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Preventing Natural Resource Curse

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Why do we need to think about Natural Resources?

Being Natural Resource-Rich is…

- Lucky?
  - ■Do not need to import Oil, Gas or other metals from other countries
  - ■Can earn money by exporting them
- Unlucky?
  - ■Many countries suffering from violent conflicts
  - ■Unfair terms of trade (Prebisch-Singer Hypothesis)
  - ■Resource-rich countries tend to have undemocratic government

Natural Resources

- Commodities
  - **Exhaustive /** Non Renewable **Resources**
    - Mineral resources (**Mining**)
    - Fossil Fuels(Coal **, Crude Oil,** Natural Gas)
- Land
- Forest
- Water

} Renewable

- Many poor countries in the world are **historically** dependent on natural resource export

Poverty → Resource Dependence

◆wars and conflicts for long years, manufacturing and agriculture declined, only left with commodity export

Resource Dependence → Poverty

◆ the availability of natural resource (and dollars from it) leads to problems

Advantages and Risks of having natural resources

advantages

- Booster for **resource-based industrialization** (ex. Investment in Petro-Chemistry)
- Resource revenue will finance investment in education or agriculture (building schools, set up irrigation systems)

Risks

- Strong influence of **price** uncertainly and **volatility**
- Government budget and macroeconomy suffer from **Procyclicality**
- …and other difficulties under "**Resource Curse**"

1.What Is Resource Curse?

Resource Curse 1

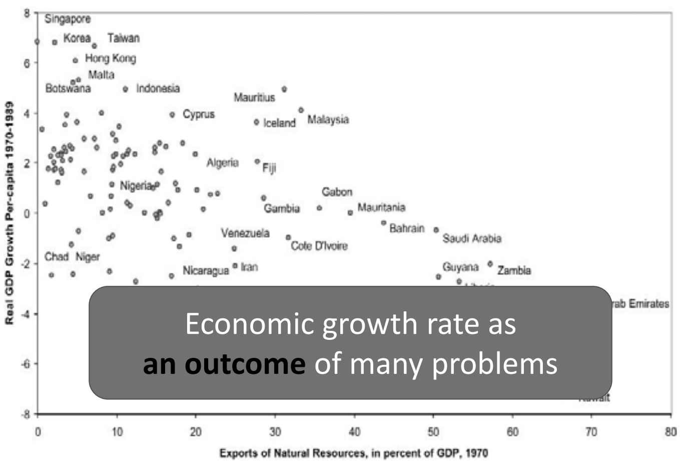
- historically resource-abundant low income countries tend to experience **lower economic growth** than resource scarce countries

"Resource Curse"
"Oil Curse"
"Paradox of Plenty"
"Resource Trap"

Resource Curse 2

- Negative correlation between **commodity export** and per capita **economic growth ratio** between 1970 to 1989

(Sachs and Warner 2001)



Jeffrey Sachs and Andrew Warner (2001) "The Curse of Natural Resources," *European Economic Review* 45: 827-838.

2. How Does the Resource Curse Work?

Mechanisms of "Curse"

