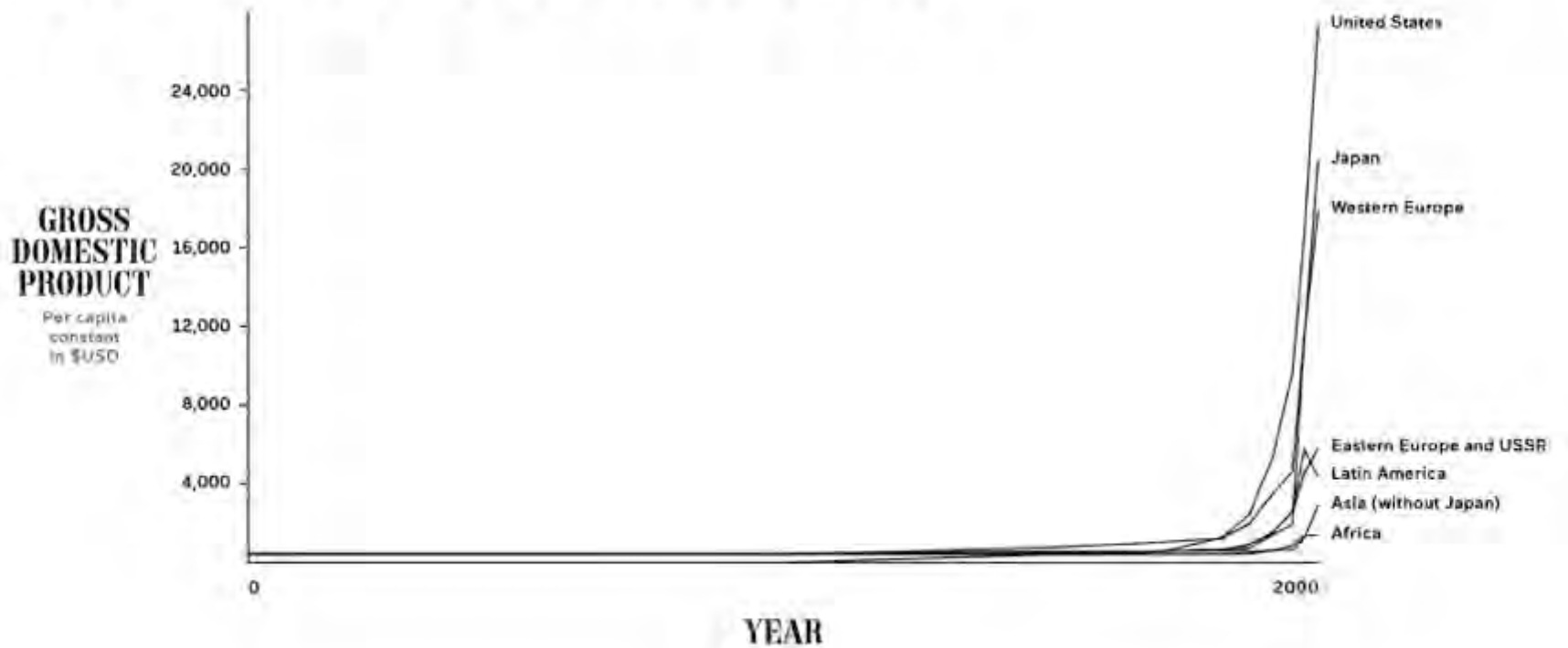


Nuevo Leon

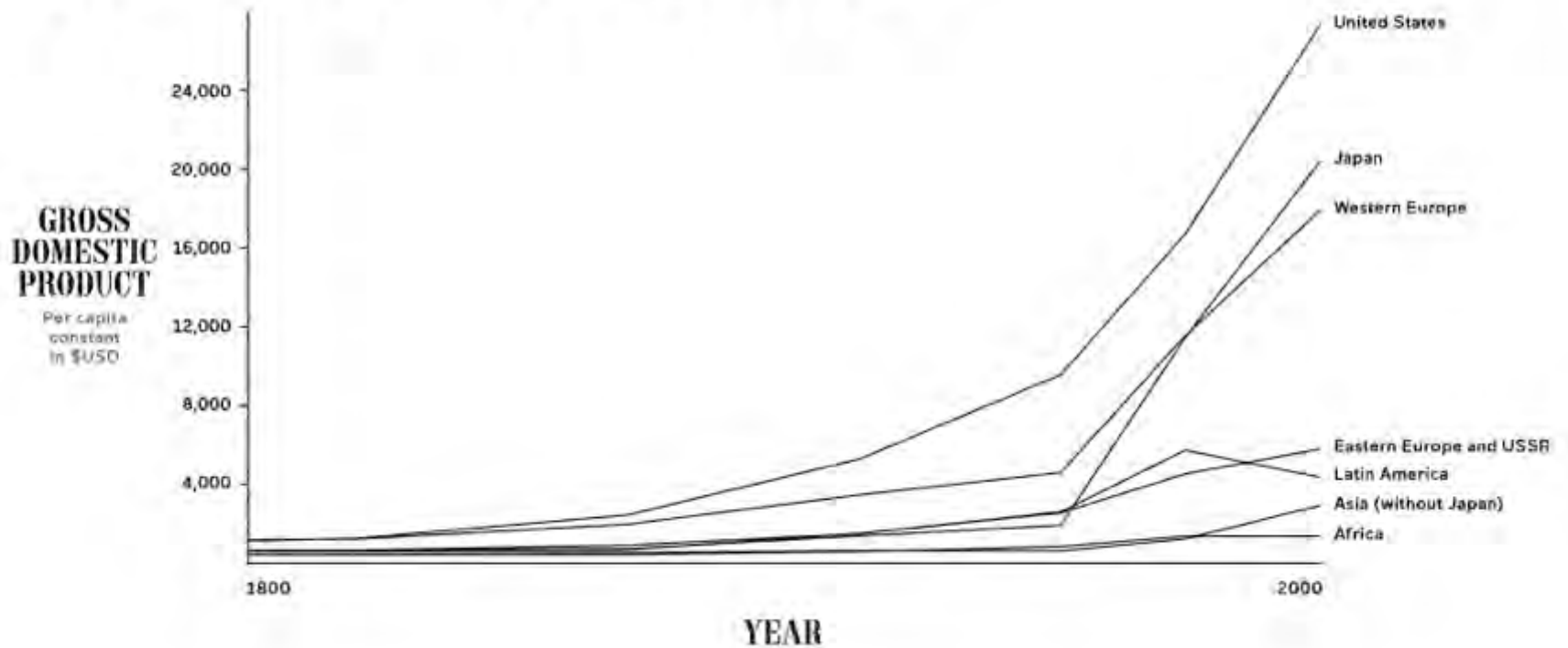
\$42,281 per capita



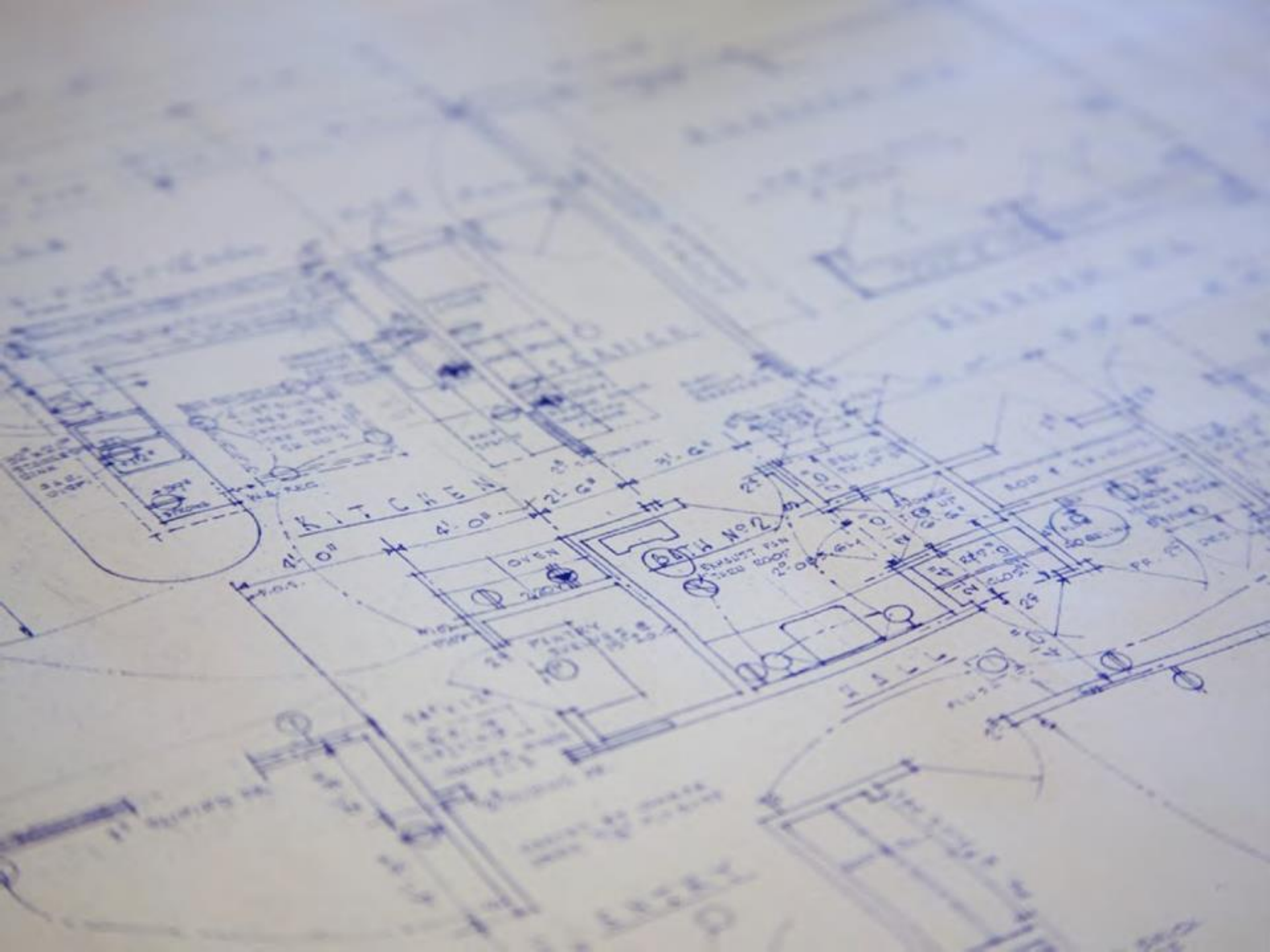
The Great Acceleration



The Great Divergence









HANJIN



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Lift (force)

From Wikipedia, the free encyclopedia

For other uses, see [Lift \(disambiguation\)](#).

A fluid flowing past the surface of a body exerts a force on it. **Lift** is the component of this force that is perpendicular to the oncoming flow direction.^[1] It contrasts with the drag force, which is the component of the surface force parallel to the flow direction. If the fluid is air, the force is called an aerodynamic force. In water, it is called a hydrodynamic force.

Contents [hide]

- Overview
- Simplified physical explanations of lift on an airfoil
 - Flow deflection and Newton's laws
 - Limitations of deflection/turning
 - Increased flow speed and Bernoulli's principle
 - Conservation of mass
 - Limitations of explanations based on Bernoulli's principle
- Basic attributes of lift
 - Pressure differences
 - Angle of attack
 - Airfoil shape
 - Air speed and density
 - Lift coefficient
 - Pressure integration
- A more comprehensive physical explanation
 - Lift involves action and reaction at the airfoil surface and is felt as a pressure difference
 - The airfoil affects the flow over a wide area around it
 - The pressure differences and the changes in flow speed and direction support each other in a mutual interaction
- The understanding of lift as a physical phenomenon
- Mathematical theories of lift
 - Navier-Stokes (NS) equations
 - Reynolds-Averaged Navier-Stokes (RANS) equations
 - Inviscid-flow equations (Euler or potential)
 - Linearized potential flow
 - Circulation and the Kutta-Joukowski theorem
 - Momentum balance in lifting flows
- Lift of three-dimensional wings
- Viscous effects: Profile drag and stalling



Knowhow needs to be in brains





Who has more knowhow?



