

NATURAL RESOURCES ENDOWMENT: A MIXED BLESSING?



UNIVERSITY OF ICELAND

Thorvaldur Gylfason

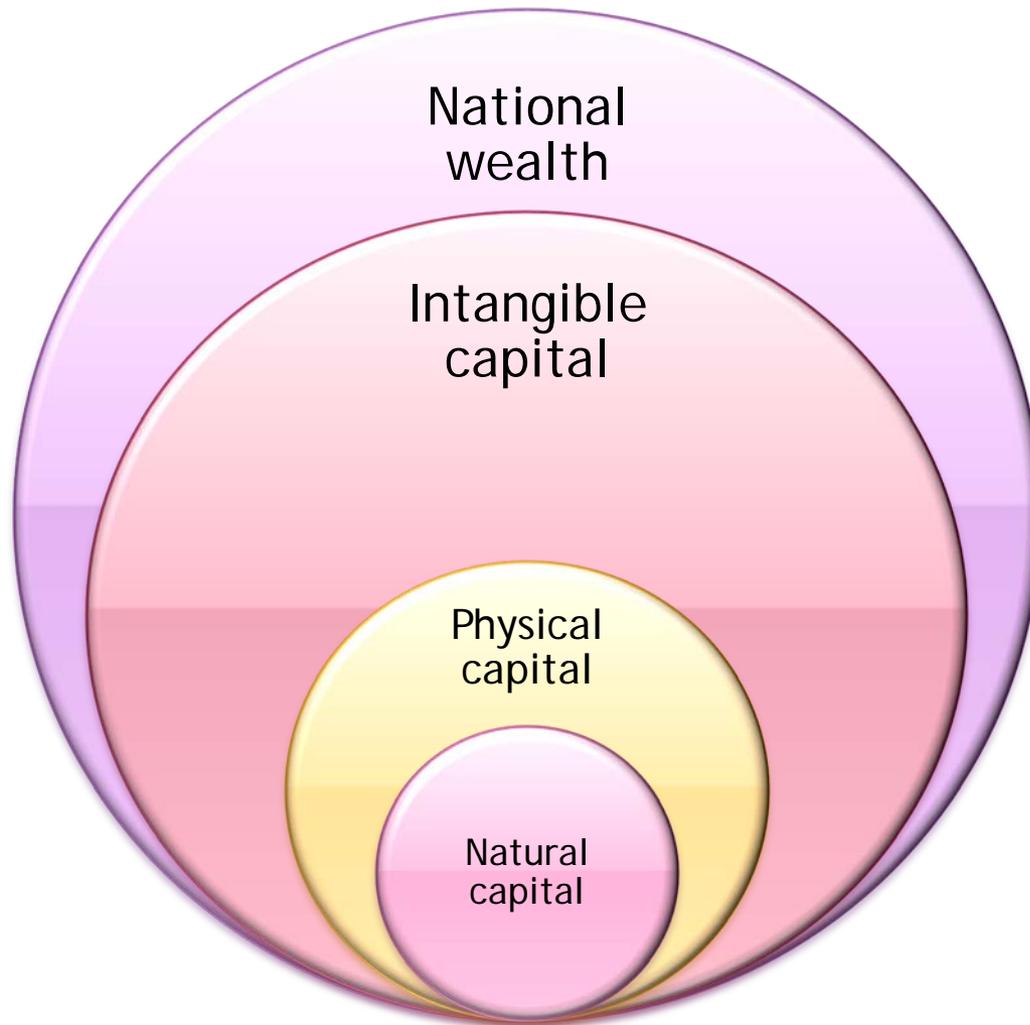
High-level seminar on
*Natural resources, finance, and development:
Confronting Old and new Challenges*
organized by the Central Bank of Algeria
and the IMF Institute
in Algiers on 4-5 November 2010

OLD ECONOMIC GEOGRAPHY

- ◉ Assigned key role to natural resource wealth and raw materials
- ◉ Tended to equate those resources with economic strength
- ◉ Yet, many resource-abundant countries are poor, while several resource-poor countries are rich
- ◉ Prime Minister Putin of Russia:
 - “Our country is rich, but our people are poor.”



COMPOSITION OF WORLD'S NATIONAL WEALTH



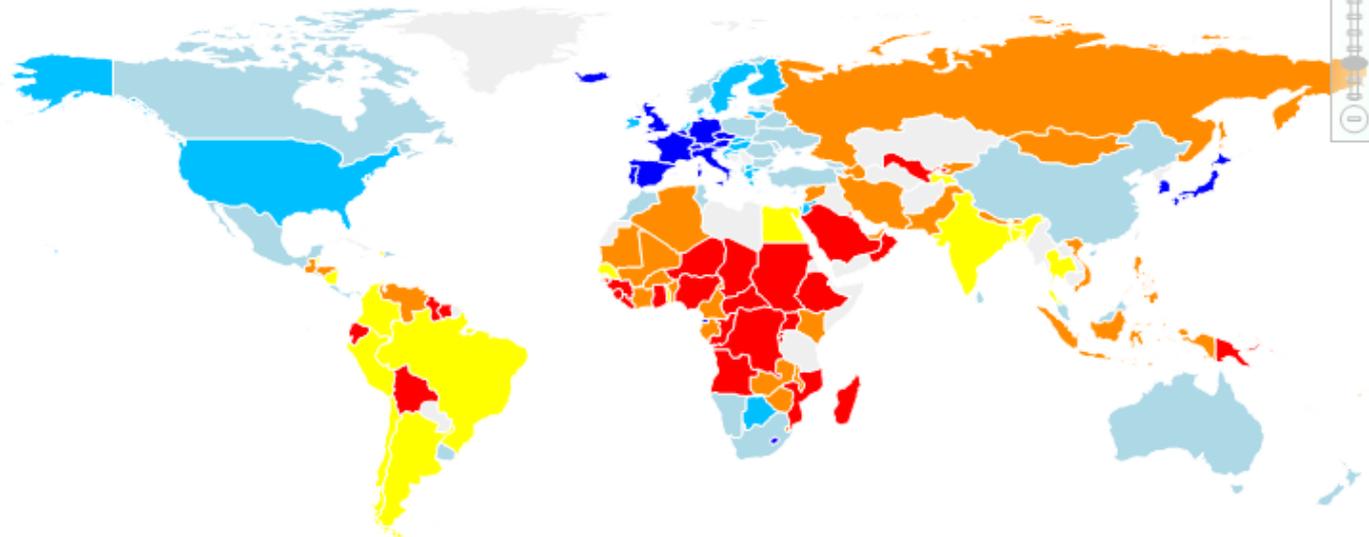
In the world as a whole, natural capital constitutes a small part of national wealth, or about 7%

Advanced countries (US, Canada, Australia, and others) have outgrown their dependence on natural capital, including agriculture

