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High-level seminar on
Natural resources, finance, and development:
Confronting Old and new Challenges
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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

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

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
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. 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

Extensive vs. intensive growth

Effects on growth are undisputed

Effects on growth are somewhat controversial
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.
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

Need solutions based on general principles and tailored to specific circumstances
- Not one-size-fits-all
Differents kinds of capital and growth

Governance affects linkages

Social capital
- Corruption
- Democracy

Financial capital
- Inflation

Human capital
- Education
- Fertility

Real capital
- Investment

Natural capital

Leave out foreign capital for simplicity

Resource depletion drag
Natural capital and other kinds of capital

- Education
- Finance
- Corruption
- Investment
- Democracy
Double diversification is good for growth, and for other determinants of growth.
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.
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.”
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
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
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

**Diagram:**

- **Axes:** 
  - Vertical axis: Real exchange rate
  - Horizontal axis: Foreign exchange

- **Points:**
  - A: Exports without oil
  - B: Exports with oil
  - C: Imports

**Notes:**

- Oil discovery leads to appreciation, and reduces nonoil exports.
- Composition of exports matters.
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

- 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 non-oil 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
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.
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
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.
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.

Nigeria’s economy minister: “Oil has made us lazy”

Norwegians work less than Danes and Swedes, true, but no less than Germans.
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
- 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
- Emphasized trade and education in lieu of sugar
- Cosmopolitan population
- Again, good policies, good institutions, democracy

Let’s look at some numbers

Acemoglu et al. (2003)

Frankel (2010)
BOTSWANA AND DIAMONDS

Increase in life expectancy in years 1980-2008

Per Capita GNI (USD at PPP)
Per Capita GNI (USD at PPP)
MAURITIUS AND SUGAR

Per Capita GNI (USD at PPP)
NORWAY AND OIL

Per Capita GNI (USD at PPP)

- Algeria
- Norway
- Saudi Arabia
NORWAY AND OIL

Per Capita GNI (USD at PPP) | Democracy

- Algeria
- Norway
- Saudi Arabia

-12 -10 -8 -6 -4 -2 0 2 4 6 8 10 12

Algeria
Norway
Saudi Arabia


-10 -8 -6 -4 0 2 4 6 8 10 12

-10 -4

10 5 12 13
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 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.
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
G O O D  I N S T I T U T I O N S  A N D  G O V E R N A N C E

- 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
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
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.
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:

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