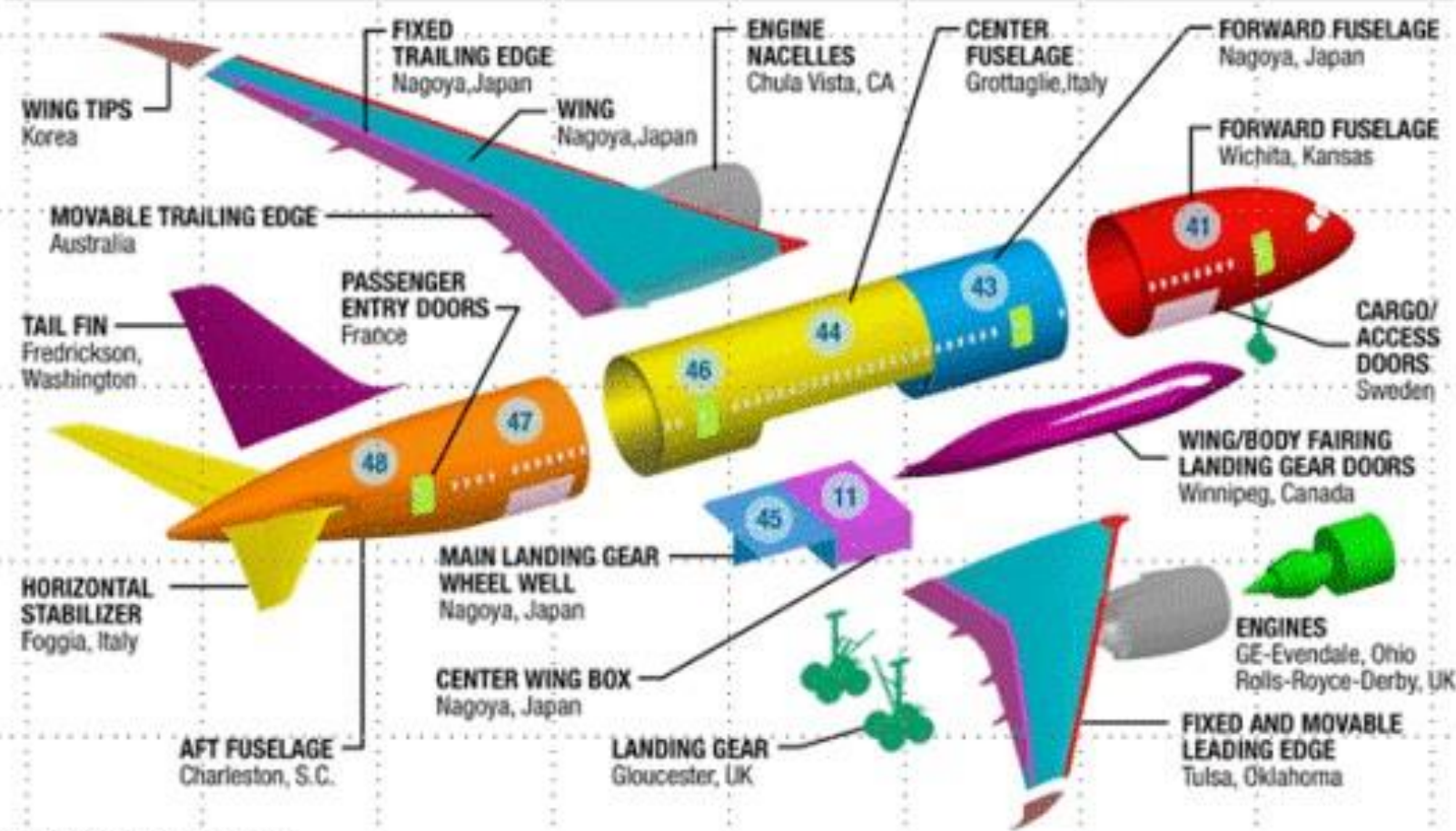






THE COMPANIES

U.S.	CANADA	AUSTRALIA	JAPAN	KOREA	EUROPE
Boeing	Boeing	Boeing	Kawasaki	KAL-ASD	Messier-Dowty
Spirit	Messier-Dowty		Mitsubishi		Rolls-Royce
Vought			Fuji		Latecoere
GE					Alenia
Goodrich					Saab







AMERICA'S FAVORITE WORD GAME

The

DELUXE TURNTABLE SCRABBLE CROSSWORD GAME

FEATURING
ROTATING
BOARD

*Theory of Economic
Development...*



a



a
at

cat
act



a
at
cat

art
rat
car

act
tar
cart



cilantros
 contrails
 gnostical
 nostalgic
 triclosan
 agnostic
 antilogs
 calorist
 cantoris
 carlings
 caroling
 carotins
 castling
 catlings
 catling

clangors
 clarinos
 clarions
 clarting
 coasting
 coatings
 congrats
 contrail
 cortinas
 cotingas
 locating
 oracling
 organics
 organist
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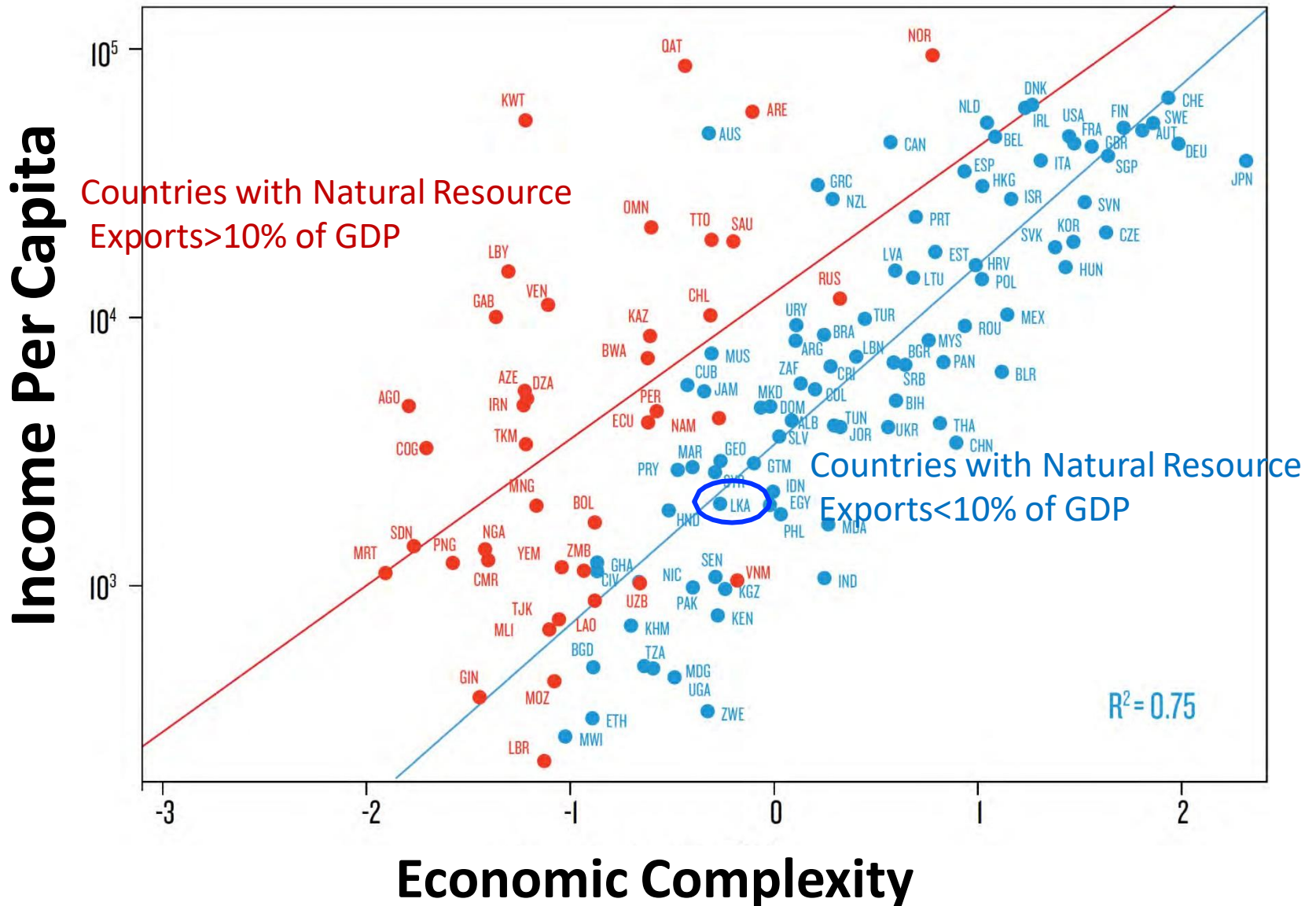
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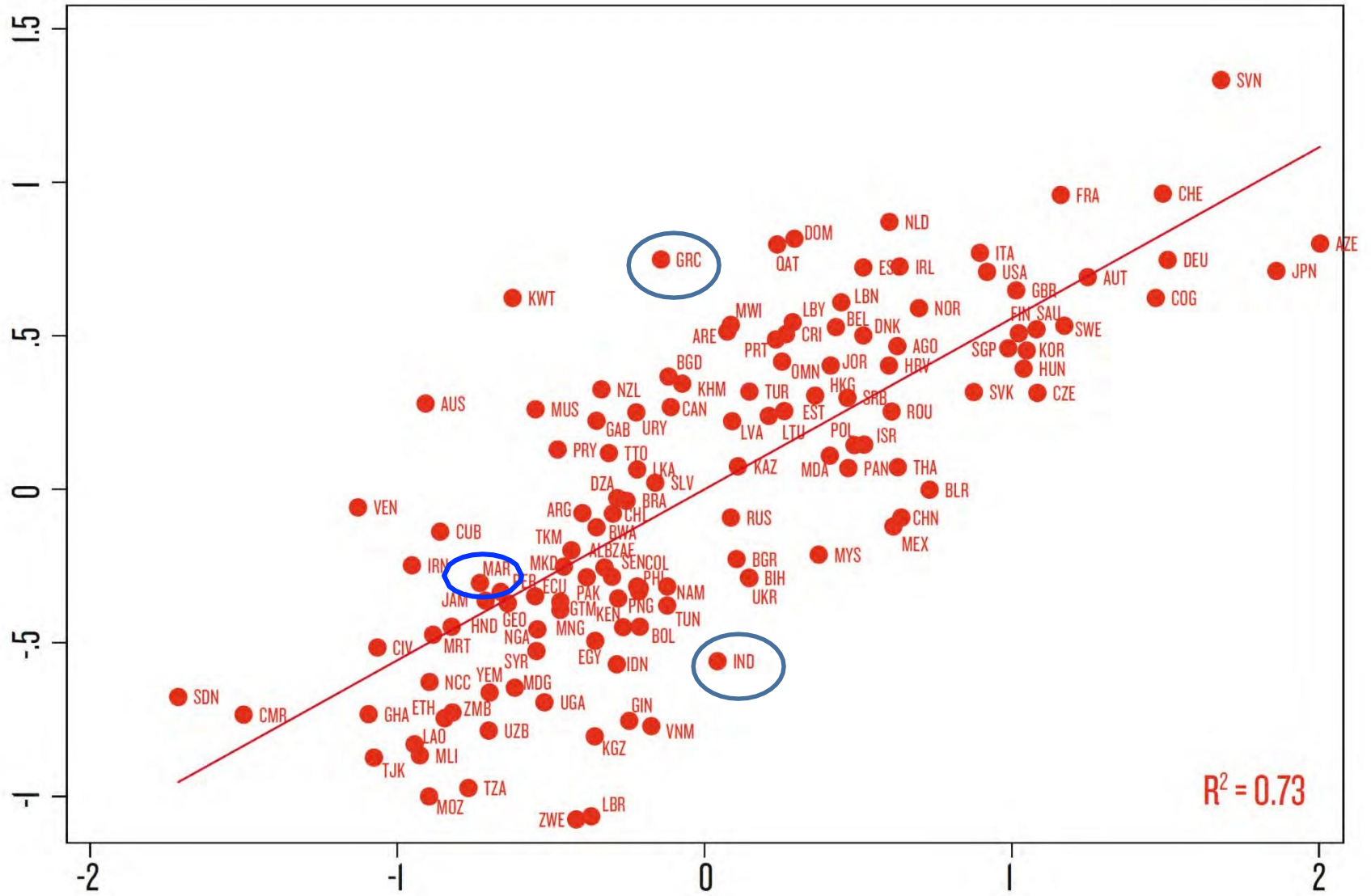
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 cortina
 cortins
 costing
 cotinga
 crating
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garcons
 garlics
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 gastrin
 girasol
 gitanos
 glorias
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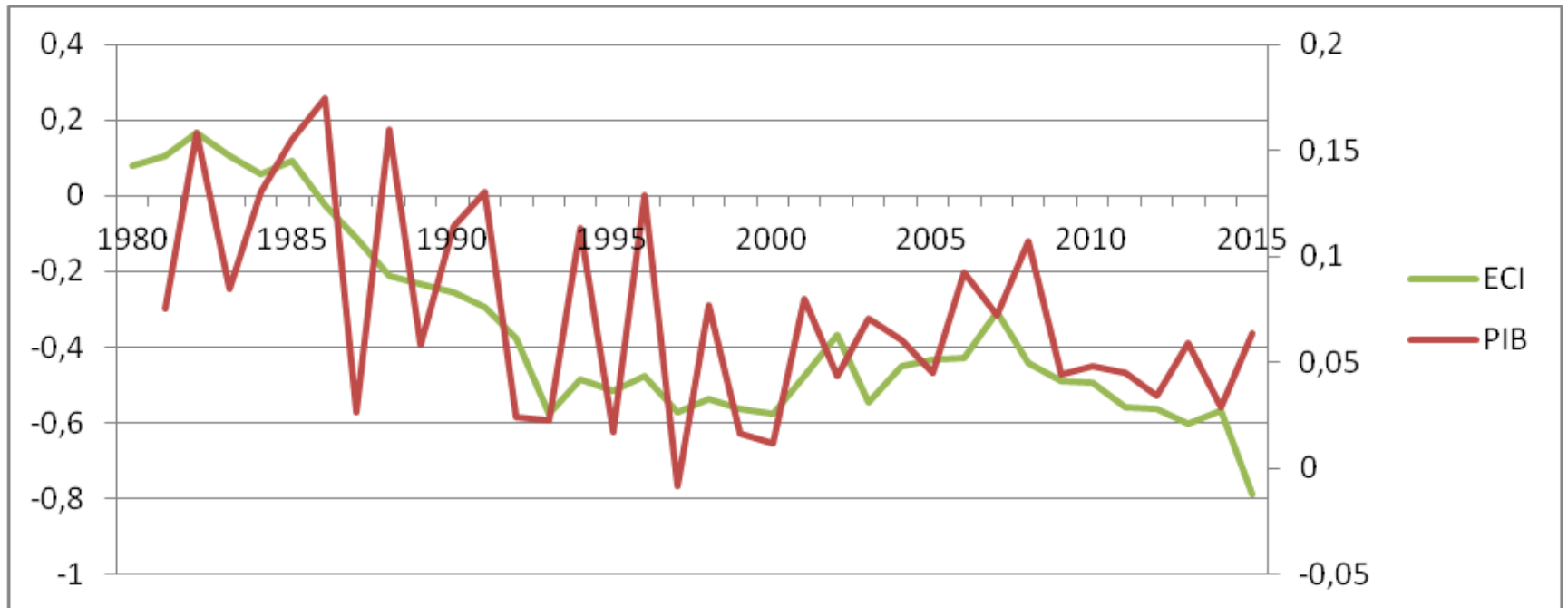
ECI correlates with GDP per capita



Income per capita controlling for initial income and proportion of natural resource exports per capita in logs [2008]



La complexité de l'économie marocaine et la convergence du PIB



**How do
economies
learn?**



Countries face the “chicken and egg problem”

