

Revenue Management: Macroeconomic frameworks and policy options

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January 2017

Chile

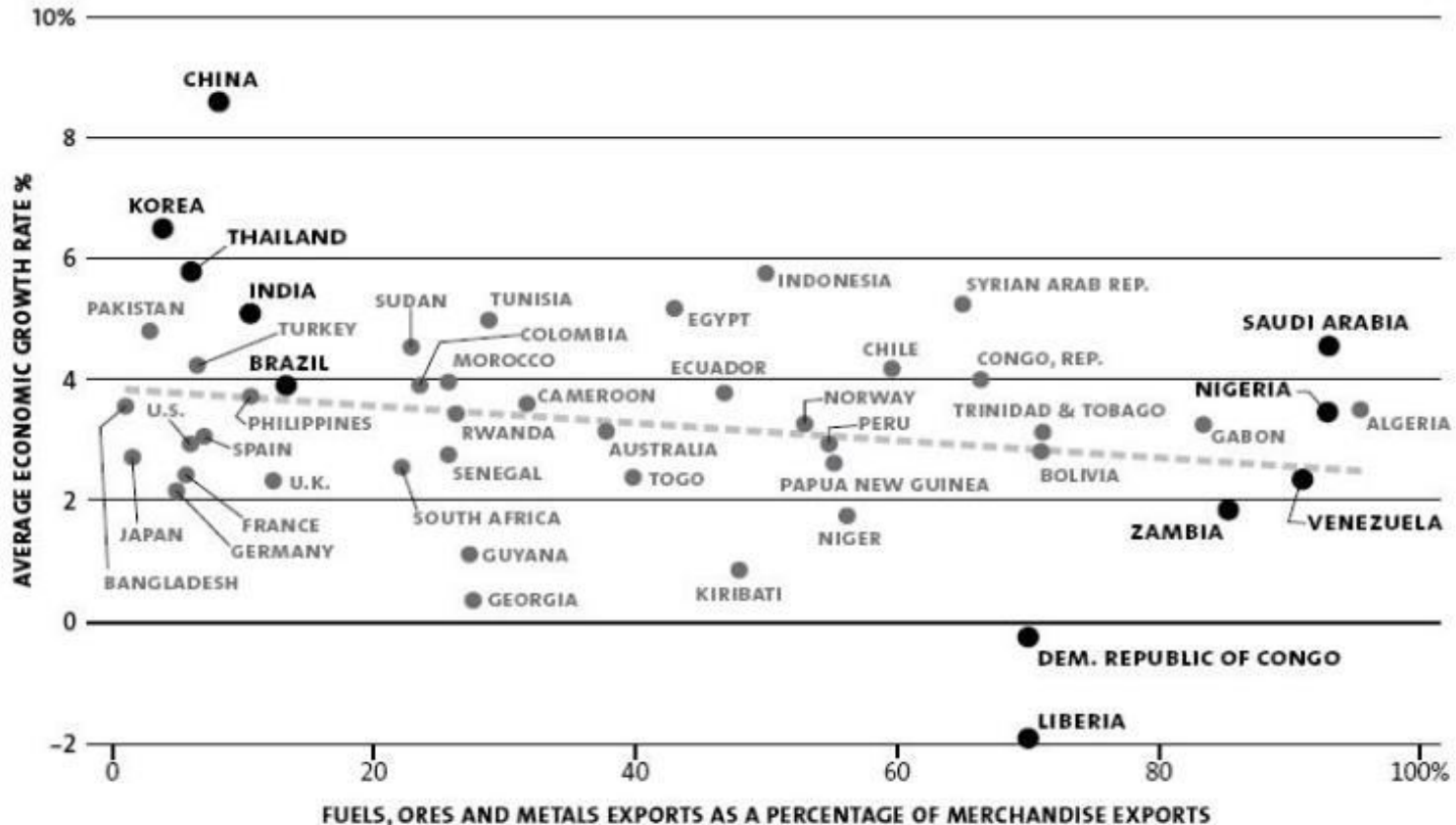


Azerbaijan



Country evidence

MINERAL EXPORTS AND GROWTH, 1970-2008



SOURCE: World Development Indicators, World Bank

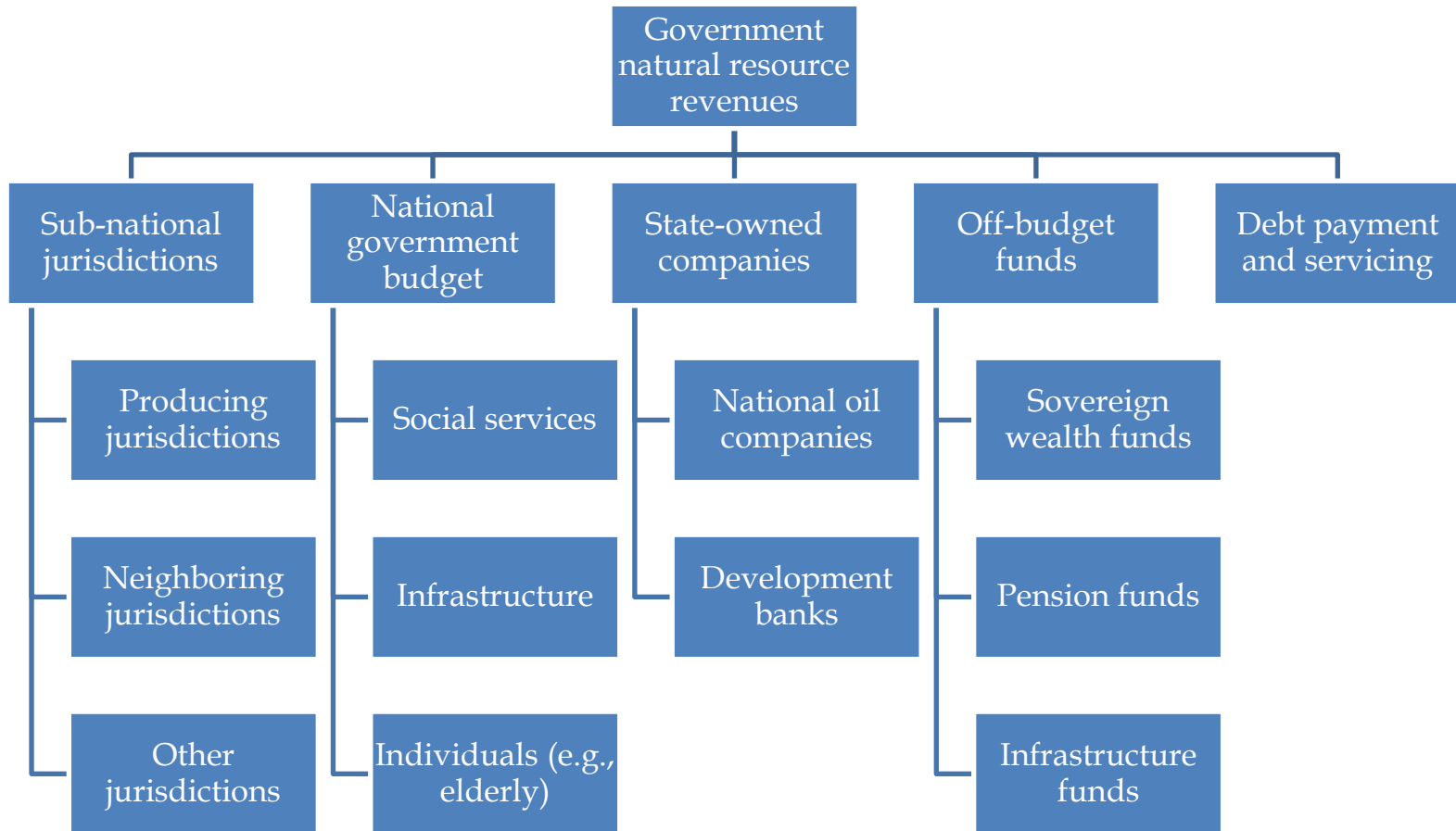
Source: Frankel 2011

Essential Questions

- What are the principle challenges in managing non-renewable resource revenues?
- How *should* governments manage resource revenues?
- How *do* governments manage resource revenues?

Through which institutions does money flow from oil / mineral sales into public investments like healthcare, education or infrastructure?

Revenue distribution options



Distribution of public money
is determined by the Public
Financial Management (PFM)
system.

But what is a PFM system?