Even so, natural capital remains important in a number of countries

SHARE OF NATURAL CAPITAL IN TOTAL TANGIBLE CAPITAL

From blue to red: Increased resource intensity



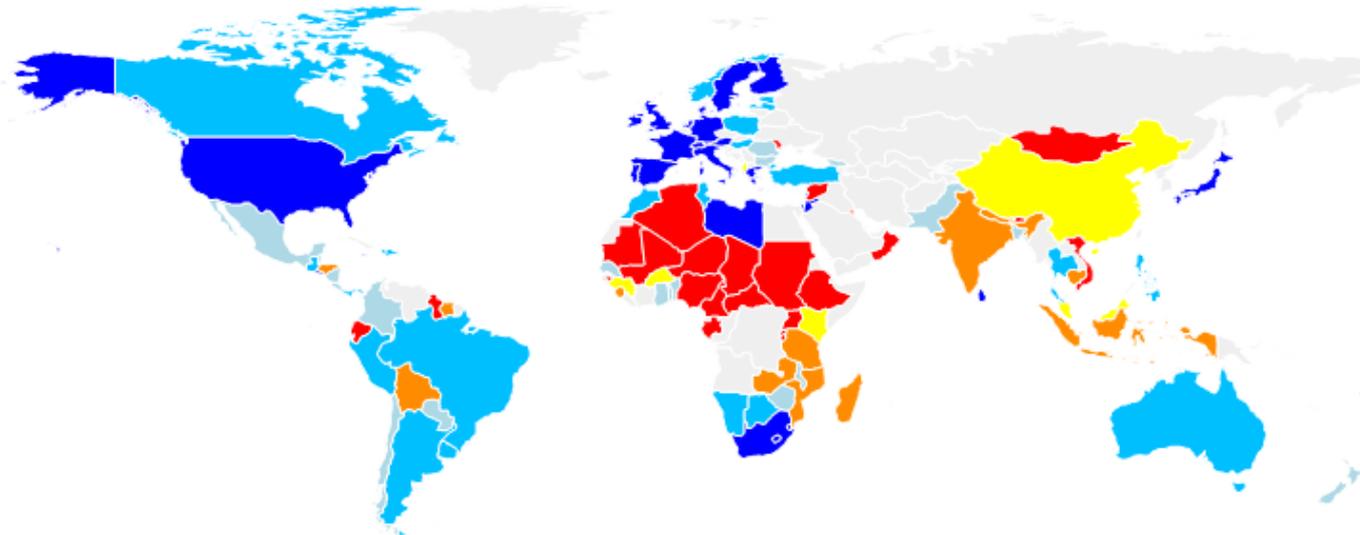
Share of Natural Capital over Total Tangible Capital (in percent)



Tangible capital is produced capital plus natural capital, and does not include human capital and social capital

SHARE OF NATURAL CAPITAL IN TOTAL CAPITAL

From blue to red: Increased resource intensity



Share of Natural Capital over Total Capital (in percent)



Total capital is produced capital plus natural capital plus tangible capital, including human capital and social capital

NEW ECONOMIC GEOGRAPHY

- ◉ Recognizes several different sources of wealth, emphasizing human capital and, increasingly, social capital
 - Social capital refers, among other things, to governance and institutions
- ◉ Many resource-rich countries have fared badly, while several resource-poor countries have done well
- ◉ There are many kinds of capital and many different sources of growth

FROM NATURAL RESOURCES TO HUMAN CAPITAL

- ◉ Listen to Lee Kwan Yew, founding father of Singapore (1959-1991):
- ◉ “I thought then that wealth depended mainly on the possession of territory and natural resources, whether fertile land . . . , or valuable minerals, or oil and gas. It was only after I had been in office for some years that I recognized . . . that the decisive factors were the people, their natural abilities, education and training.”



OVERVIEW: THREE PARTS

1. Sources of growth with different types of capital
2. Contribution of natural resources to economic growth around the world
Selected policy issues
3. Empirical evidence and stories
Mixed blessing?
Keys to success?

Case studies
Cross-country studies

1 SOURCES OF GROWTH

Extensive vs. intensive growth

1. Saving and investment
Real capital
2. Education, health care
Human capital
3. Exports and imports
Foreign capital
4. Democracy and freedom
Social capital
5. Stability
Financial capital
6. Diversification away from
Natural capital

Effects on growth are undisputed

Effects on growth are somewhat controversial

1 SOURCES OF GROWTH

Efficiency, institutions, and governance

1. Saving and investment
Real capital
2. Education, health care
Human capital
3. Exports and imports
Foreign capital
4. Democracy and freedom
Social capital
5. Stability
Financial capital
6. Diversification away from
Natural capital

All six are generally considered desirable in and of themselves
How to attain these goals is another matter

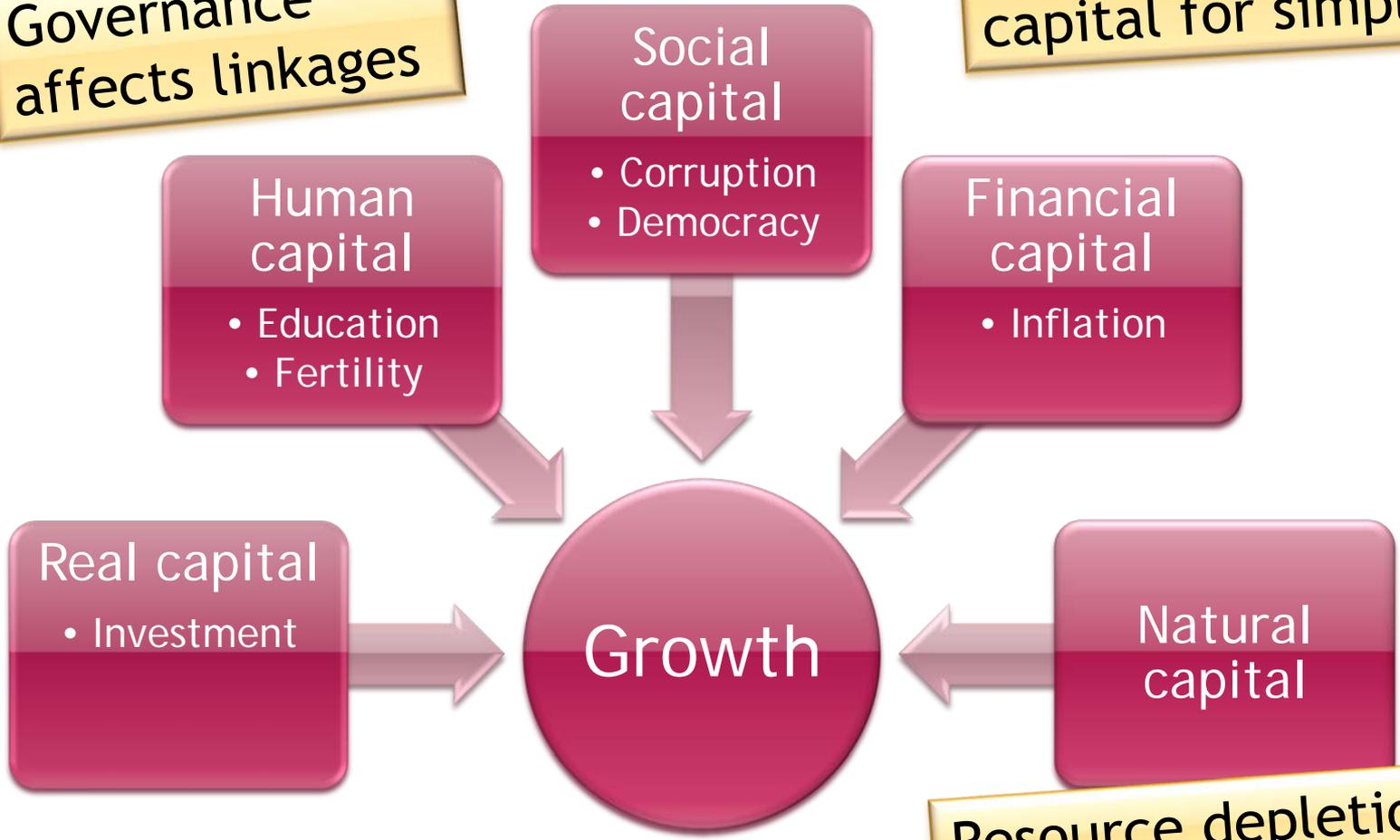
SOURCES OF GROWTH

- How much government involvement is necessary to diversify?
 - Industrial policy? Picking winners seldom works
- What role for finance?
 - Case of Iceland: fishing rights are allocated free of charge to boat owners even if, by law, Iceland's fish is a common property resource
 - Fishing quotas were quasi-legally used as collateral for crushing private debts
 - Banks were privatized in like manner, and crashed promptly
- Need solutions based on general principles and tailored to specific circumstances
 - Not one-size-fits-all