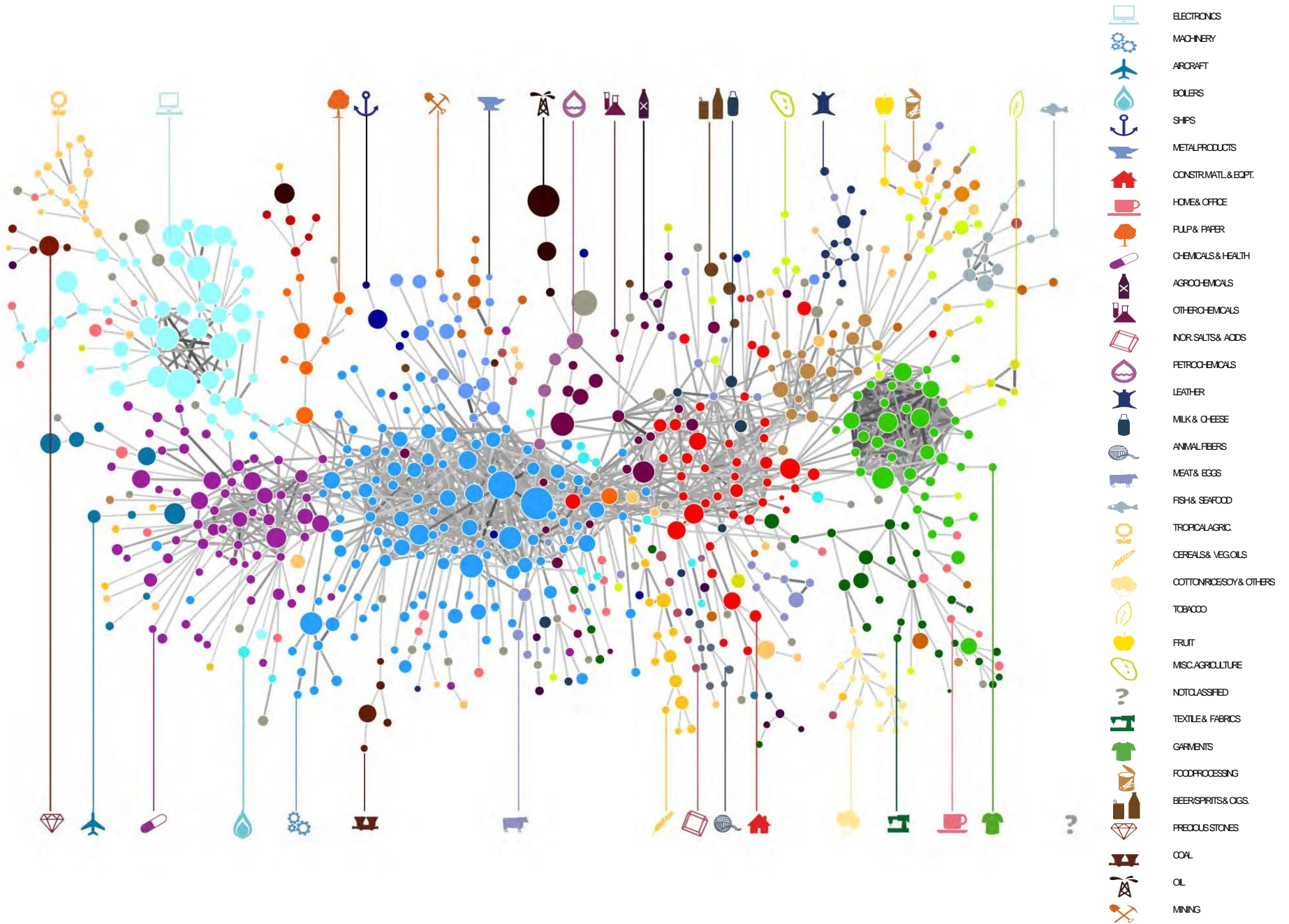
- You cannot make watches without watchmakers
- You don't want to be watchmaker if nobody makes watches
- You cannot become a watchmaker because there are not watchmakers to learn from
- How does the world deal with this?
- By moving towards products that “share” knowhow and knowledge



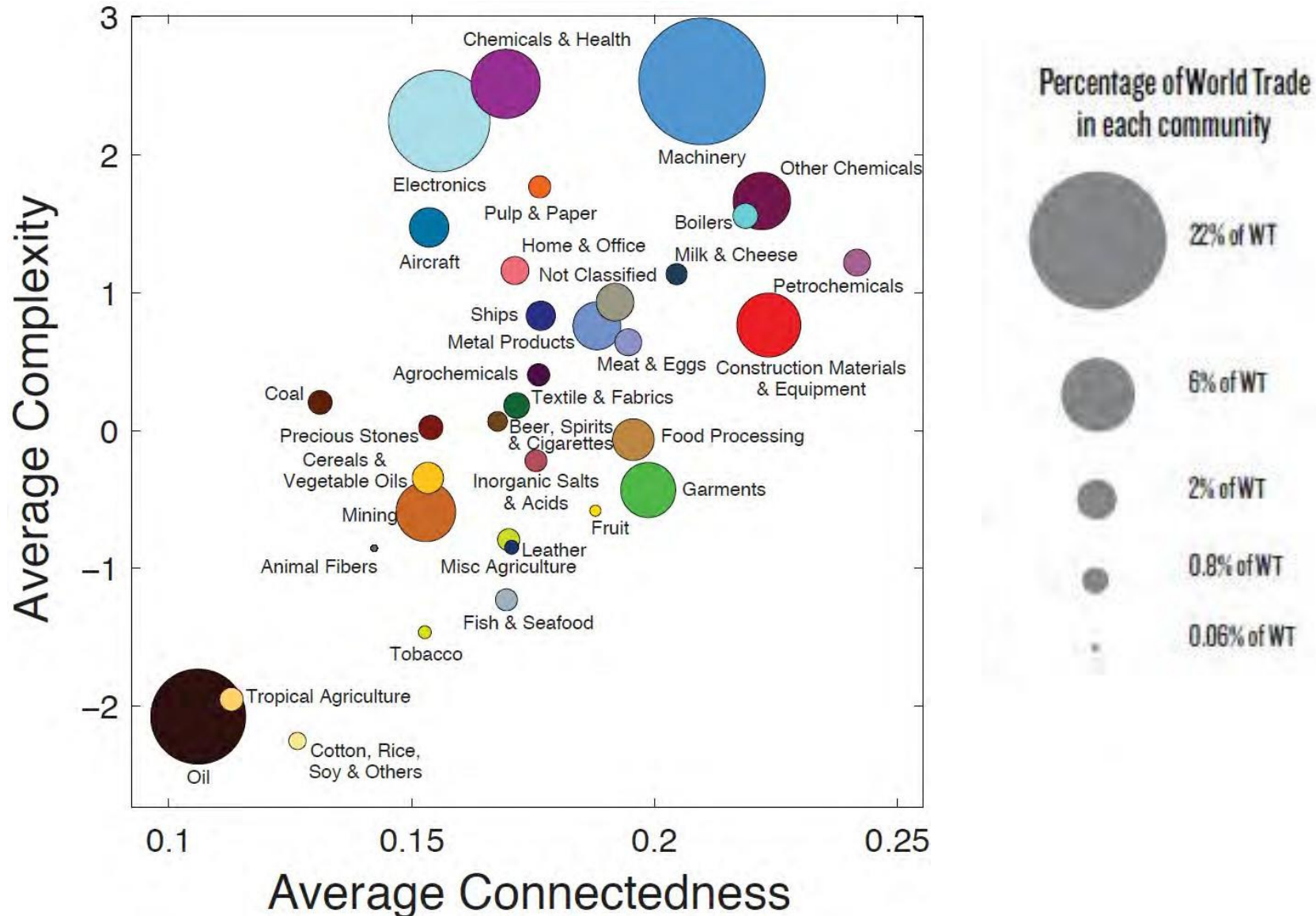


Mapping out the Forest





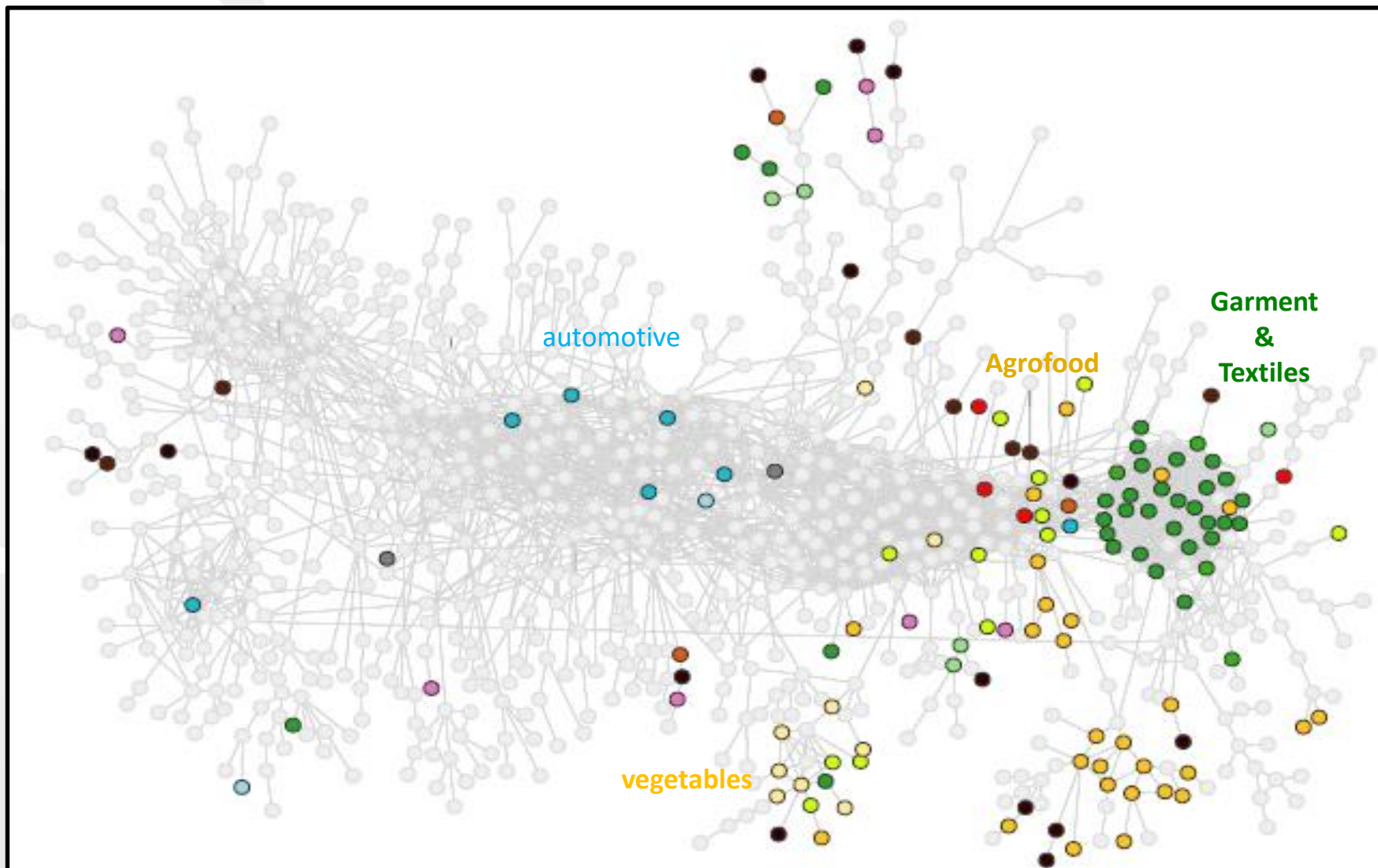
Community characteristics: Complexity, Connectedness and Market Size

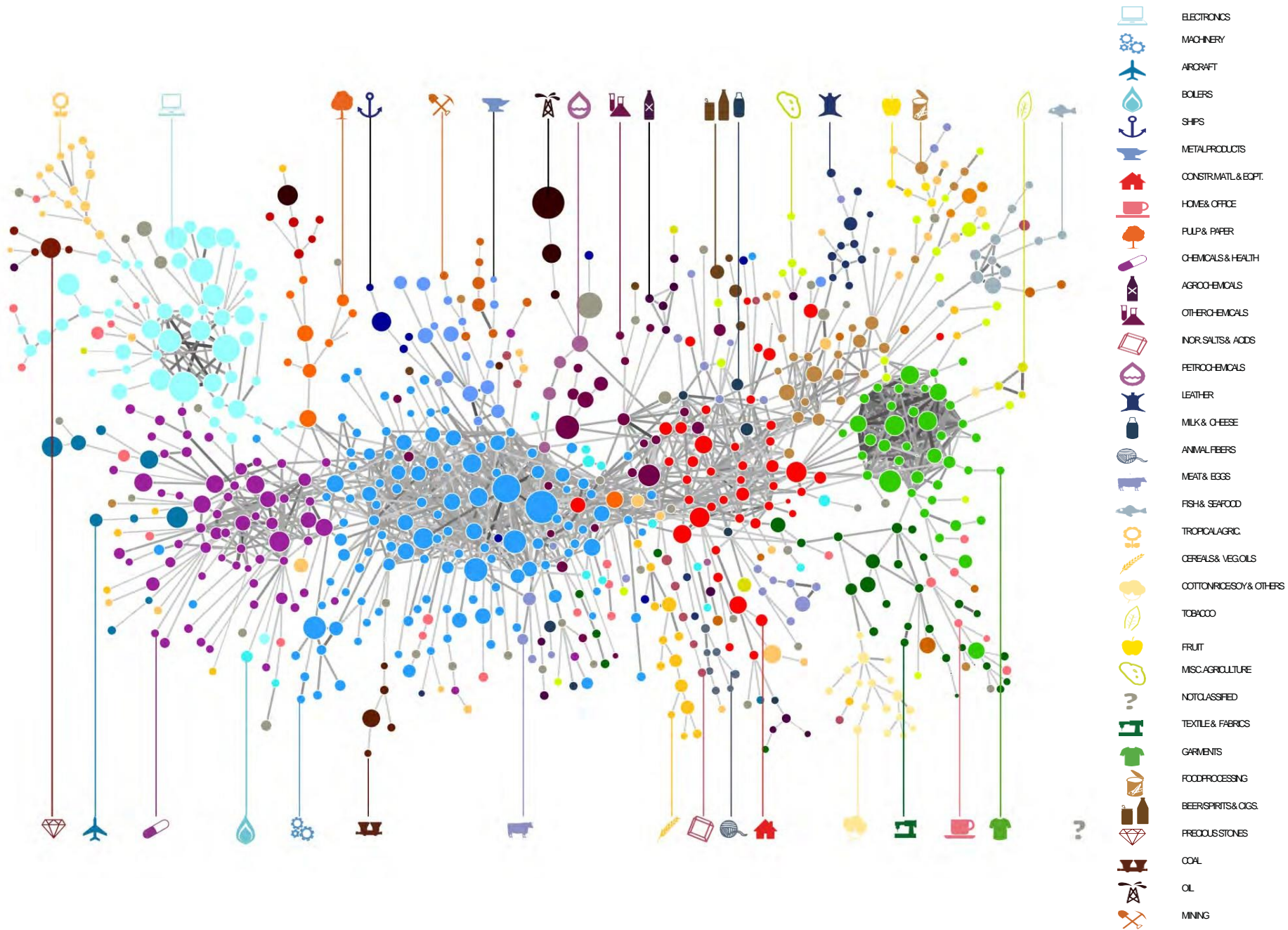


Where are the monkeys?