Public Financial Management (PFM)

Laws, organizations and procedures to control:

- Tax collection
- Development planning
- Government expenditures
- Borrowing and debt
- Project appraisal, procurement and oversight
- State-owned companies
- Extra-budgetary fund
- Subnational finances

Budget basics

- **‘The budget is a document which forecasts and authorizes the annual receipts and expenditures of the State.’**

French decree of 1862 (quoted from Stourm 1917:2)

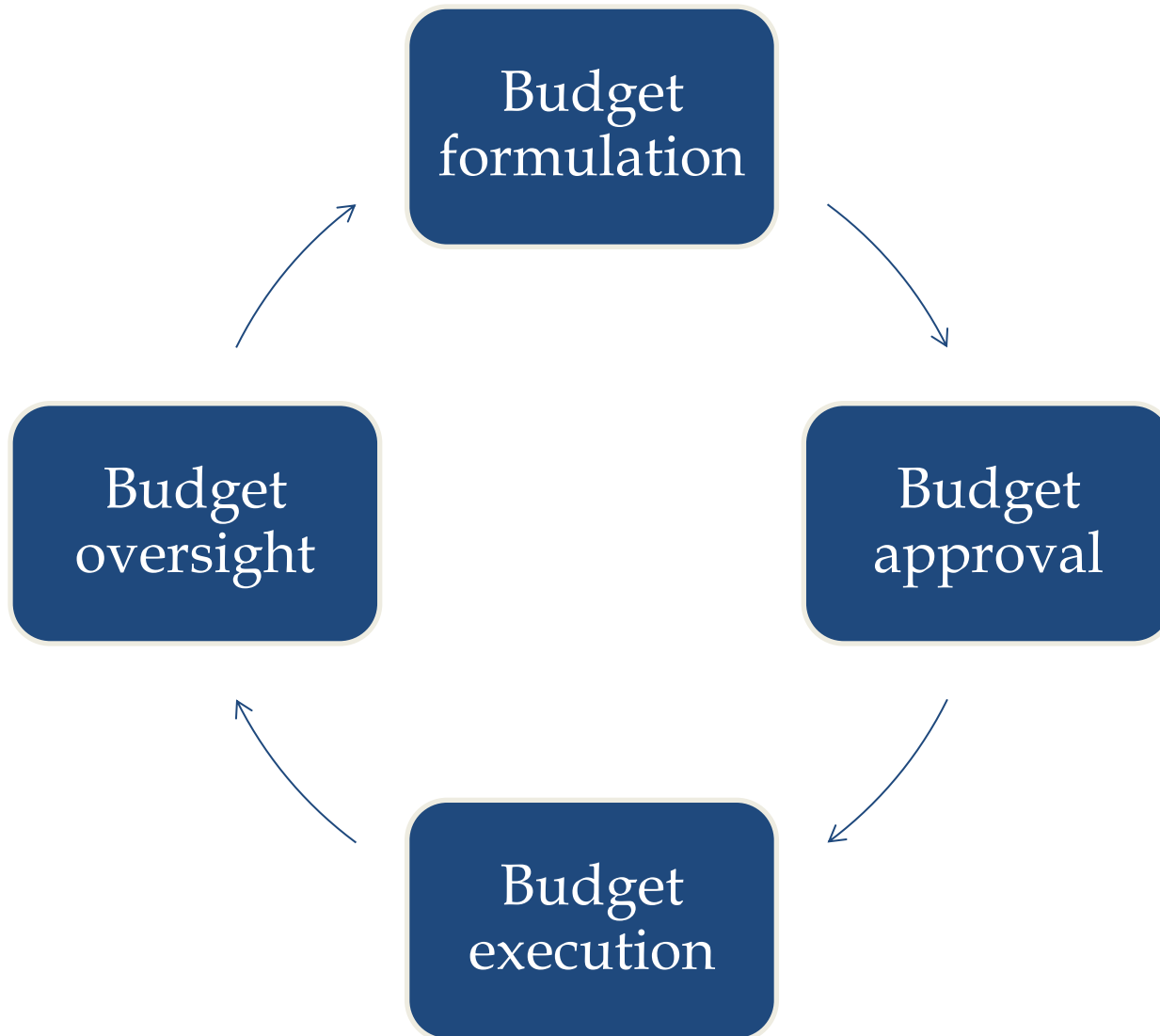
- **‘The budget is the skeleton of the state stripped of all misleading ideologies.’**

Rudolf Goldscheid (quoted from Schumpeter 1918:100)

- **‘It's clearly a budget. It's got a lot of numbers in it.’** ([video](#))

George W. Bush (Reuters, 5 May 2000)

The budget cycle



But budgets can be more complex...