A. Stagnation of other export sectors (manufacturing / agriculture)
⇒ **Dutch disease**

B. Budget deficit and **procyclicality** (increase of government expenditure)

C. Accumulation of external debt

D. Current account deficit (increase of imports)

E. Corruption and undemocratic government

F. Capital Flight and Low domestic investment

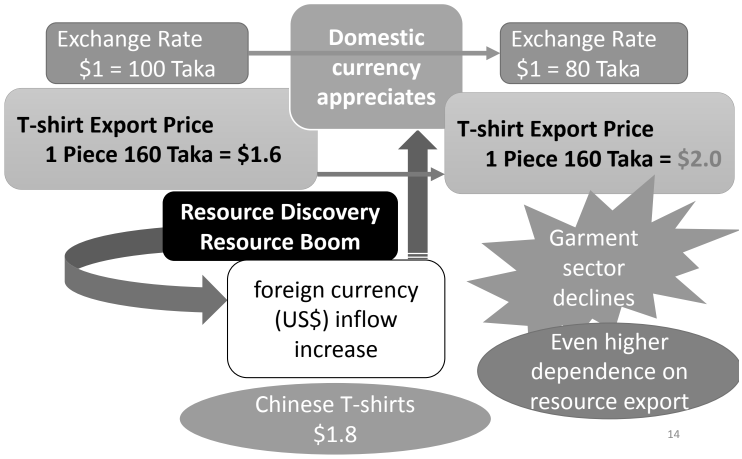
G. Violent conflicts

A. Stagnation of Export Sector other than Natural Resources

Dutch Disease

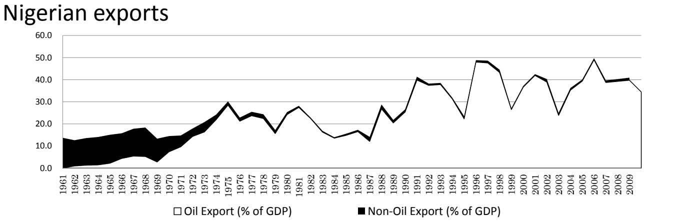
- Resource Prices denominated in dollar
- Increase of Resource Export means more inflow of foreign currency
- As foreign currency increases, domestic currency appreciates
- Other export sector loses international competitiveness as the currency appreciates
- Other export sectors stagnate   Ex.) Nigeria

Dutch Disease



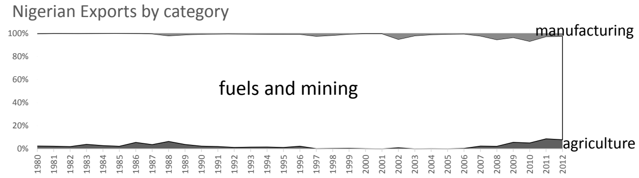
Decline of other industries

Nigerian exports



Source: CBN(2011) , Table D1.1 "Foreign Trade".

Nigerian Exports by category



Source: WTO Statistics Database

B. Budget Deficit and Procyclicality
C. Accumulation of External Debt

When Resource Price is high

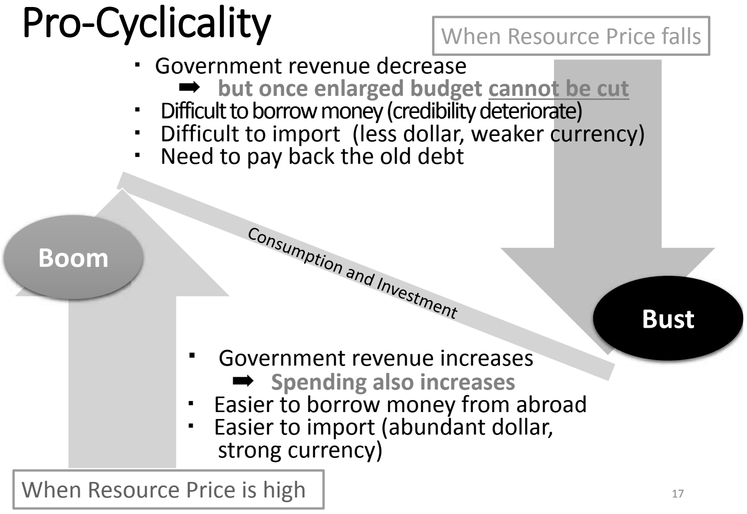
- government increases expenditure as Resource Revenue increases (new projects, new constructions, salary increase)
- Inflow of foreign currency eases payment for imports, thus import increases

When Resource Price falls

Boom-and-bust cycle

- Government revenue decrease
  - ➢Cannot size down the expenditure immediately
- Government runs budget deficit
  - ➢Borrowing from domestic banks
  - ➢Borrowing from foreign banks ⇒ **debt accumulation**
  - ➢Printing money ⇒ **Inflation** tax (seigniorage)

Pro-Cyclicality

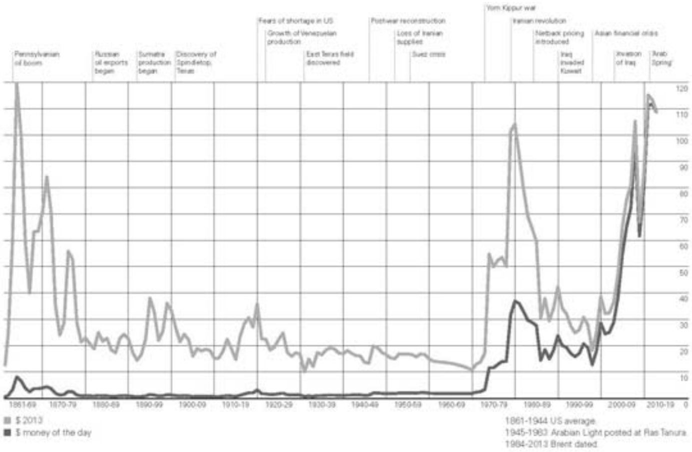


Where this "Cycle" comes from?