DIFFERENT KINDS OF CAPITAL AND GROWTH

Governance affects linkages

Leave out foreign capital for simplicity



Human capital
• Education
• Fertility

Social capital
• Corruption
• Democracy

Financial capital
• Inflation

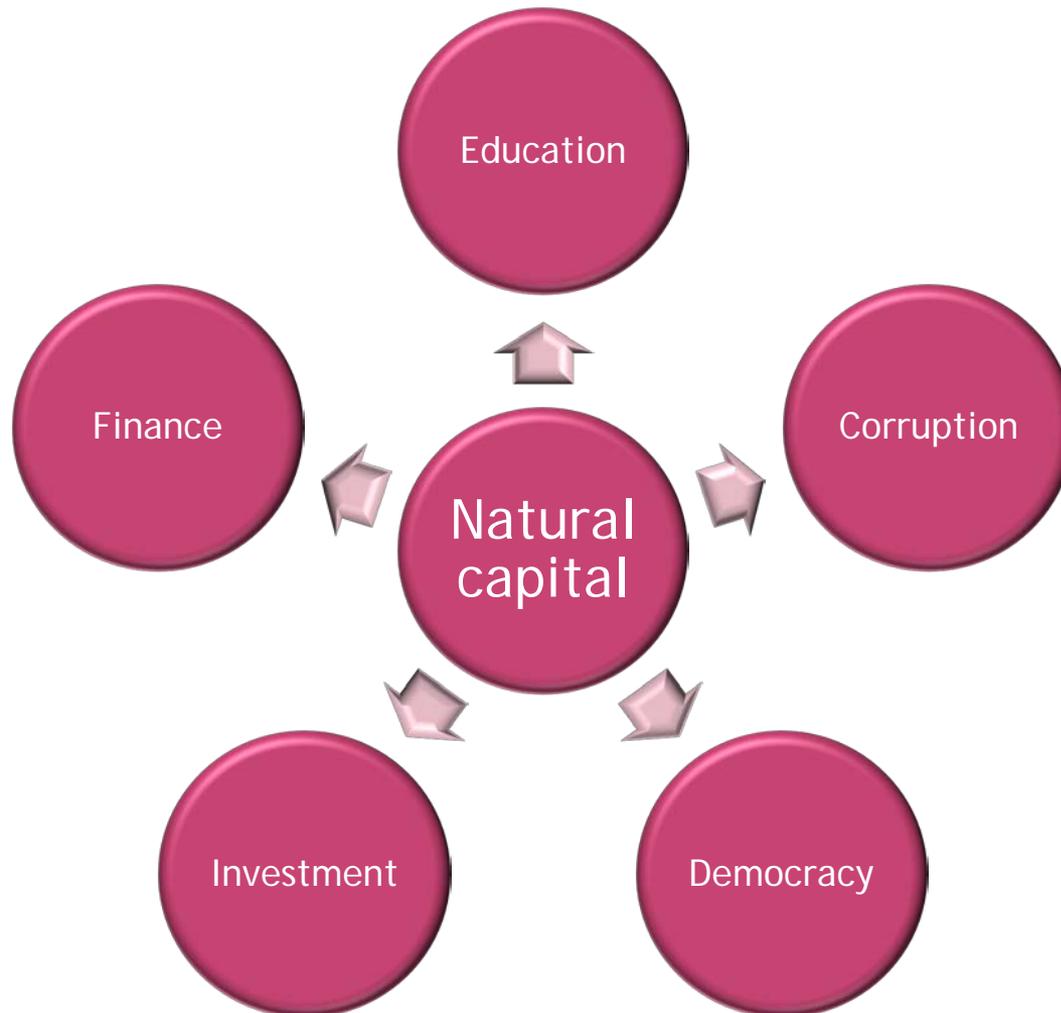
Real capital
• Investment

Growth

Natural capital

Resource depletion drag

NATURAL CAPITAL AND OTHER KINDS OF CAPITAL



DETERMINANTS OF GROWTH

Growth

Stability

Double diversification is good for growth,
and for other determinants of growth

Investment

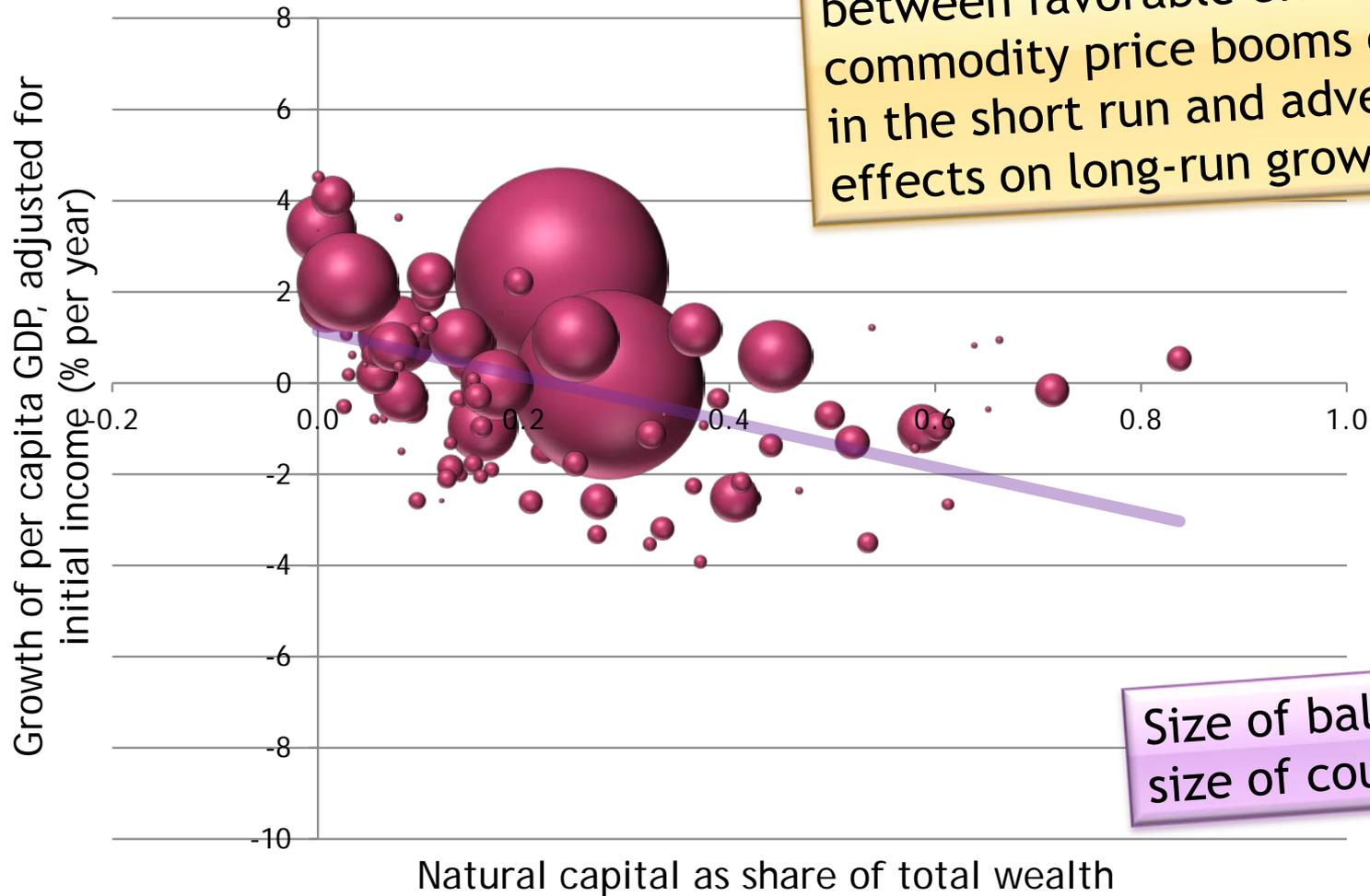
Exports

Education

Diversification

ECONOMIC GROWTH AND NATURAL CAPITAL 1960-2000

False contrast: No inconsistency between favorable effects of commodity price booms on output in the short run and adverse effects on long-run growth



Size of balls reflects size of countries

NATURAL RESOURCES: A MIXED BLESSING?