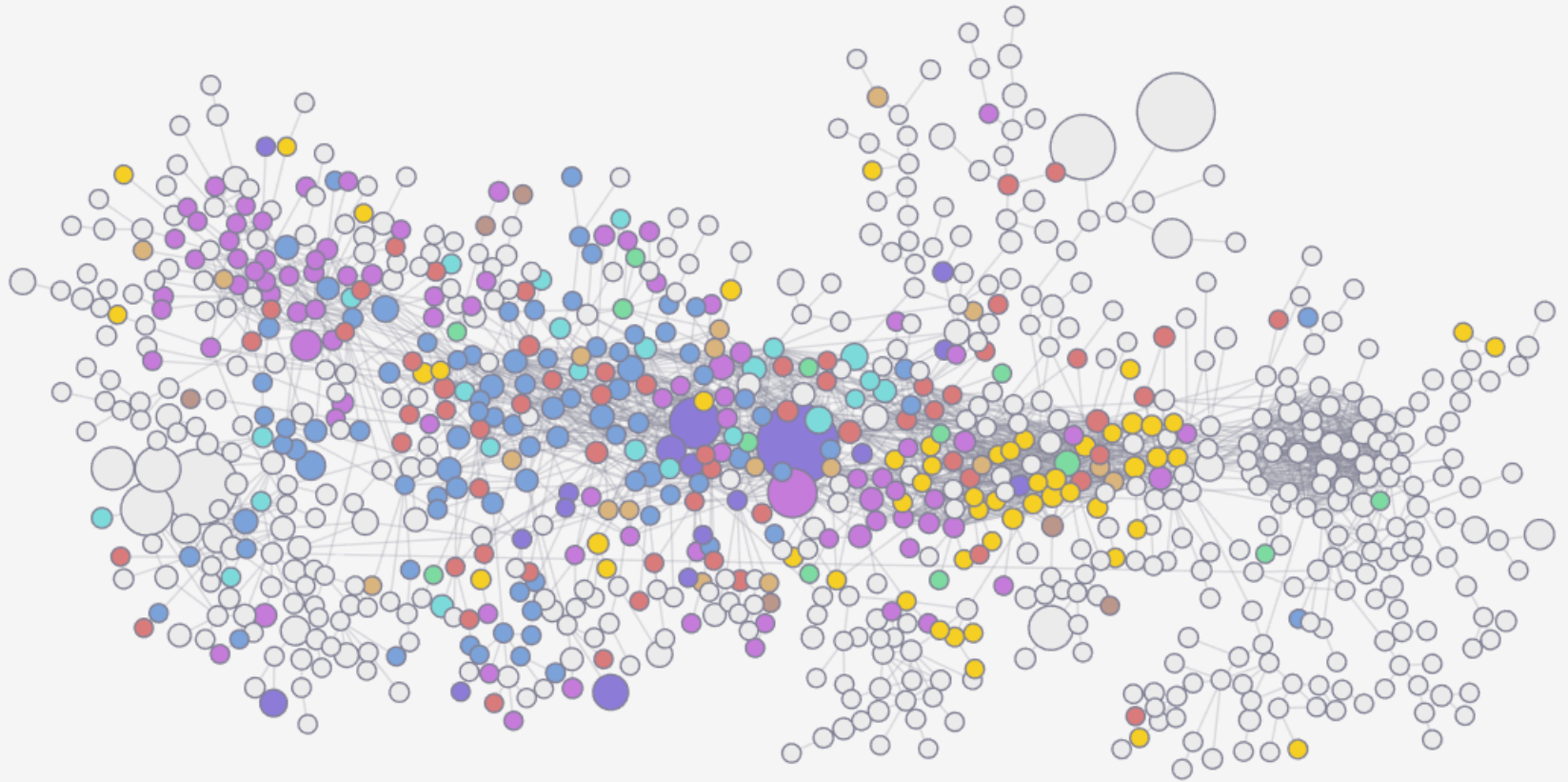


Position du Maroc dans l'Espace Produit





GETMANY 2016



How do monkeys jump?



A tale of two countries

GHANA



THAILAND



1962: Roughly equal income

GHANA



\$295

THAILAND

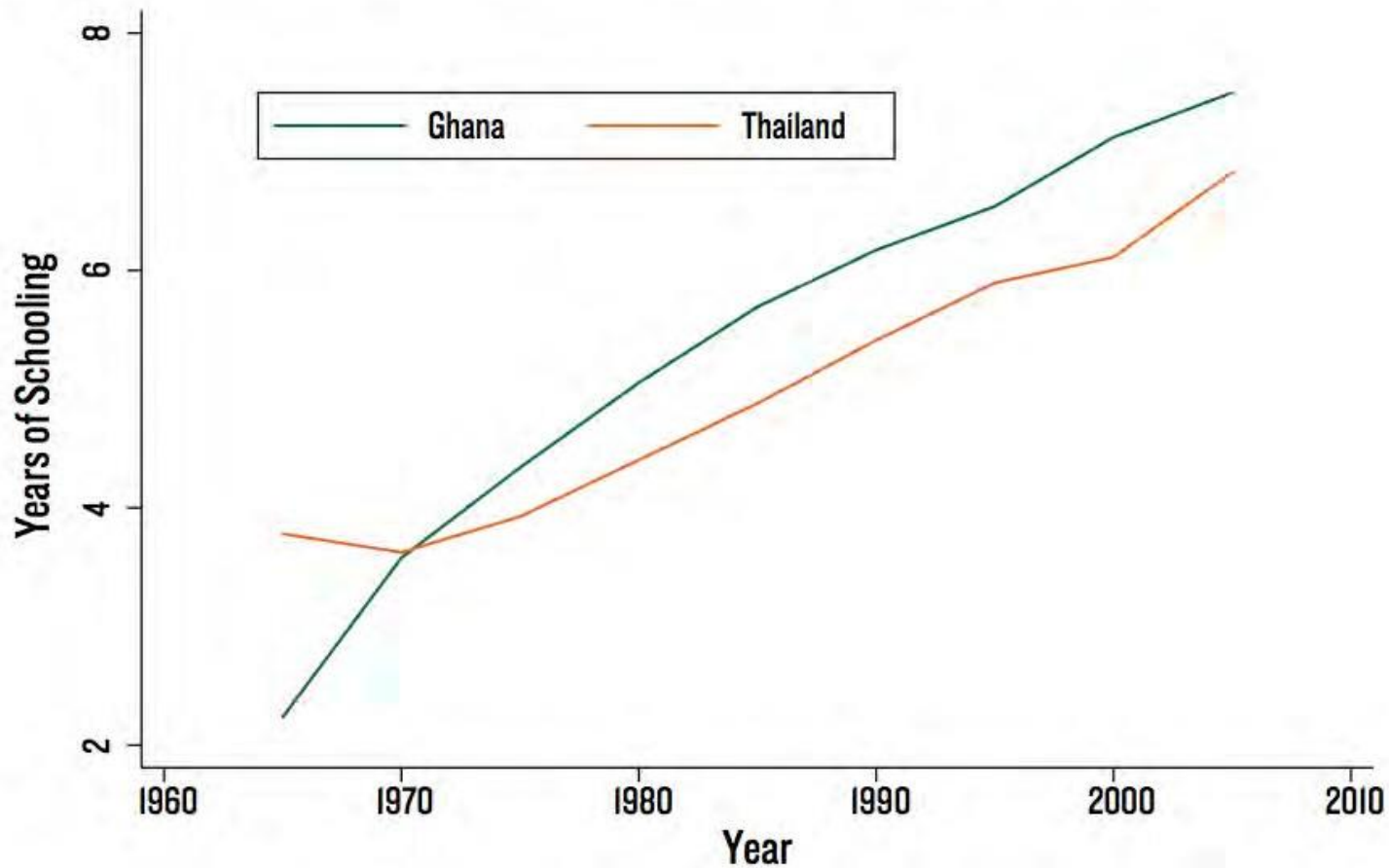


\$363

GDP per capita (constant 2000 US\$)

Human capital story:

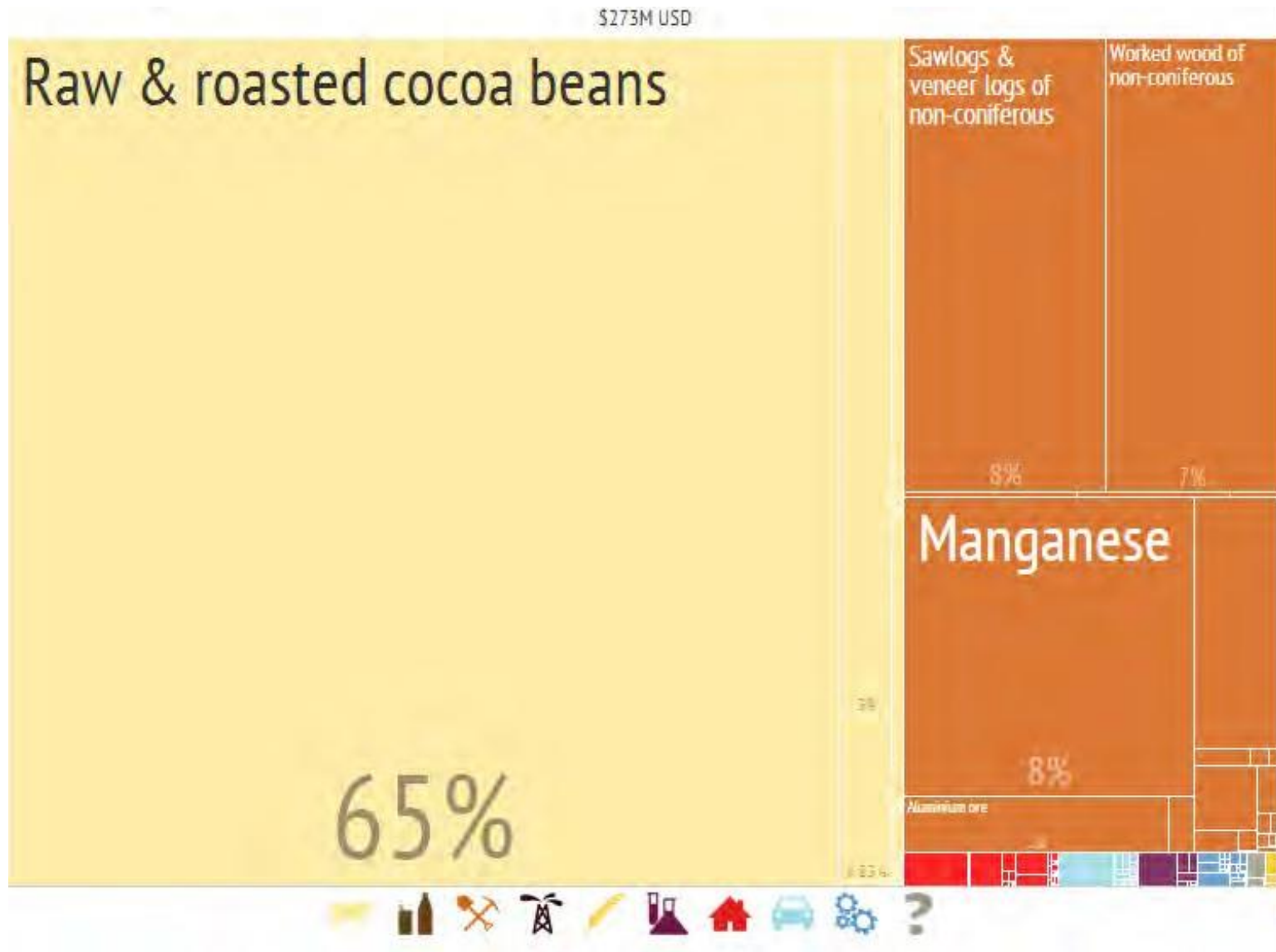
► Years of schooling of Thailand and Ghana as a function of time.