- **Prices ← World Economic Cycle**
- **Volatility of International Prices**
  - ◆Sudden Price hike and sudden Price fall
  - ◆Difficult (almost impossible) to forecast the movement

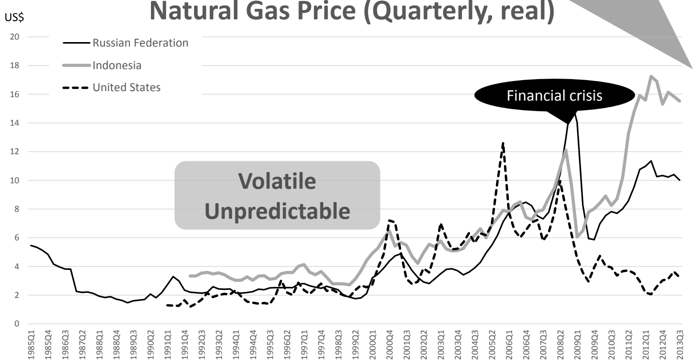
→difficult to forecast the government revenue change

Crude Oil Prices 1861-2013
US dollars per barrel, world events



Shale gas "revolution" in North America
→ opening export for Japan (2017～)

Natural Gas Price (Quarterly, real)



Volatile Unpredictable

Data source: IFS.

World gas prices may converge in lower level?!

D. Current Account Deficit

Current Account = Export-Import

- If **Export** > Import: Current Account Surplus
  Surplus allocated to domestic or foreign investment
- If Export < Import : **Current Account Deficit**
  Deficit must be fulfilled through foreign borrowing
  ⇒ **accumulation of foreign debt**

Investment vs Consumption

- High dependence on Import (due to Dutch disease)

When Resource Price is high

Consumption Boom

- Increase in Imports
  - High consumption, low saving (Current Account deficit)
- Increase of **Consumption goods** Import

Consumption Goods … Consumed for one time (Food, Alcohol etc.)

Capital Goods … Used for domestic production (Machineries etc.)

E. Corruption and Undemocratic Government

- **Resource abundance**
  ⇒government does not need to collect **tax**
  ⇒no responsibility to be accountable to tax payers
- **Undemocratic government**
  ⇒no regal tool to accuse government
  ⇒weak motivation for citizens to accuse government

F. Capital Flight

- A few domestic investment opportunity
- Less trust on
  - own government policy
  - local banks
  - value of their own currencies

⇒ **Outflow of capital** (**Capital Flight**)

Despite the strong need of capital and investment

G. Violent Conflicts

- disputes over rights to control the resources or providing revenue to cover the cost of war

→ Natural Resource revenue triggers/prolongs a conflict

- Over the past 60 years, 40% of civil wars are associated with natural resources
- since 1990 there have been at least 18 violent conflicts fuelled by the exploitation of natural resources

Other problems associated with Resource-dependent Economies

(1) FDI into Manufacturing vs Extractive Industries

(2) High unemployment ratio, increase of youth generation, and widening income gap

(3) Unsustainable development

(1) FDI to Extractive Industries

- "FDI is a very important key factor for successful growth in developing countries"
  … in case of FDI into ***manufacturing***.
  - Local employment
  - Technology dissemination through industrial linkage
  - Influence on Human Capital
- FDI into ***extractive*** sector is…
  - **Capital intensive**: little impact on local employment
  - **High technology**: difficult to be transmitted to local

  →**not necessarily growth conducive**

(2) Income gaps and unstable society

Demographically…

- High population growth
- Unstable society with large share of young population

FDI into Extractive Industries…

- Little job creation in the resource industry

  → **high unemployment among youth**

  → **widening income gap**

  → **increasing risks of criminals, violence and conflicts**

(3) Unsustainable development

- Unrenewable nature of metals and fossil fuels
- Possible technical change and demand shift in the world