- ✓ Listen to King Faisal of Saudi Arabia (1964-1975):
- ✓ “In one generation we went from riding camels to riding Cadillacs. The way we are wasting money, I fear the next generation will be riding camels again.”



2 POLICY ISSUES IN RESOURCE RICH COUNTRIES

Four main areas

1. Fiscal policy
2. Monetary, financial, and exchange-rate policy and the Dutch disease
3. Institutions and governance
4. Diversification
 - **Economic**, away from excessive dependence on a few resources
 - **Political**, away from narrowly based power elites

FISCAL GOVERNANCE

Pigovian
principle

- Natural resource wealth is an efficient tax base because resource taxation causes minimal distortions to economic behavior
 - Case in point: Iceland's missed opportunity
 - Could have auctioned off catch quotas and used proceeds to abolish personal income taxes
 - Chose instead to allocate fishing quotas to boat owners free of charge
 - Then chose to privatize its banks the same way, and they all collapsed a few years later in 2008
- Important to reduce other less efficient taxes to keep overall tax burden reasonable
 - Also, spend tax revenues efficiently

Taxes vs. fees

FISCAL RULES

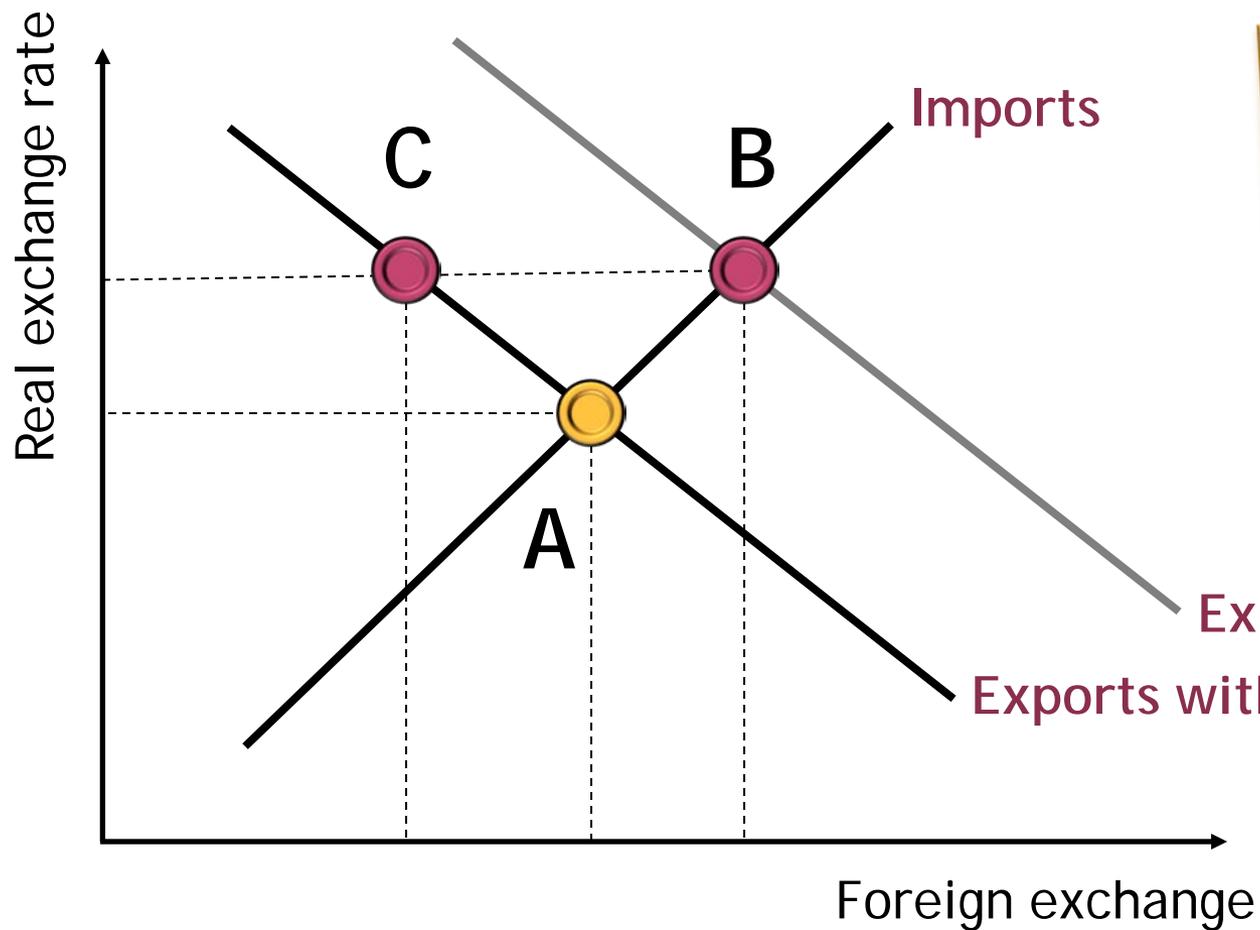
◉ Price stabilization funds

- Build up reserves when commodity prices are high
- Use up reserves when prices are low
 - Aim is to shield producers from price fluctuations
 - Subject to similar reservations as stabilization policies

◉ Example from Chile

- Government can run a deficit larger than the target of zero, or 1% surplus, to the extent that
 - Output falls short of potential, or
 - Price of copper is below its medium-term (10-year) equilibrium
 - Two panels of experts determine the output gap and the medium-term equilibrium price of copper

DUTCH DISEASE: HOW OIL EXPORTS CROWD OUT NONOIL EXPORTS



Oil discovery leads to appreciation, and reduces nonoil exports

Composition of exports matters

DUTCH DISEASE: DISEASE OR NOT?

- ⊙ Term refers to fears of de-industrialization that gripped the Netherlands following appreciation of Dutch guilder after discovery of natural gas deposits in North Sea around 1960
- ⊙ Is it a disease?
 - Some say **No**, viewing it simply as matter of one sector's benefiting at the expense of others, without seeing any macroeconomic or social damage done
 - Others say **Yes**, viewing the Dutch disease as an ailment, pointing to the potentially harmful consequences of the resulting reallocation of resources - from high-tech, high-skill intensive service industries to low-tech, low-skill intensive primary production, for example - for economic growth and diversification

DUTCH DISEASE: DIFFERENT MANIFESTATIONS

China's undervalued renmimbi

- Overvaluation of currency hurts other exports and import-competing industries
 - Norway's total exports have been stagnant in proportion to GDP since before oil discoveries
 - Oil exports have crowded out nonoil exports
 - Nokia is Finnish, LM Ericsson is Swedish, B&O is Danish
 - Norway's almost unique unwillingness to join EU
- Keeping inflation low to avoid overvaluation
 - Price stability requires good **monetary governance** through independent yet accountable central banks
 - Healthy financial sector development also requires good monetary governance, including transparency

DUTCH DISEASE: DIFFERENT MANIFESTATIONS

Other people's money

False sense of security
Neglect of education

- Rent seeking ...
 - Especially in conjunction with ill-defined property rights, imperfect or missing markets, and lax legal structures
- ... tends to divert resources away from more socially fruitful economic activity
- International initiatives to raise transparency
 - **Extractive Industries Transparency Initiative (EITI)** aims to set global standard for transparency in oil, gas and mining
 - **Natural Resource Charter** sets out principles for how to manage natural resources for development