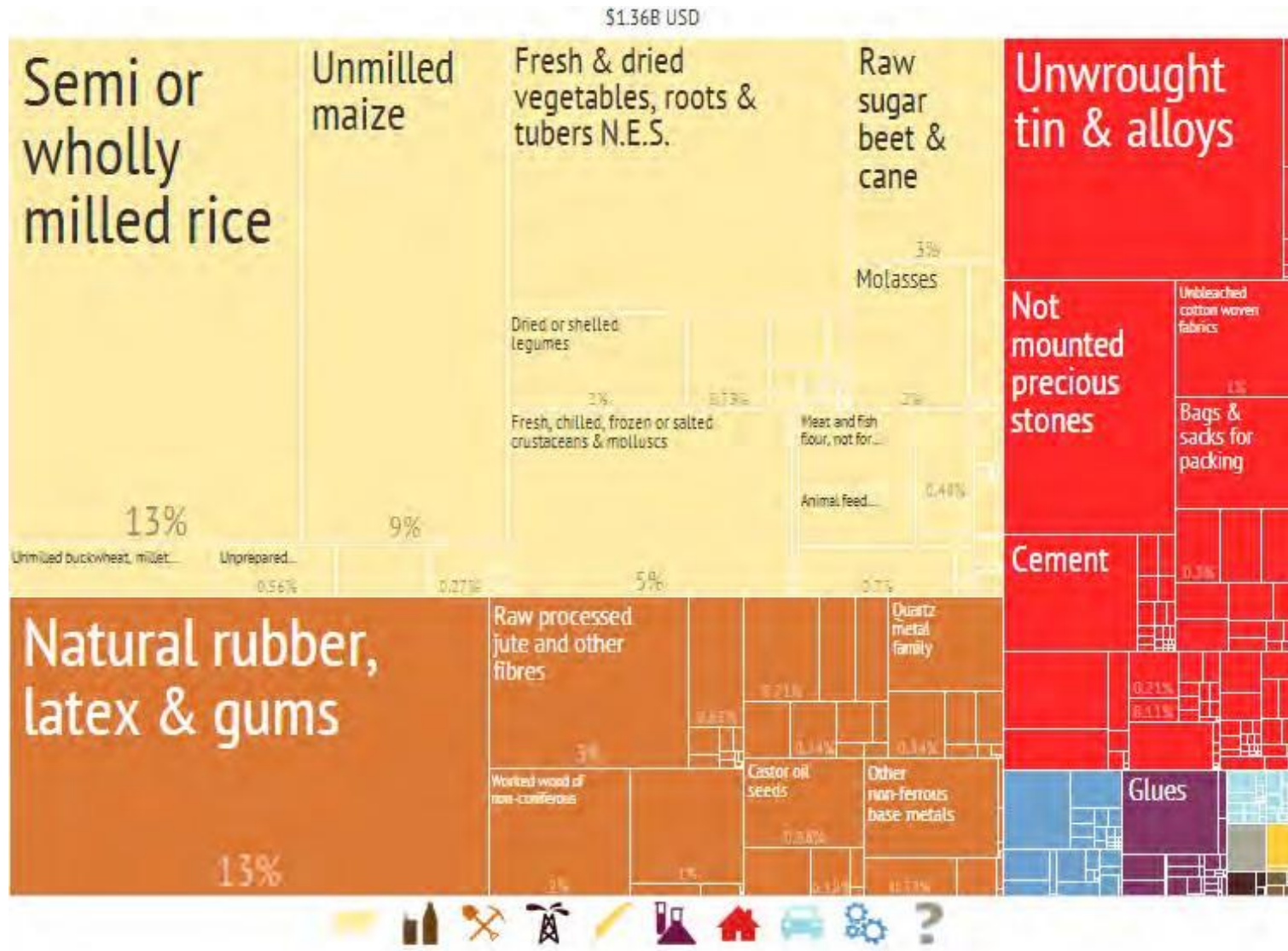


GHANA

Ghana's exports in 1962



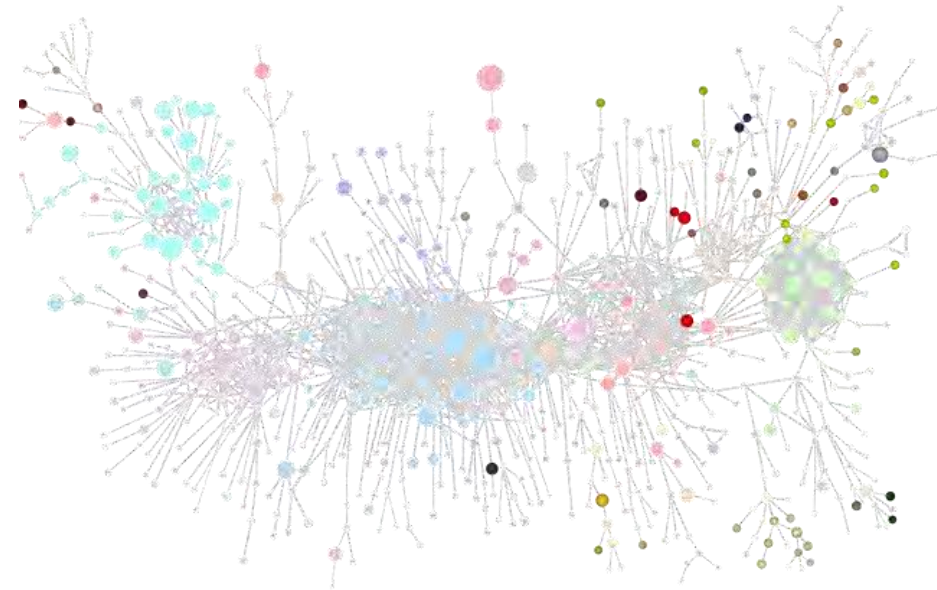
Thailand's exports in 1962



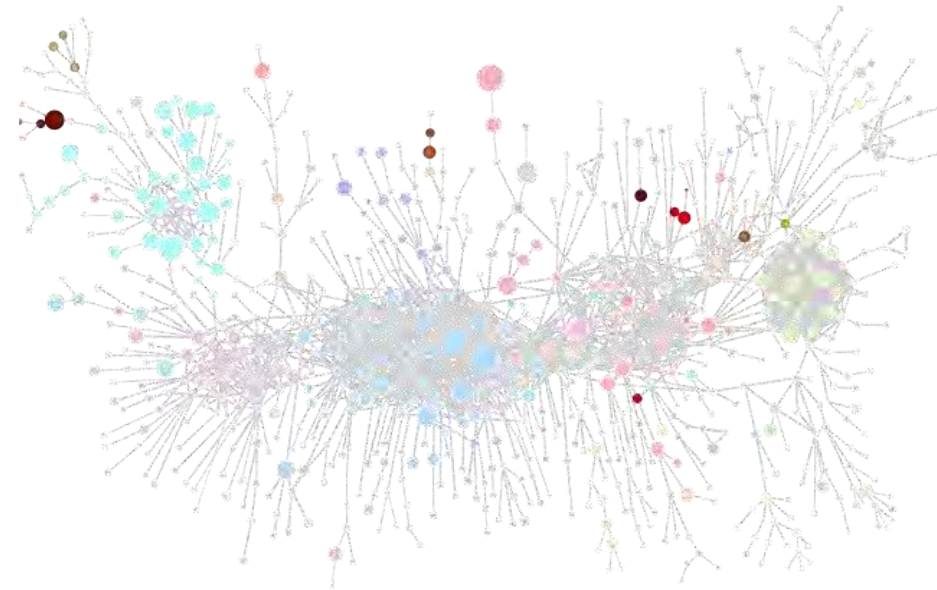
Thailand vs. Ghana in the Product Space 1965