- Fiscal envelopes
- Multi-year fiscal frameworks
- Line-item vs. program vs. performance vs. zero-based budgeting
- Cash vs. accrual accounting

Other key concepts

- Public welfare and efficiency
- Opportunity cost
- Unified budgets (“Why not include in the budget?”)
- “Finance follows function”

Topics

Unique Characteristics of Resource Revenues

Dutch Disease and Absorptive Capacity

Volatility

Resource Sustainability

Fiscal rules

Macroeconomic management: Why treat oil, gas and mineral revenues differently?

Oil, gas and mineral revenues:

1

Are large capital inflows

2

Are volatile and uncertain

3

Are finite

4

Are “free money” that are not directly tied to citizens



Results in specific challenges

Specific challenges

Short term	Dutch disease and 'absorptive capacity constraints'
Medium term	Volatility
Longer term	Exhaustibility
All Times	Non-compliance with rules, lack of public accountability, and wasteful spending

Topics

Unique Characteristics of Resource Revenues

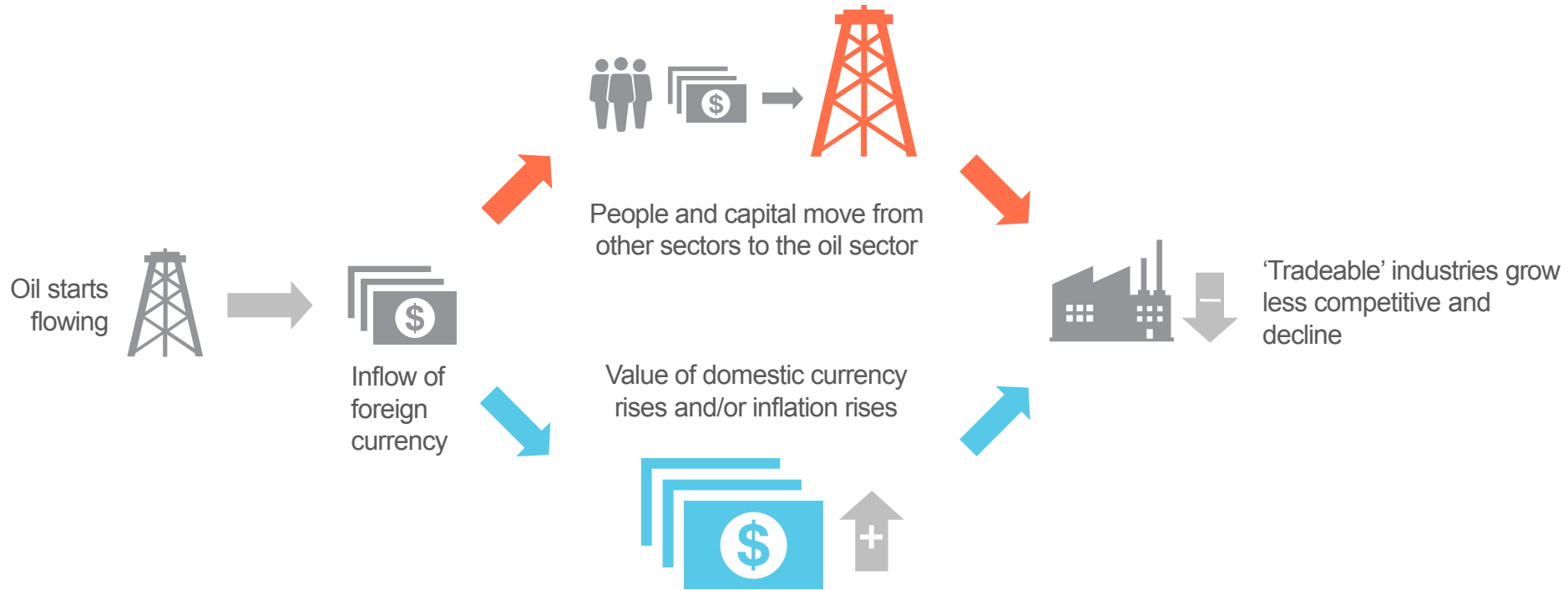
Dutch Disease and Absorptive Capacity

Volatility

Fiscal Sustainability

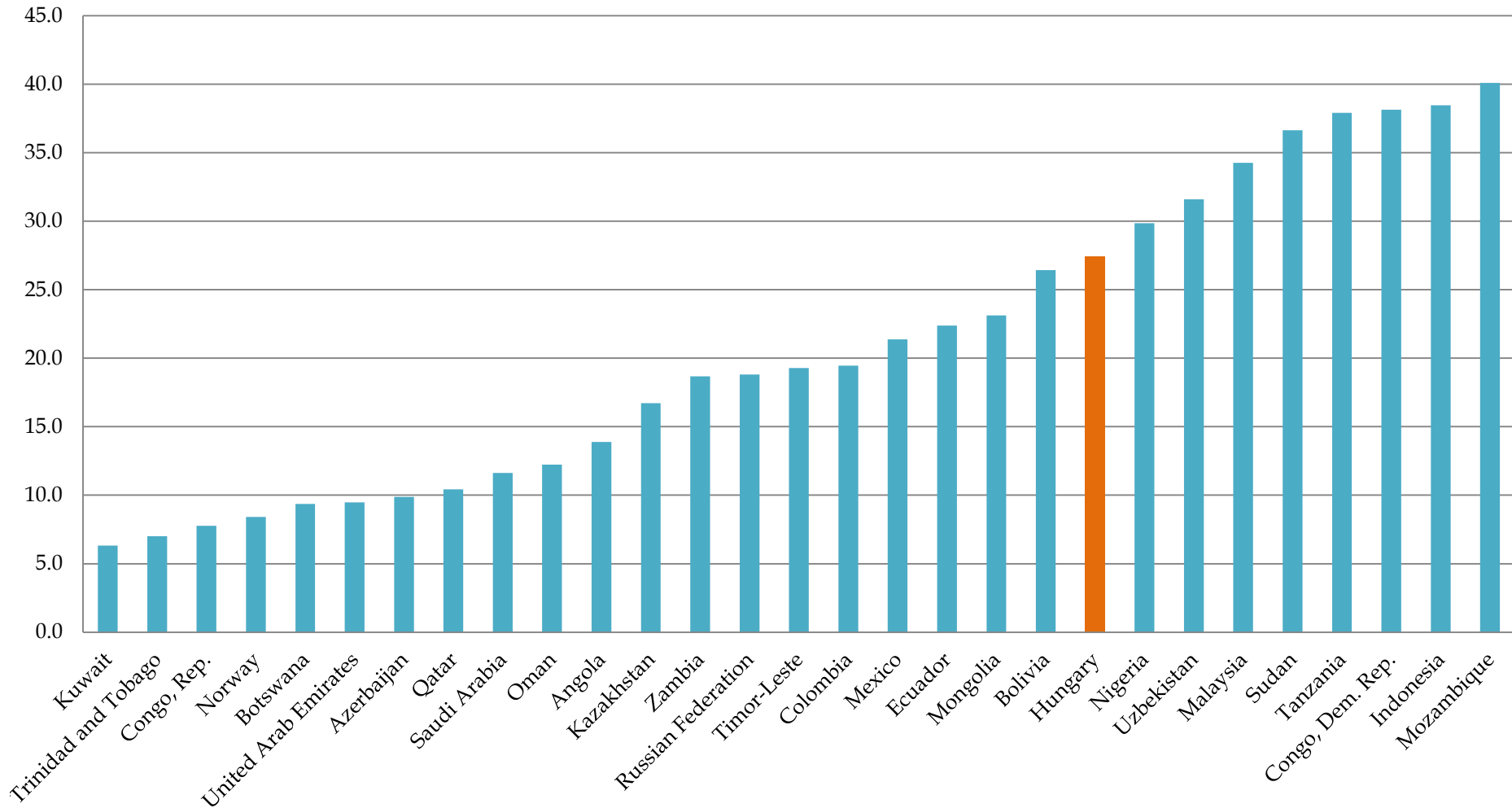
Fiscal rules

Dutch disease

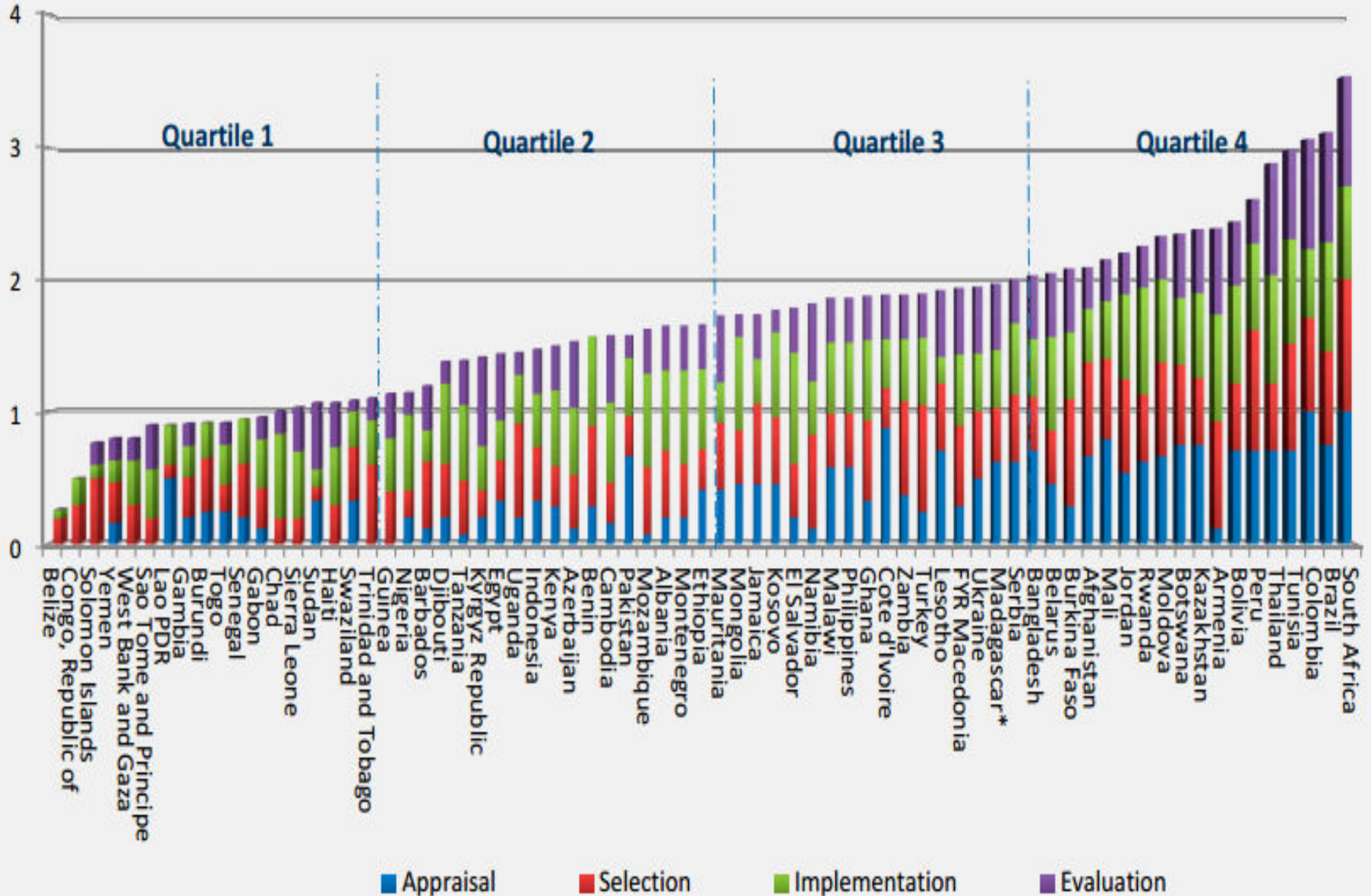


Evidence of Dutch disease?