3. How Resource Curse Can Be Prevented?

Possible measures

A. De-link the Government Expenditure and Resource Revenue

B. Set up Common Fund/Future Generation Fund

C. Implement EITI

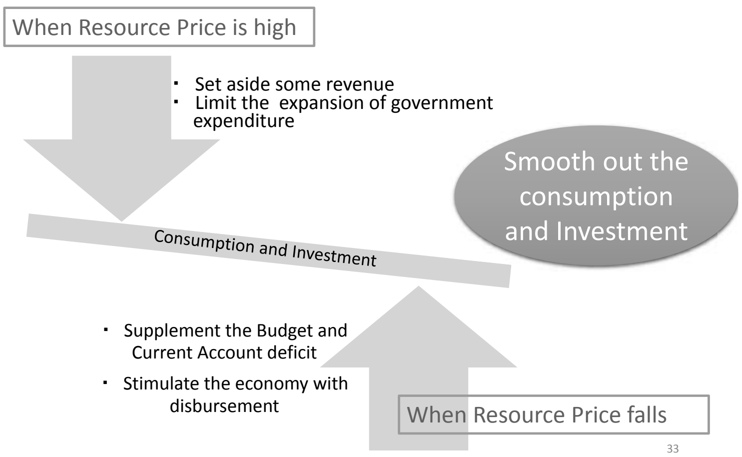
D. Promote Domestic Investment

A. De-link the Government Expenditure and Resource Revenue

Circumvent human psychological problems

- Setting Fiscal Rule on spending
  - Price-based rule
  - Expenditure Growth Rule
    - ➡ set the ceiling and floor for expenditure growth
- Promote independence of Central Bank
- Focus on Non-resource Primary Balance (NRPB)
- Preferential allocation on growth-enhancing and primary spending (education, health etc.)

Ideal Counter-Cycle



B. Set up a Common Fund

- High volatility of international resource prices
  Stabilization Fund
- Minerals and Fossil fuel resources are exhaustible
  ⇒Need to plan the economy after resource exhaustion
  Future Generation Fund
- Need to allocate resources to priority socioeconomic project
  Development Fund

Recent increase in Sovereign Wealth Fund

Governance of Natural Resource Funds

Rank (out of 23)	Country	Fund	Fund Score (out of 100)
1	Norway	Government Pension fund	100
2	Trinidad and Tobago	Heritage and Stabilisation Fund	98
3	Bahrain	Future Generations Reserve Fund	96
4	Chile	Copper Stabilization Fund	88
5	Timor-Leste	Petroleum Fund	83
6	Mexico	Oil Income Stabilization Fund	79
7	Canada (Alberta)	Alberta Heritage Savings Trust Fund	73
8	Kazakhstan	National Fund	67
9	Venezuela	National Development Fund (FONDEN)	58
10	Botswana	Pula Fund	52
11	Iran	Oil Stabilization Fund	50
12	Malaysia	National Trust Fund	46
13	Russia	Reserve Fund National Welfare Fund	46
14	Azerbaijan	SOFAZ	44
15	Gabon	Fond pour les Générations Futures	35
16	Angola	Fundo de Reserva do Tesouro Nacional	25
17	Saudi Arabia	Public Investment Fund	19
18	Nigeria	Sovereign Wealth Fund Excess Crude Oil Account	17
19	Kuwait	Kuwait Investment Authority	15
20	Algeria	Fonds de Régulation des Recettes	6
21	Qatar	Qatar Investment Authority	2
22	Equatorial Guinea	Fund for Future Generations	0
23	Libya	Libyan Investment Authority	0

Revenue Watch Institute (2013).

Setting up Common Funds

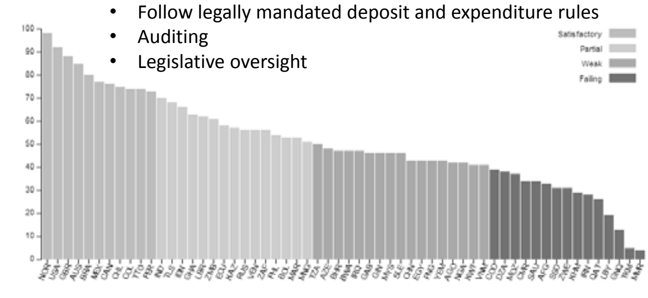
Aims:

- Buffering for price change and revenue stabilization
- Reserve for future generation (after resource dry up)
- Funding source for public investment

Special skills and experiences required
Need specialists on international finances

"80% of countries fail to achieve good governance in their extractive sectors"

- Comprehensive and timely report
- Follow legally mandated deposit and expenditure rules
- Auditing
- Legislative oversight



The Resource Governance Index (RGI) measures the quality of governance in the oil, gas and mining sectors of 58 countries.