Total Value: \$615,728,000

Total Value: \$294,604,000



Thailand

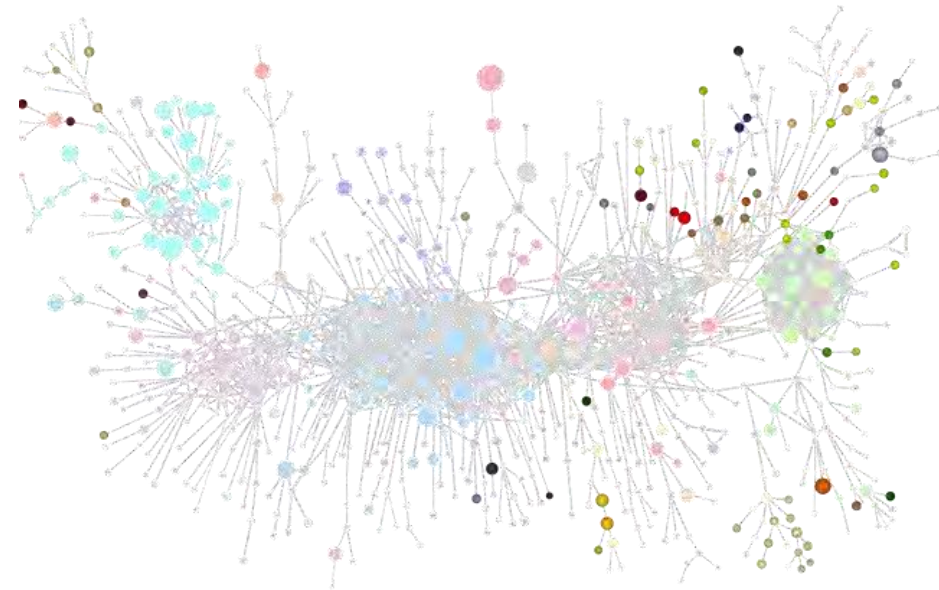


Ghana

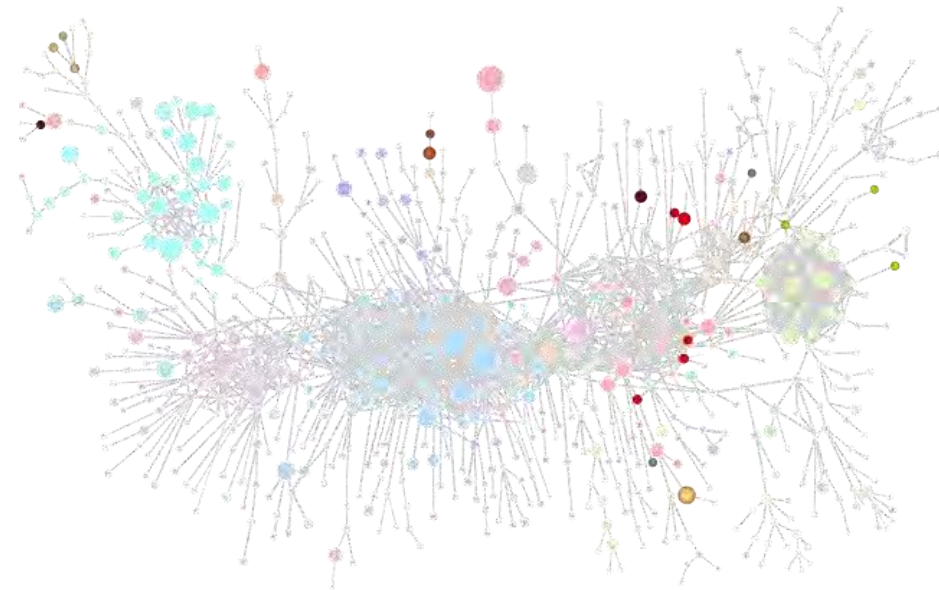
1970

Total Value: \$721,421,000

Total Value: \$432,140,000



Thailand

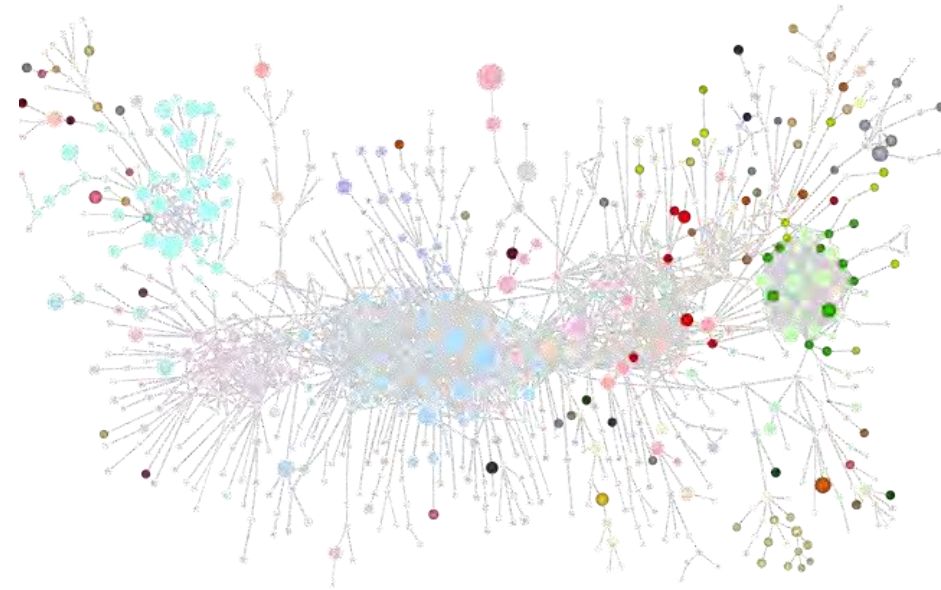


Ghana

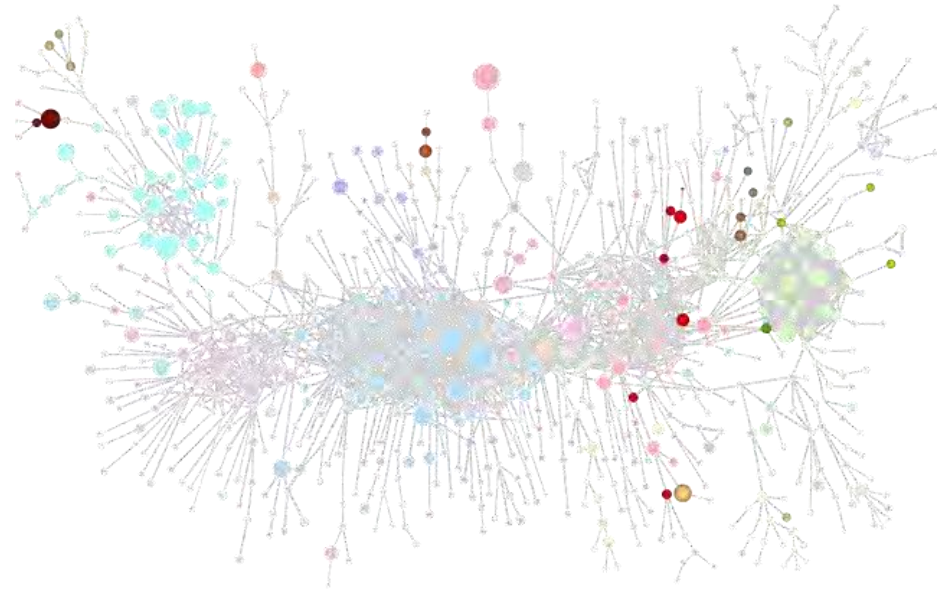
1975

Total Value: \$2,238,988,000

Total Value: \$818,766,000



Thailand

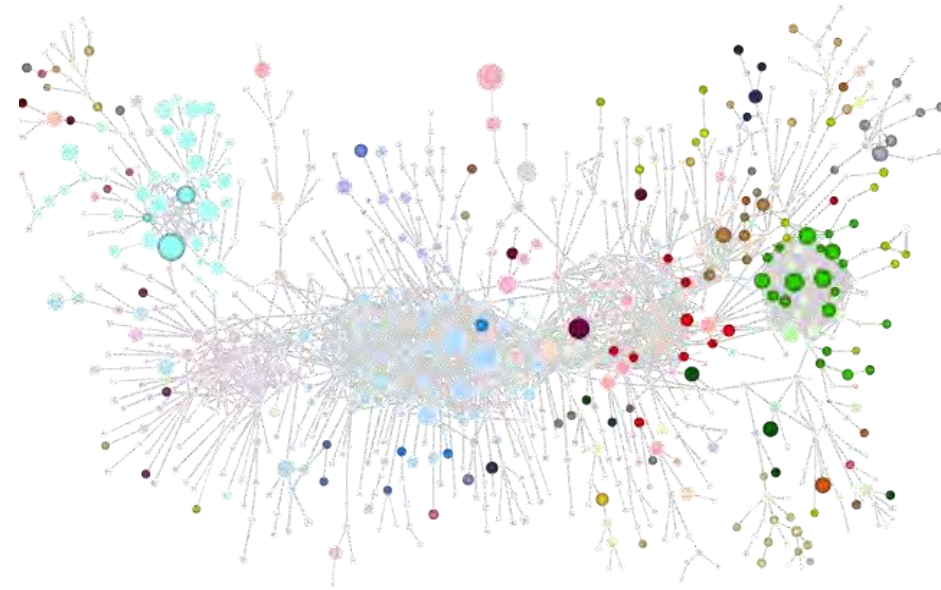


Ghana

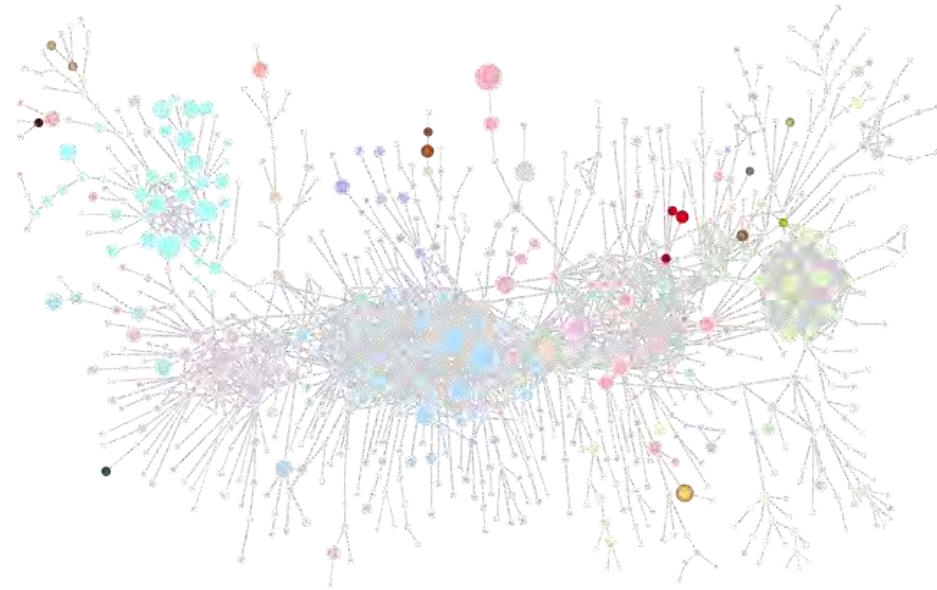
1980

Total Value: \$5,980,038,000

Total Value: \$1,017,767,000



Thailand

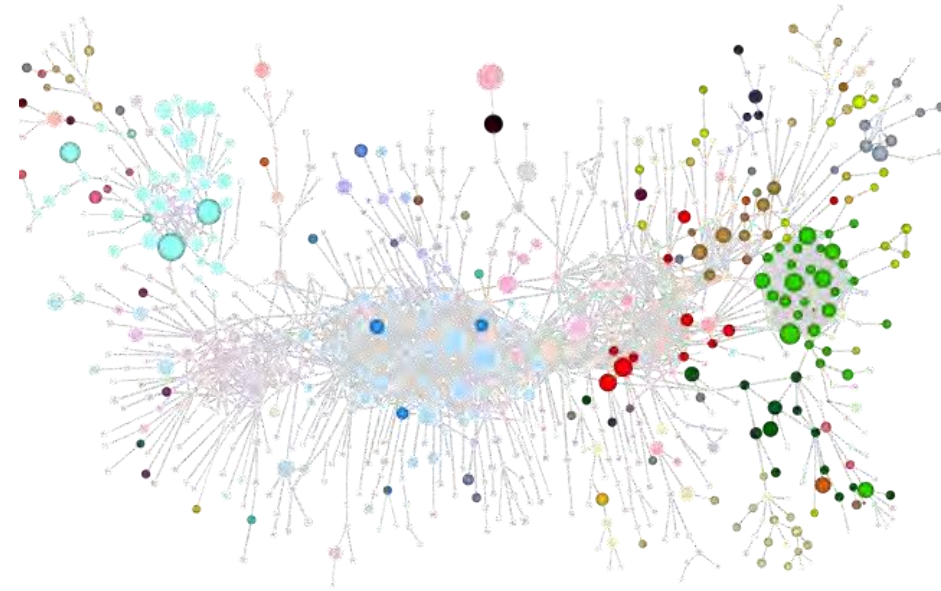


Ghana

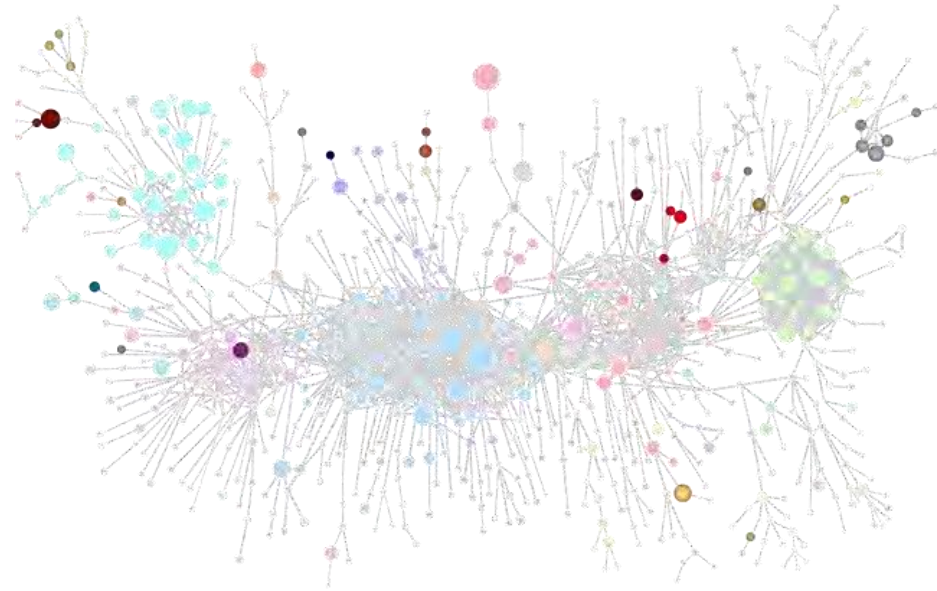