DUTCH DISEASE: DIFFERENT MANIFESTATIONS

- ◉ Volatility of commodity prices leads to volatility in exchange rates, export earnings, output, and employment
- ◉ Volatility can be detrimental to investment and growth
- ◉ Hence, natural-resource rich countries may be prone to sluggish investment and slow growth due to export price volatility
- ◉ Likewise, high and volatile exchange rates tend to slow down investment and growth

GOOD POLICIES MATTER

- ◉ Fiscal policies need to foster efficient revenue collection as well as efficient, growth-friendly public spending
 - To be efficient and fair, the utilization of natural resources requires that the owners - the people - be appropriately compensated
 - Property rights to natural resources belong the people by international law
 - ◉ Article 1 of the **International Covenant on Civil and Political Rights** states that “All people may, for their own ends, freely dispose of their natural wealth and resources” (Wenar, 2008)
- ◉ Monetary policies need to avoid overvaluation and excessive volatility of the currency

GOOD INSTITUTIONS AND GOVERNANCE ALSO MATTER

◉ Consider Norway

- From day one, Norway's oil and gas reserves were defined by law as common property resources, clearly establishing the legal rights of the Norwegian people to the resource rents
- On this legal basis, the government has absorbed about 80% of the resource rent over the years
- Government laid down economic as well as ethical principles ('commandments') to guide the use and exploitation of the oil and gas for the benefit of current and future generations of Norwegians

GOOD INSTITUTIONS AND GOVERNANCE

Nigeria's economy minister:
"Oil has made us lazy"

- ◉ Norway was a well-functioning, full-fledged democracy long before its oil discoveries
- ◉ Democrats are less likely than dictators to try to grab resources to consolidate their political power
 - Elsewhere, point resources such as oil and minerals have proved particularly "lootable"
- ◉ Petroleum industry has conferred sizable spillover benefits on others at home and abroad through transfer of technology as well as research and development

Norwegians work less than Danes and Swedes, true, but no less than Germans

SUCCESS STORIES

- Success stories without natural resources
 - Hong Kong
 - Japan
 - Singapore
 - Switzerland
- Success stories with natural resources
 - Botswana
 - Chile
 - Mauritius
 - Norway
- How did they succeed?

SUCCESS STORIES

⊙ How Botswana succeeded

Acemoglu *et al.* (2003)

- Started out at independence in 1966 with 12 km of paved roads, 22 college graduates, and 100 secondary-school graduates
- Diamonds, discovered in 1967, provide tax revenue equivalent to 33% of GDP
- Sub-Saharan Africa's highest per capita GNI
- Good policies, good institutions, democracy

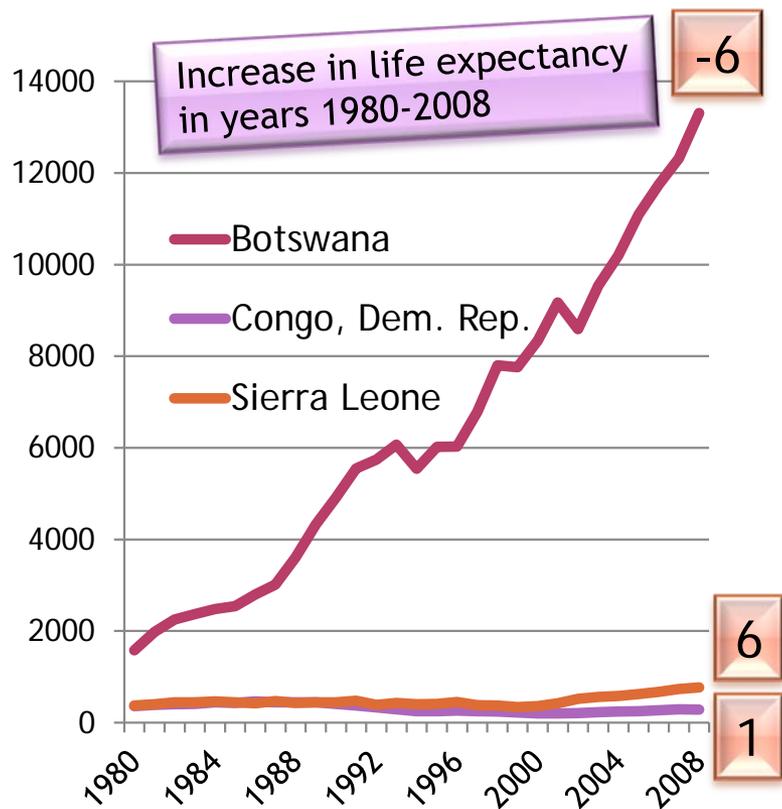
⊙ How Mauritius succeeded

Frankel (2010)

- Emphasized trade and education in lieu of sugar
- Cosmopolitan population
- Again, good policies, good institutions, democracy

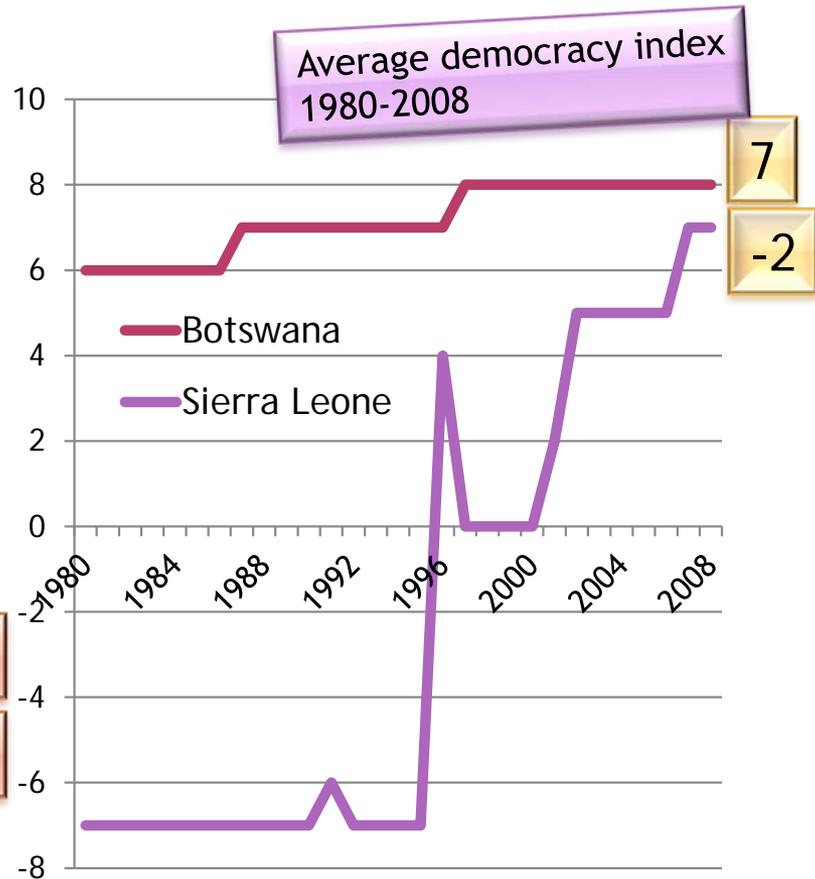
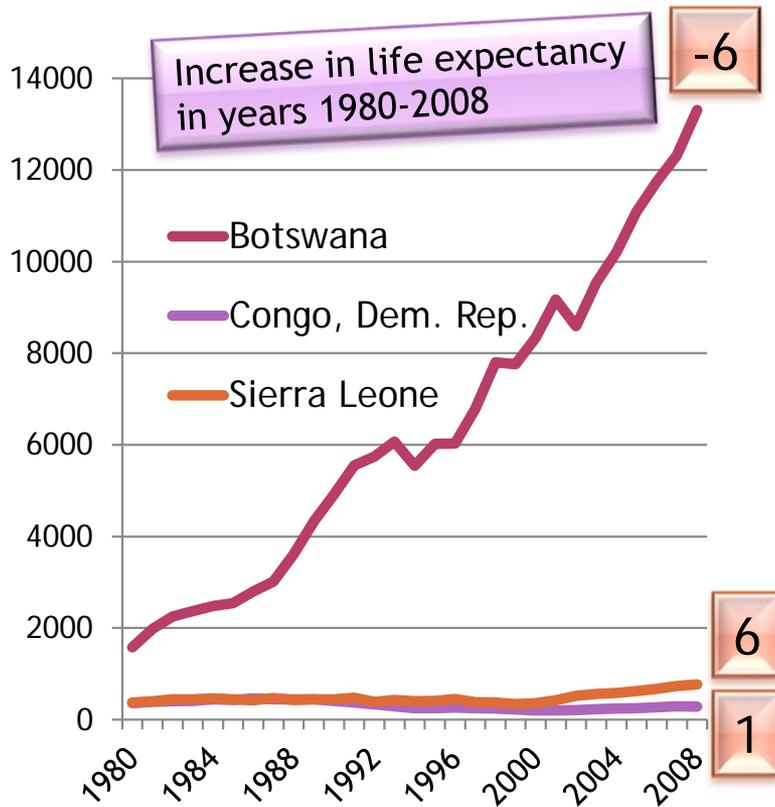
⊙ Let's look at some numbers