Resource Governance Index 2013
http://www.revenuewatch.org/rgi

C. Implement the EITI

- **Extractive Industry Transparency Initiative**

  Compliant countries: 29,

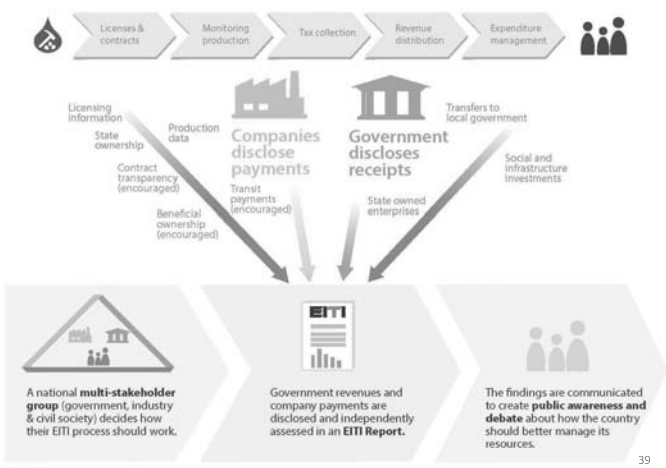
  including Mozambique, Tanzania, and Zambia

  Candidate countries: 17

  including Ethiopia and Myanmar
- Objective
  - Increase the government transparency of resource revenue

    ⇒ accountability to citizens
  - Promote the transparency of resource developing foreign companies
- A guideline for Efficient use of Natural Resource Revenue

The EITI Standard



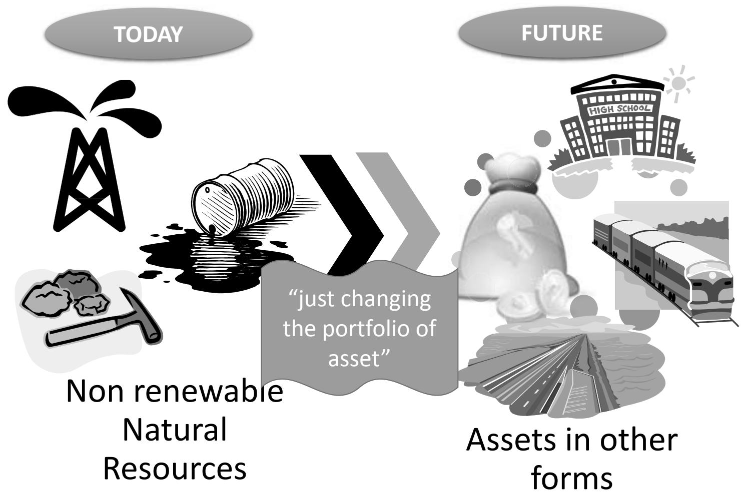
D. Promote Domestic Investment

- Current generation is depleting the national wealth, which should be left for future generation, at least in different form

conversion of asset

Natural Resource → man-made capital (fund, buildings, infrastructures)

→ Human Capital (knowledge, culture)



4. Experiences of Resource-Rich Countries

Cursed

Nigeria

- Dutch disease
  - Decline of other industries
  - Import-dependent: high consumption
  - Low agricultural productivity: mass food import
- Budget deficit: high government spending and subsidy
  - debt accumulation
- Insufficient refinery capacity, domestic supply shortage
- Violent conflicts, secession
  - Biafran War, continuous kidnapping by youth armed group
- High government corruption over “resource rent”
  - Ministry of Petroleum Resources⇔ national oil company (NNPC)
  - government ⇔ transnational companies
  - government ⇔ domestic oil venders

Success cases

Indonesia and Malaysia

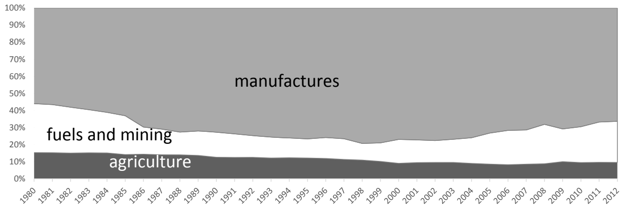
Indonesia

- Prudent fiscal and exchange-rate policies
  - Planning based on long-term vision
  - Good control on over-spending
- Resource allocation toward manufacturing, agriculture and human resource development
- High saving ratio of resource revenue
  ex) 1974-78 Indonesia saved 1/3 of oil revenue abroad
- Investment in rural area

Malaysia

- Late comer: Operation started after development policy got on track

Malaysian Exports by category



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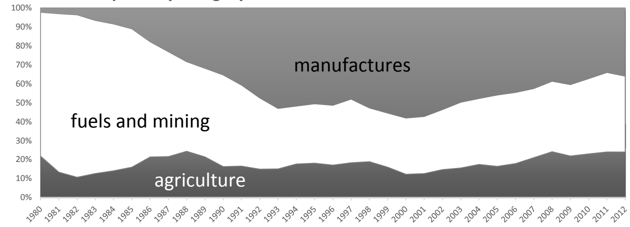

Source: WTO Statistics Database