1985

Total Value: \$7,354,613,137

Total Value: \$462,524,204



Thailand

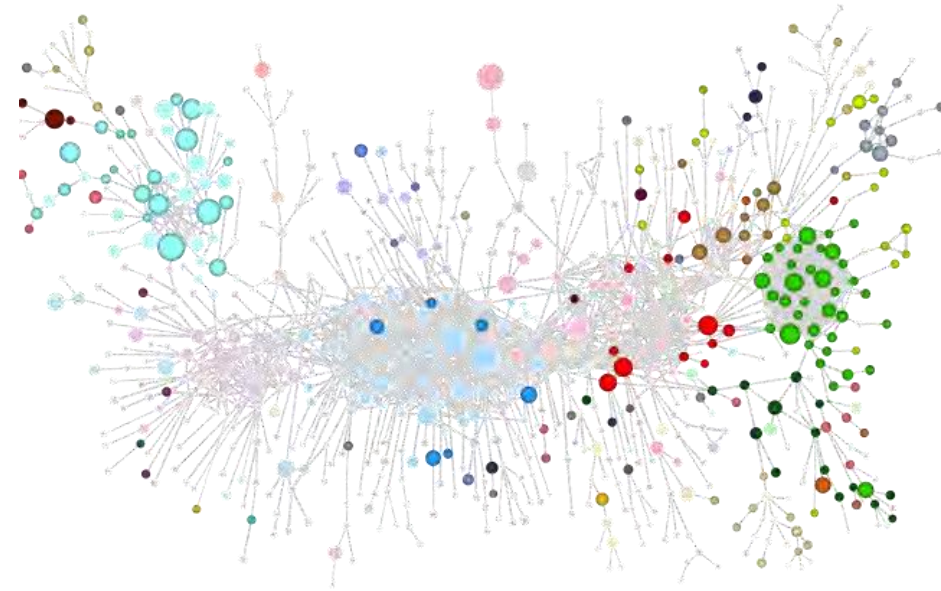


Ghana

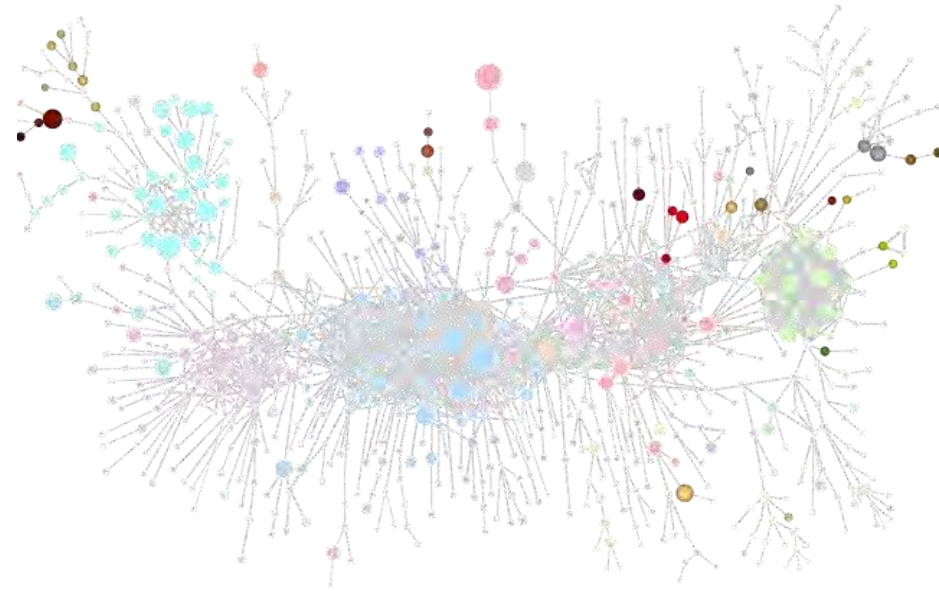
1990

Total Value: \$21,914,013,991

Total Value: \$1,086,328,204



Thailand

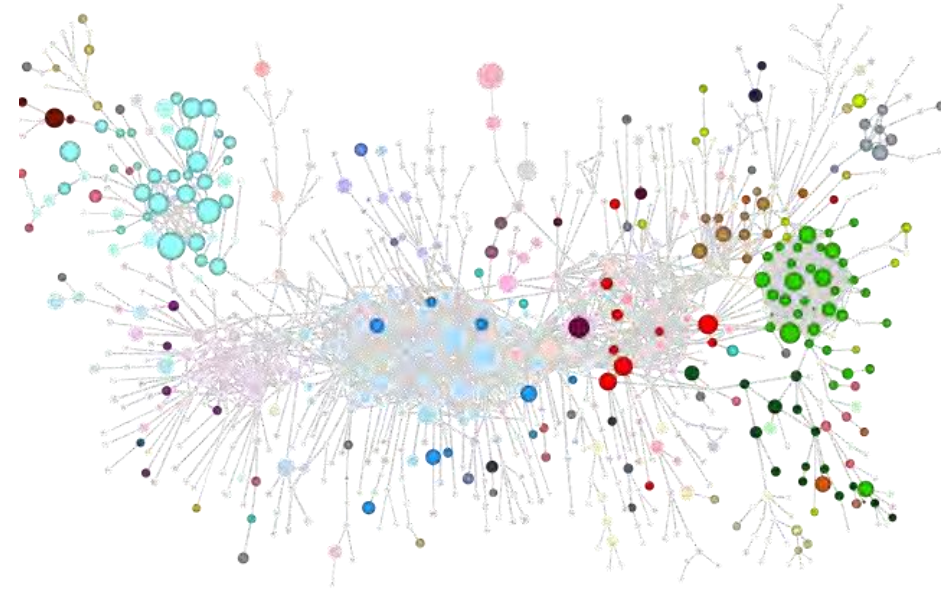


Ghana

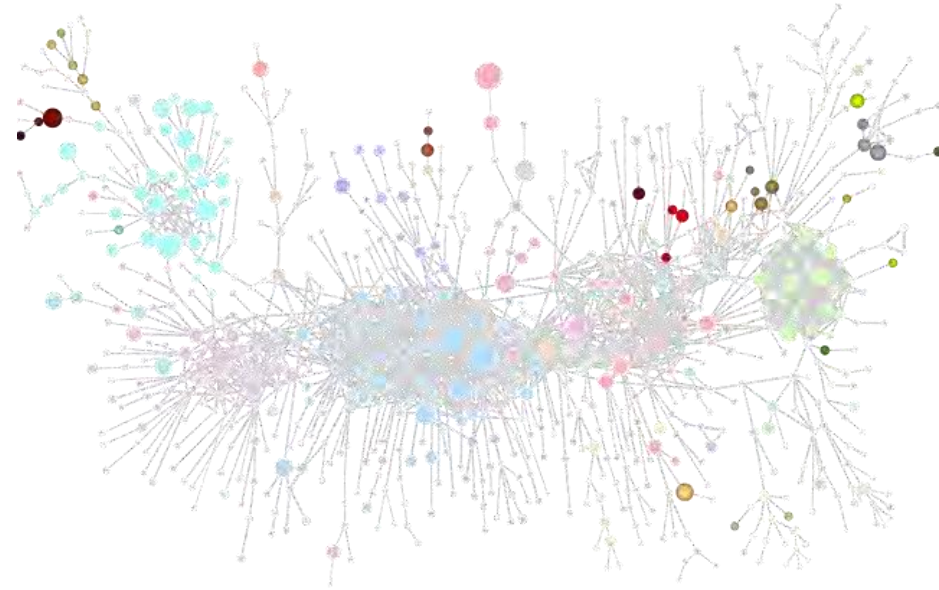
1995

Total Value: \$50,644,730,628

Total Value: \$1,294,057,269



Thailand

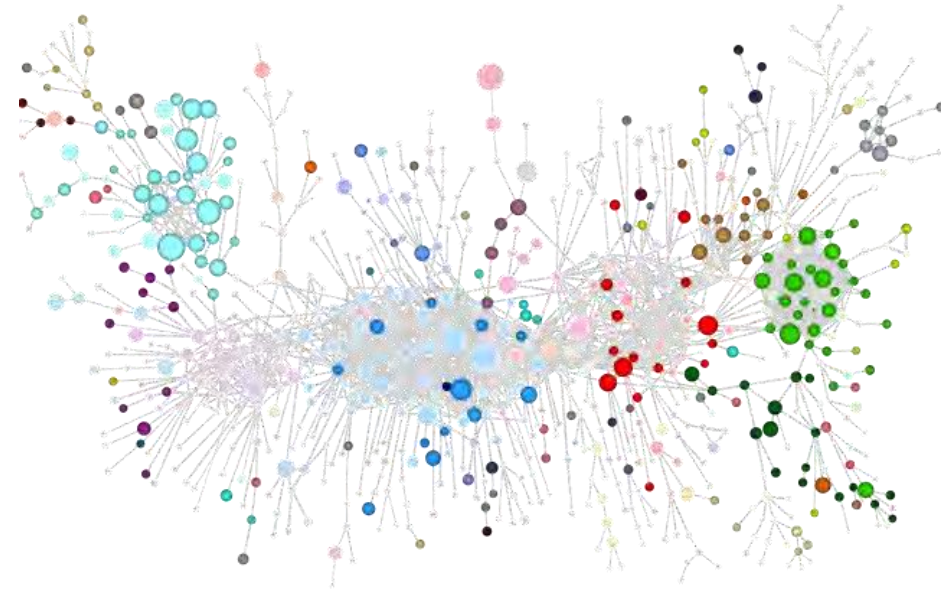


Ghana

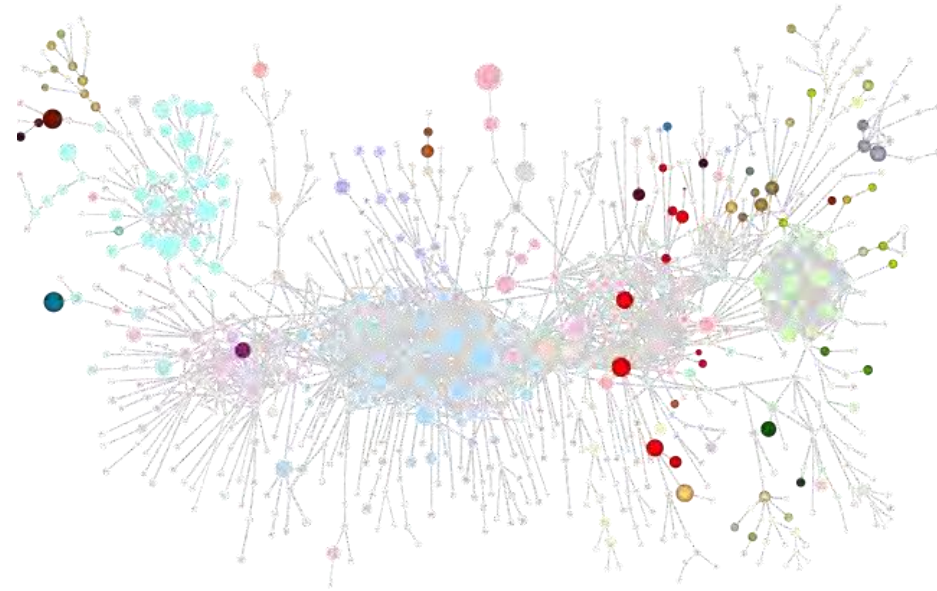
2000

Total Value: \$67,126,271,442

Total Value: \$1,206,161,694



Thailand

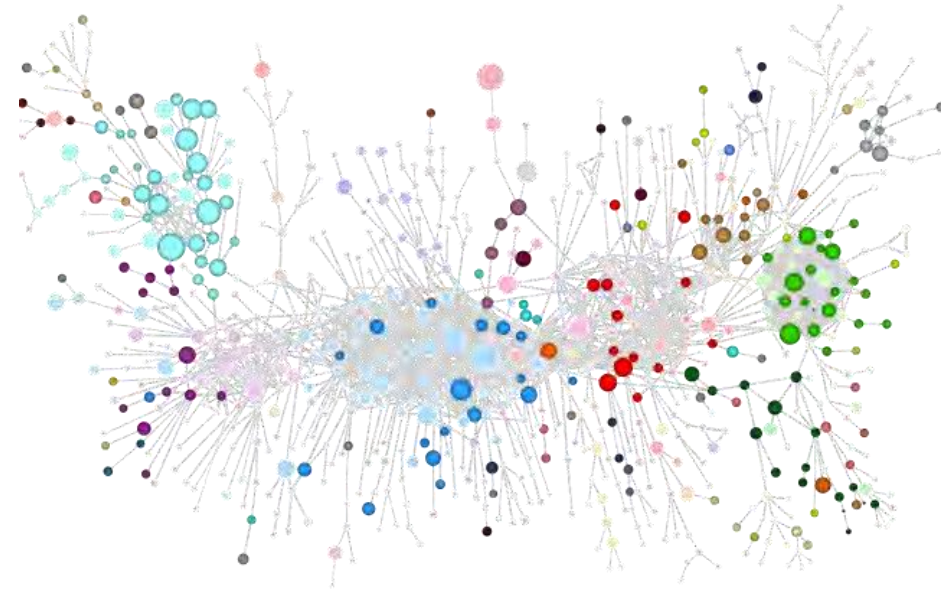


Ghana