BOTSWANA AND DIAMONDS



Per Capita GNI (USD at PPP)

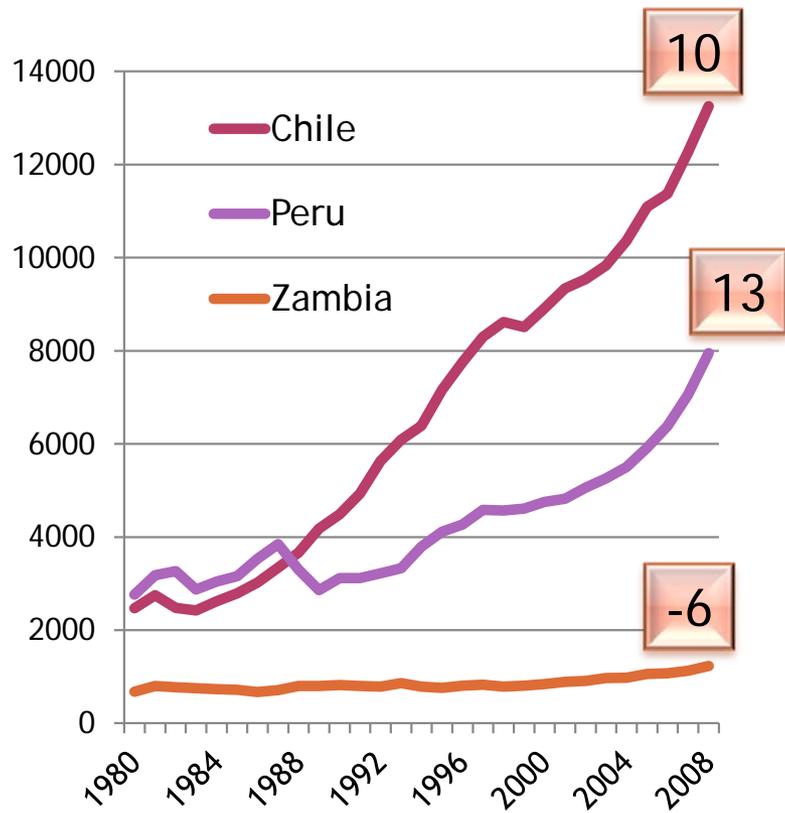
BOTSWANA AND DIAMONDS



Per Capita GNI (USD at PPP)

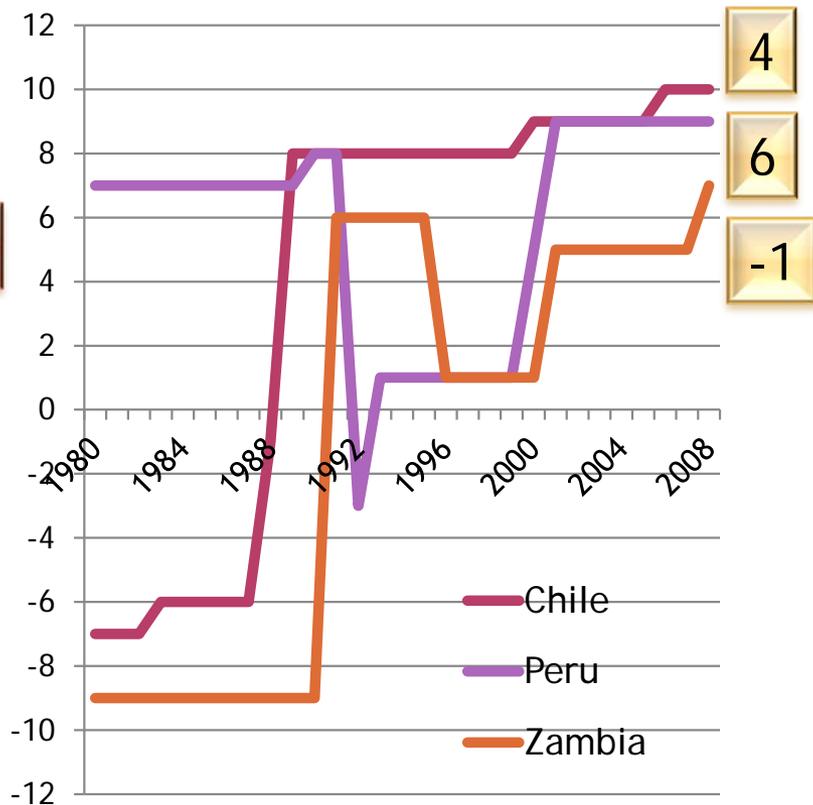
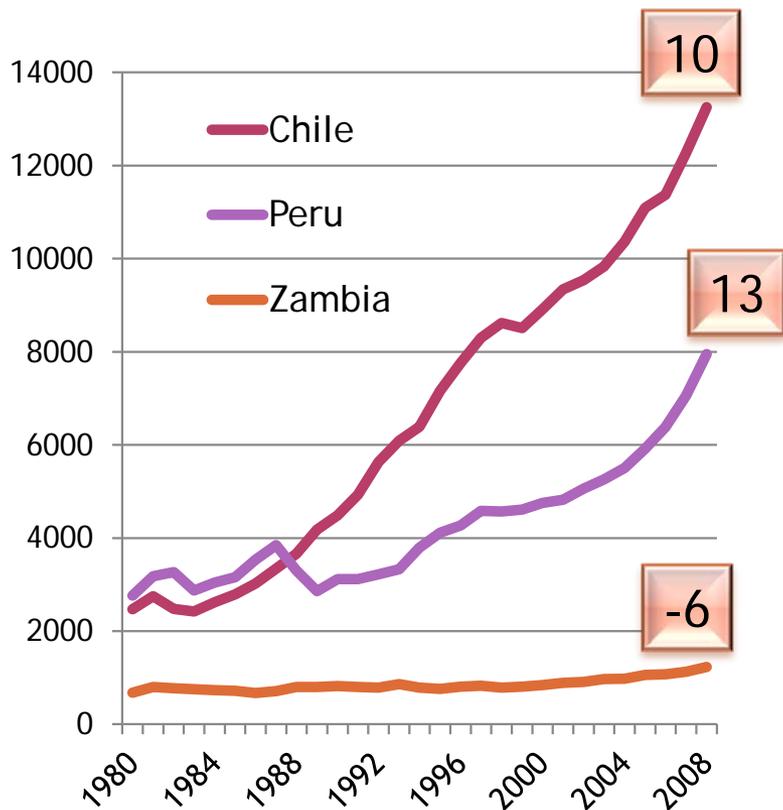
Democracy

CHILE AND COPPER



Per Capita GNI (USD at PPP)

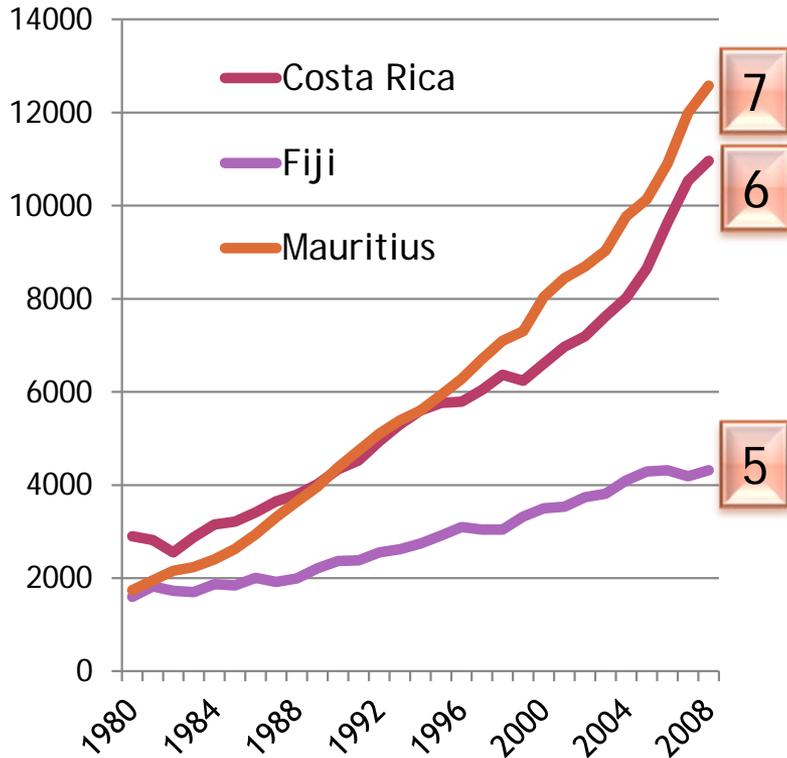
CHILE AND COPPER



Per Capita GNI (USD at PPP)

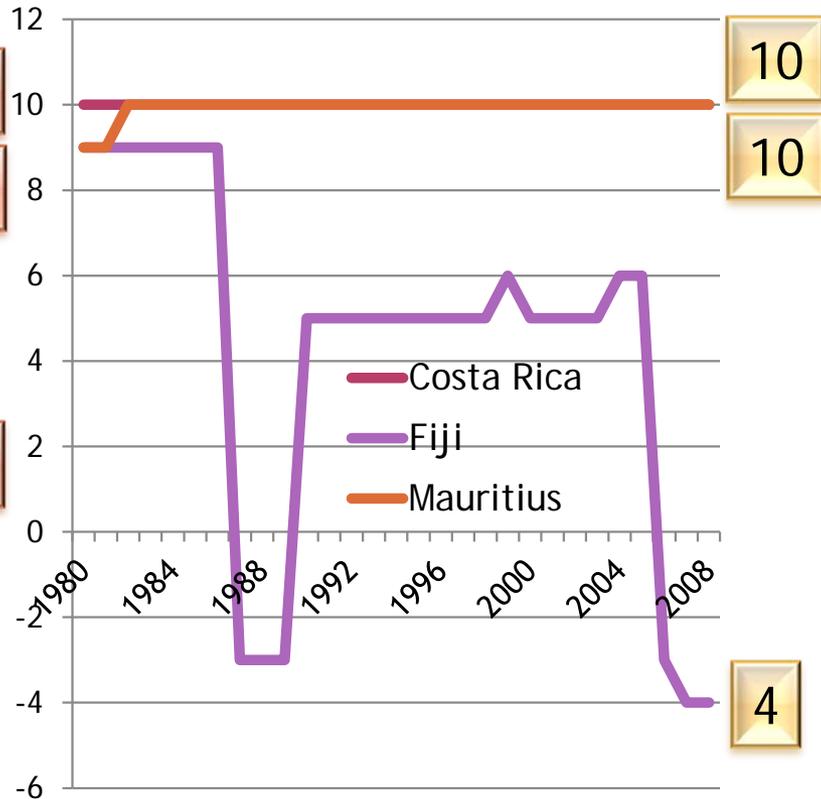
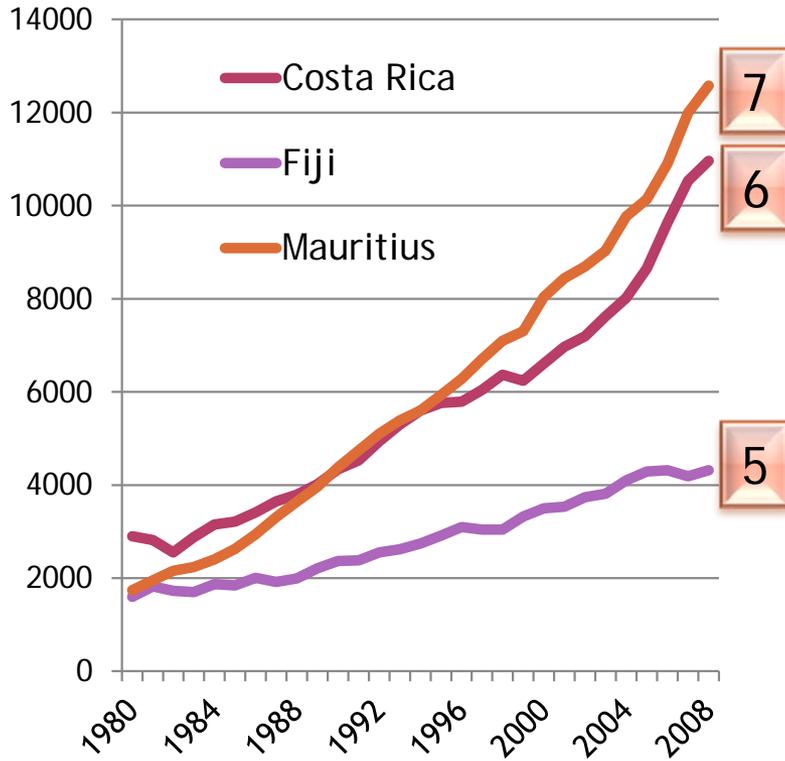
Democracy

MAURITIUS AND SUGAR



Per Capita GNI (USD at PPP)

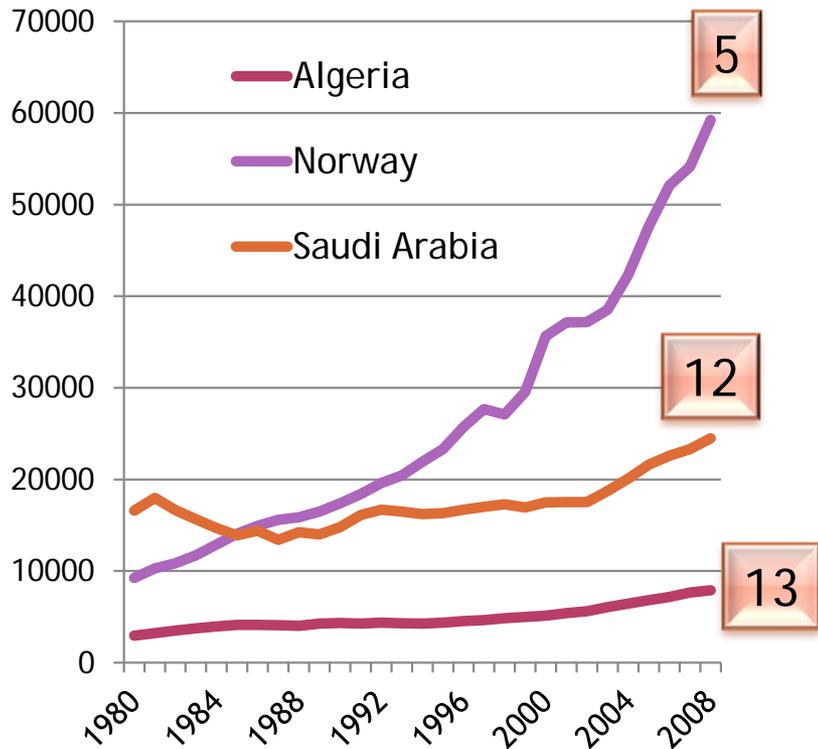
MAURITIUS AND SUGAR



Per Capita GNI (USD at PPP)