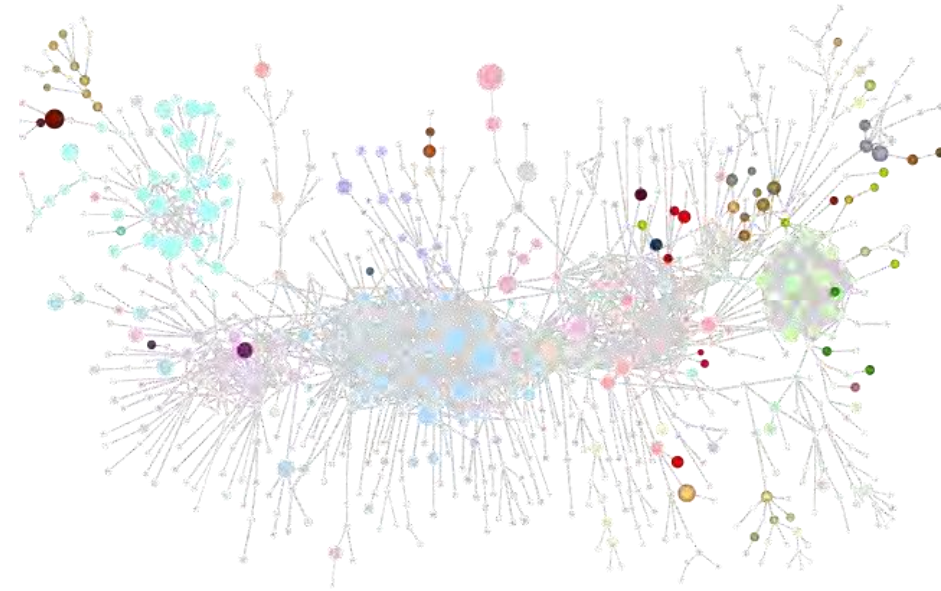
2005

Total Value: \$111,099,204,052

Total Value: \$1,871,625,725



Thailand

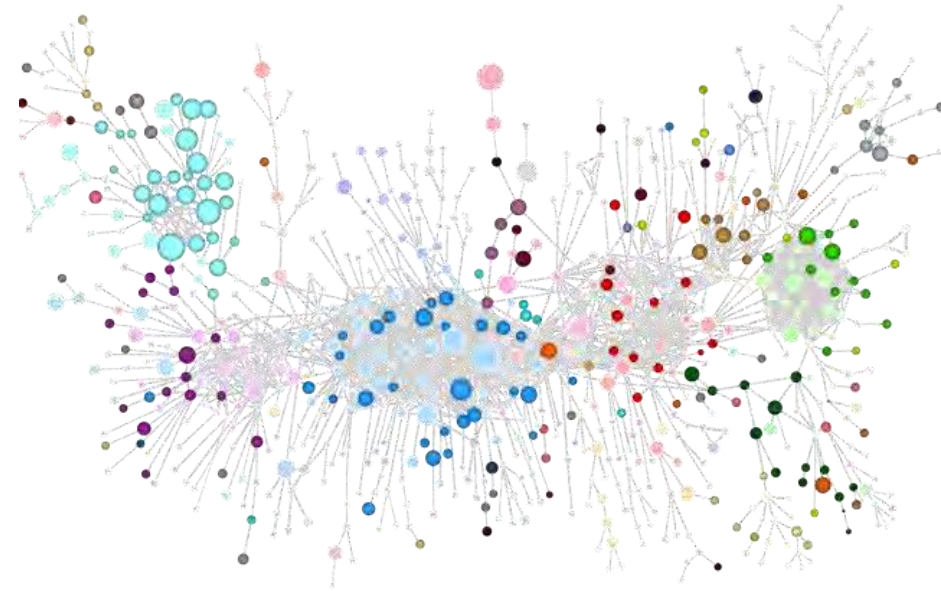


Ghana

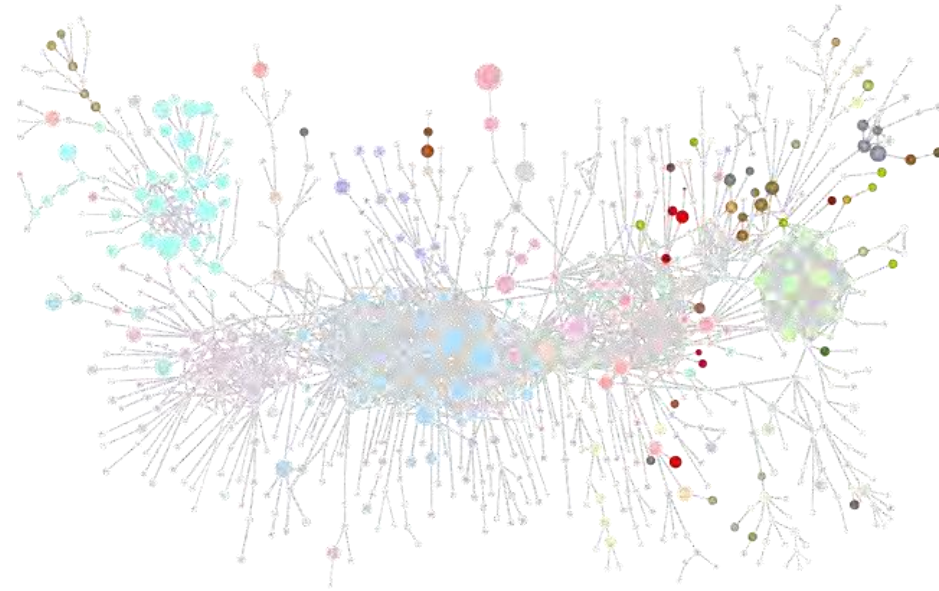
2010

Total Value: \$186,564,165,927

Total Value: \$4,052,850,523

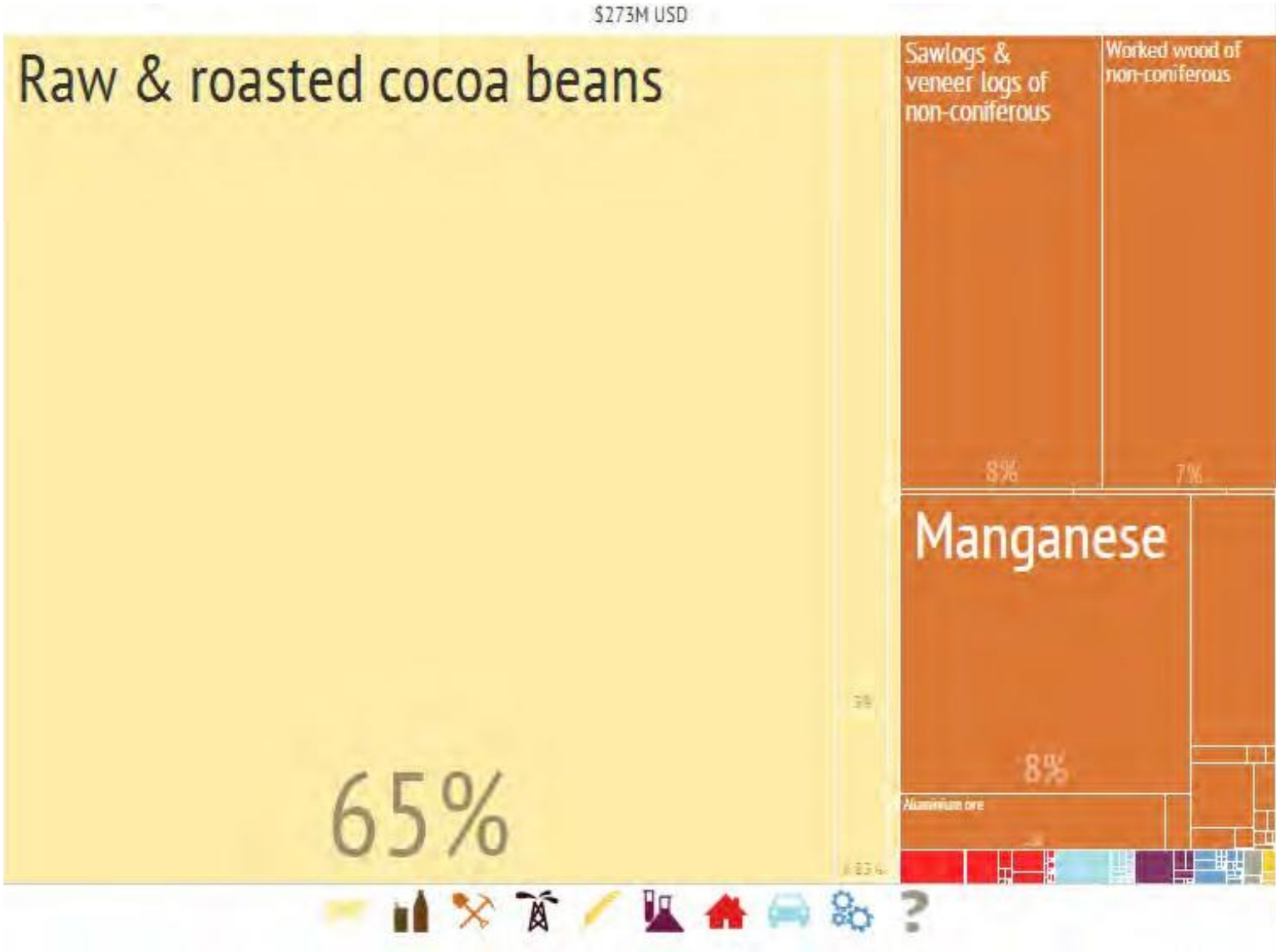


Thailand

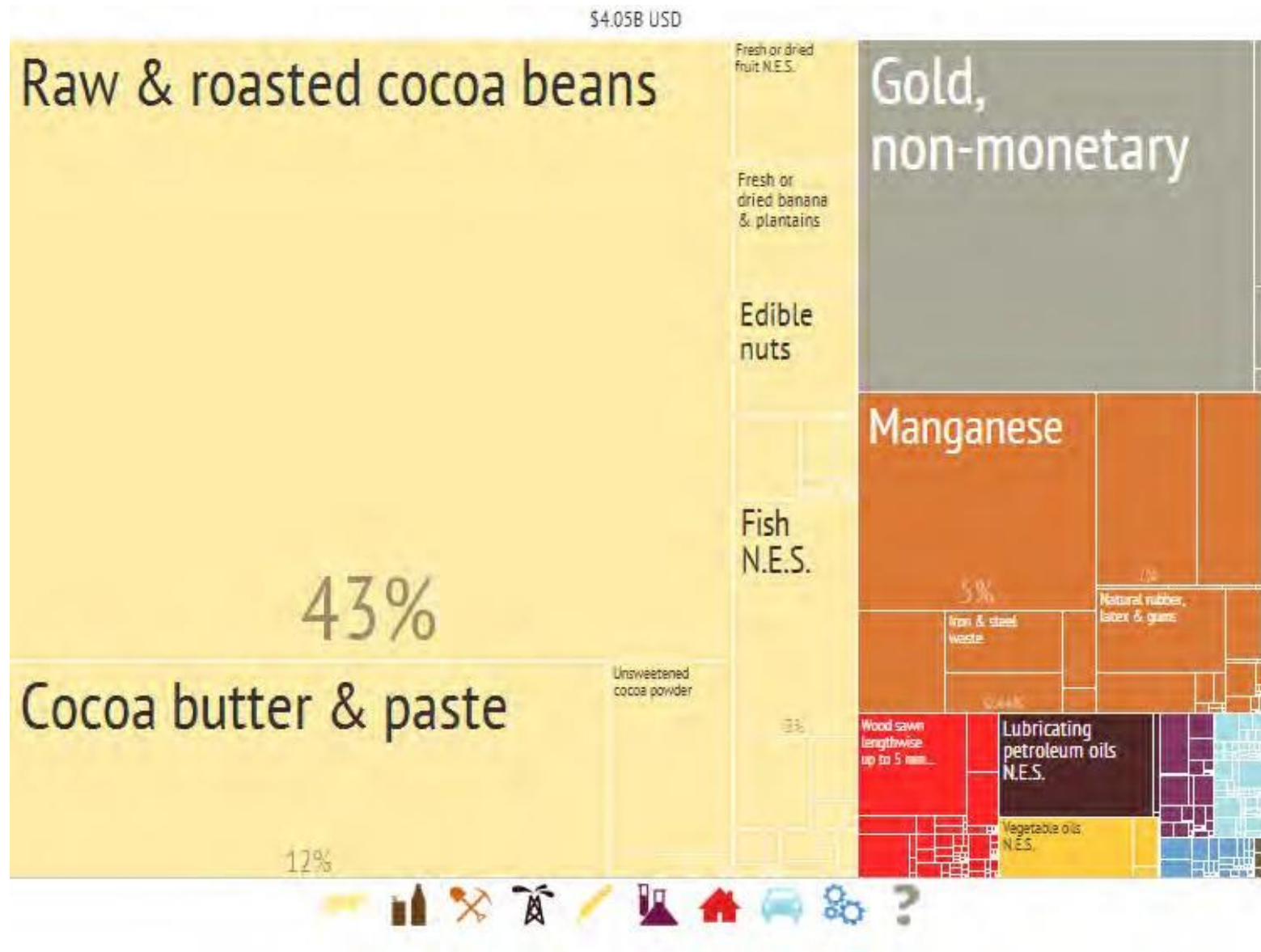


Ghana

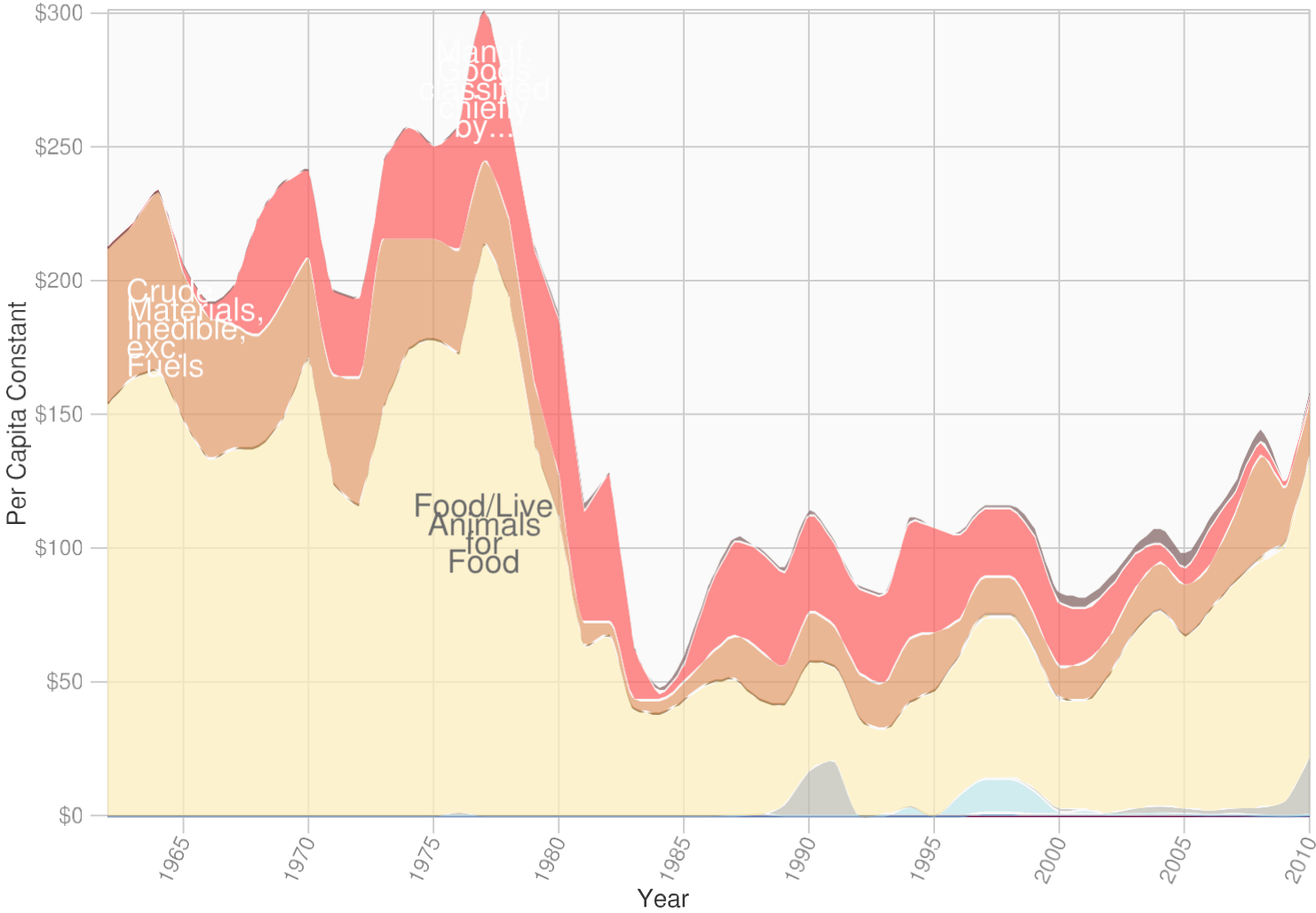
Ghana's exports in 1962



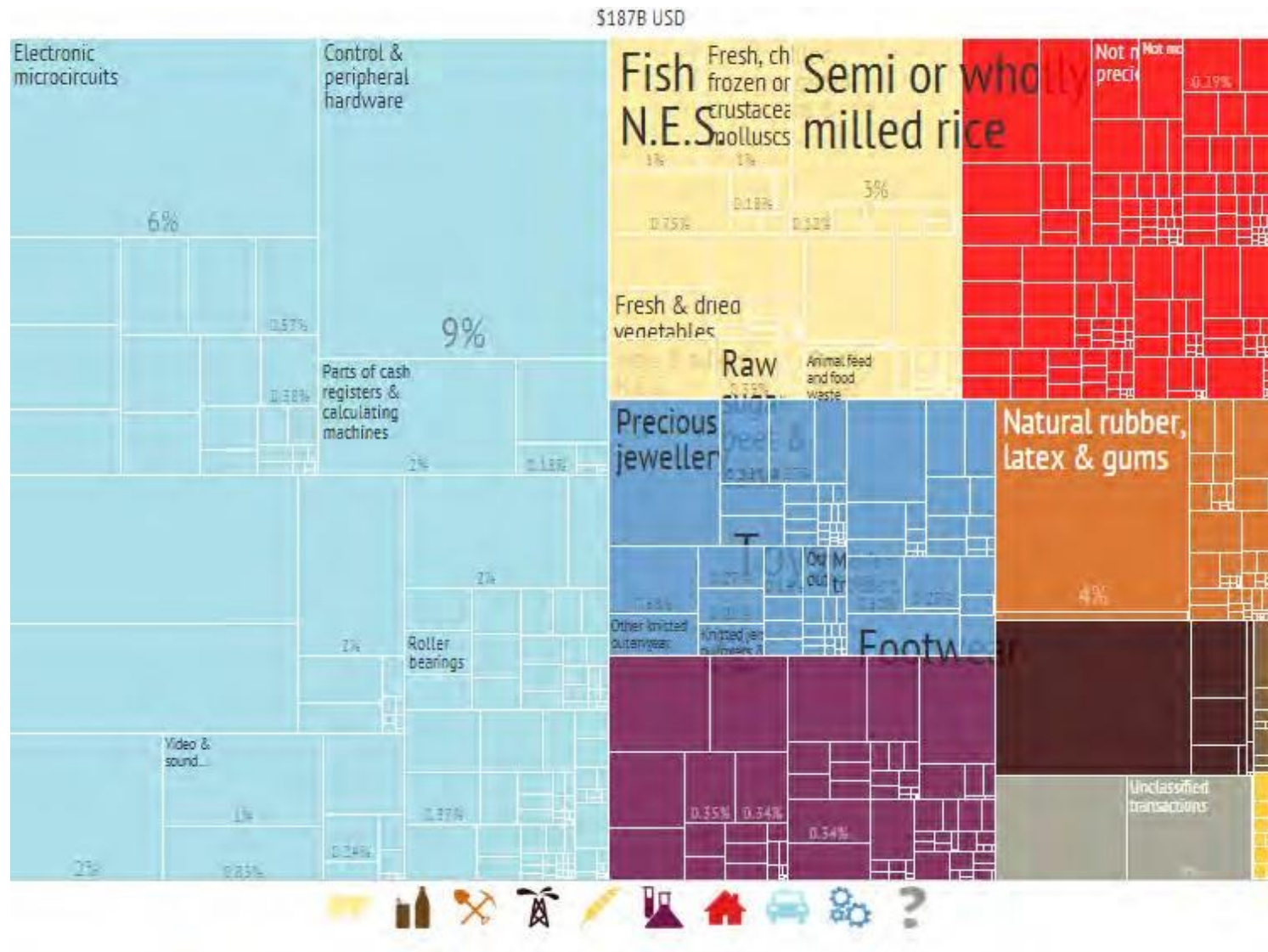
Ghana's exports in 2010



Ghana's exports per capita at constant 2005 prices



Thailand's exports in 2010



Thailand's exports per capita at constant 2005 prices