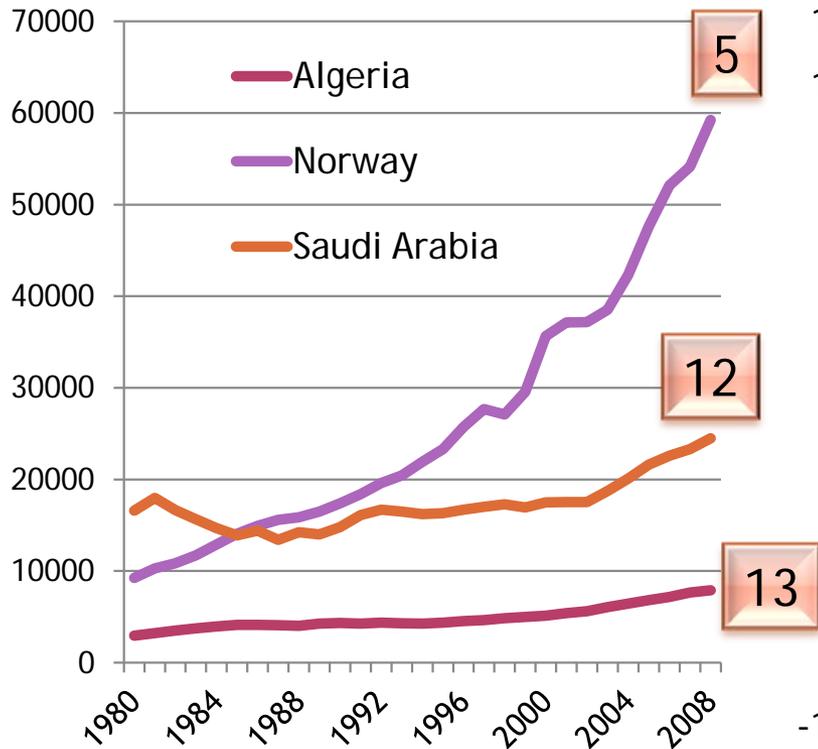
Democracy

NORWAY AND OIL

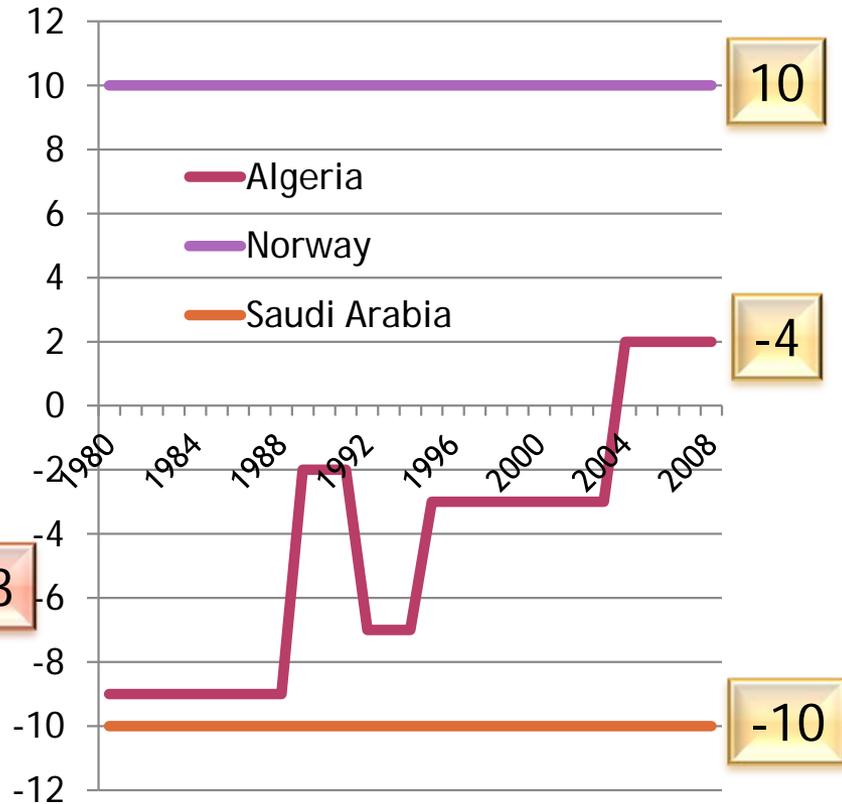


Per Capita GNI (USD at PPP)

NORWAY AND OIL



Per Capita GNI (USD at PPP)



Democracy

3

NORWAY: NOT JUST OIL

- ⊙ The problem is not the existence of natural wealth as such ...
 - ... but rather the failure to avert the dangers that accompany the gifts of nature
- ⊙ Norway is, so far, a success story
 - Government invests **80%** of oil rent entirely in foreign securities
 - 60% in equities
 - 40% in fixed-income securities

NORWAY: NOT JUST OIL

- ⦿ Norway always had its natural resources
- ⦿ It was only with the advent of educated labor that it became possible for the Norwegians to harness those resources on a significant scale
- ⦿ Human capital accumulation was the primary force behind the economic transformation of Norway
 - Natural capital was secondary

OIL FUND, NOW PENSION FUND

- ◎ The purpose of the oil fund
 - Share the wealth fairly: Pension fund
 - Shield domestic economy from overheating and possible waste
- ◎ Fund has grown huge: **USD 450 billion**
 - That makes almost USD 100K per person
 - Norwegians have resisted temptation to use too much of the money to meet current needs

GOOD INSTITUTIONS AND GOVERNANCE

- ◎ Long tradition of democracy and market economy in Norway since before the advent of oil
 - Large-scale rent seeking was averted as oil was, by law, defined as a common-property resource from the beginning
 - Adequate investment performance
 - Excellent education record
 - Female college enrolment doubled from 46% of each cohort in 1991 to 94% in 2006

BUT, YES, CHALLENGES

- ◎ Some (weak) signs of Dutch disease
 - Stagnant exports, sluggish FDI
 - Limited interest in joining EU and EMU
- ◎ Some signs also of unwillingness to undertake difficult reforms
 - Health care provision
- ◎ Management of oil fund moved from Ministry of Finance to Central Bank 1999

GOOD TIMES DEMAND STRONG DISCIPLINE

◎ Natural resources bring risks

- A false sense of security leads people to underrate or overlook the need for good policies and institutions, good education, and good investment
- Awash in easy cash, they may find that hard choices perhaps can be avoided
- Awareness of these risks is perhaps the best insurance policy against them

These slides can be viewed on my website: www.hi.is/~gylfason

OLD STORY: THE RISKS ARE REAL

- David Landes (1998) tells the story of Spain following the colonization of South and Central America which made Spain rich in gold and other natural resources:

THE END

“Easy money is bad for you. It represents short-run gain that will be paid for in immediate distortions and later regrets.”