Manufacturing and agriculture (value added as % of GDP) in resource-dependent countries



PIMI Index – Indicator of government absorptive capacity



Poor absorptive capacity / 'parking' problem

Country	Government Effectiveness	Regulatory Quality	Voice and Accountability
Algeria	29 th	11 th	18 th
Egypt	32 nd	41 st	16 th
Iraq	10 th	15 th	13 th
Jordan	57 th	57 th	25 th
Libya	5 th	5 th	6 th
Saudi Arabia	41 st	53 rd	3 rd
Tunisia	57 th	46 th	36 th
United Arab Emirates	78 th	63 rd	20 th

Policy options to address DD and absorptive capacity constraints

- Fiscal sterilization
- Monetary sterilization
- Develop absorptive capacity
 - Build-up government's administrative capacity
 - Address bottlenecks in the economy
 - Invest in education and training
 - Import skills

Topics

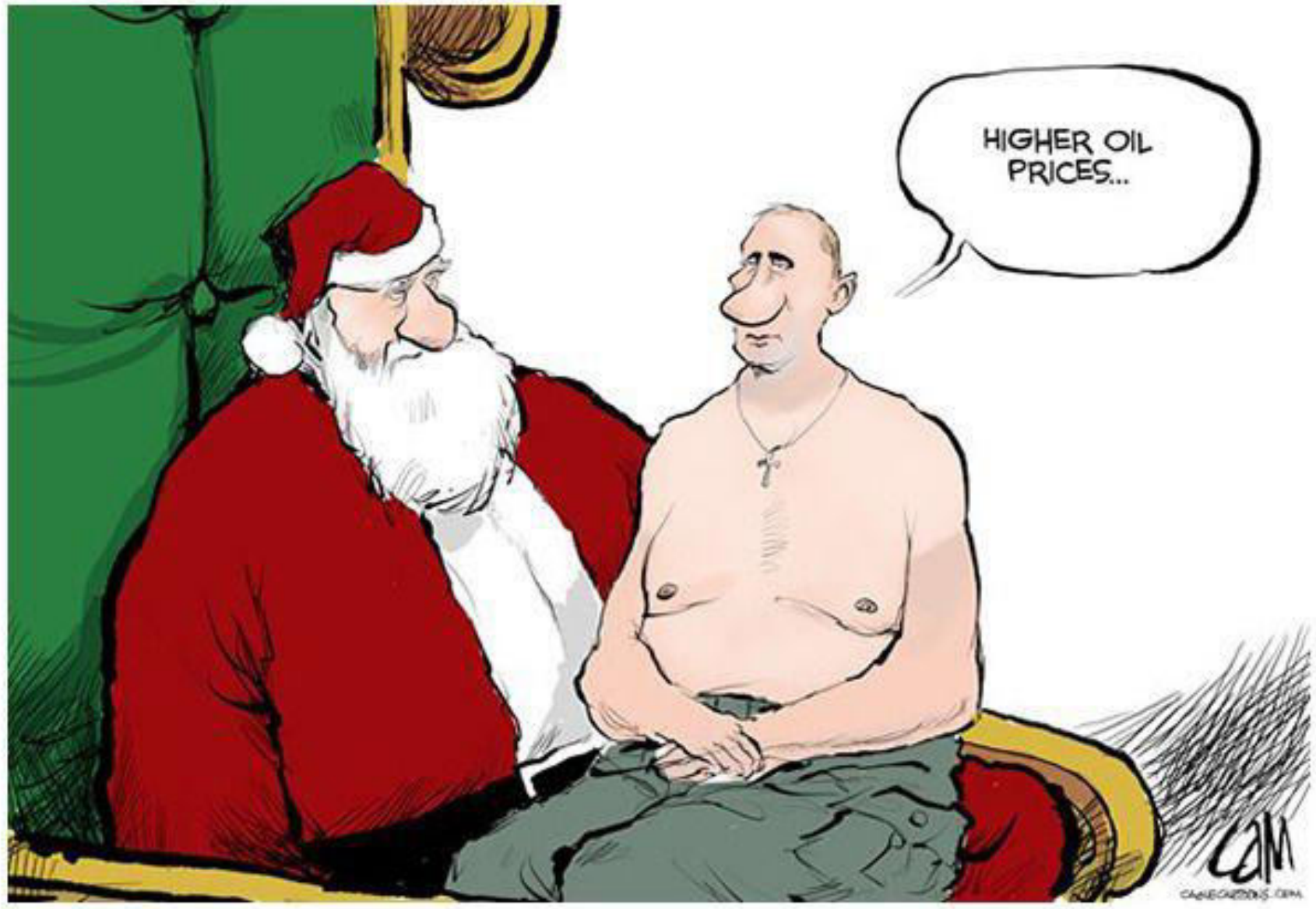
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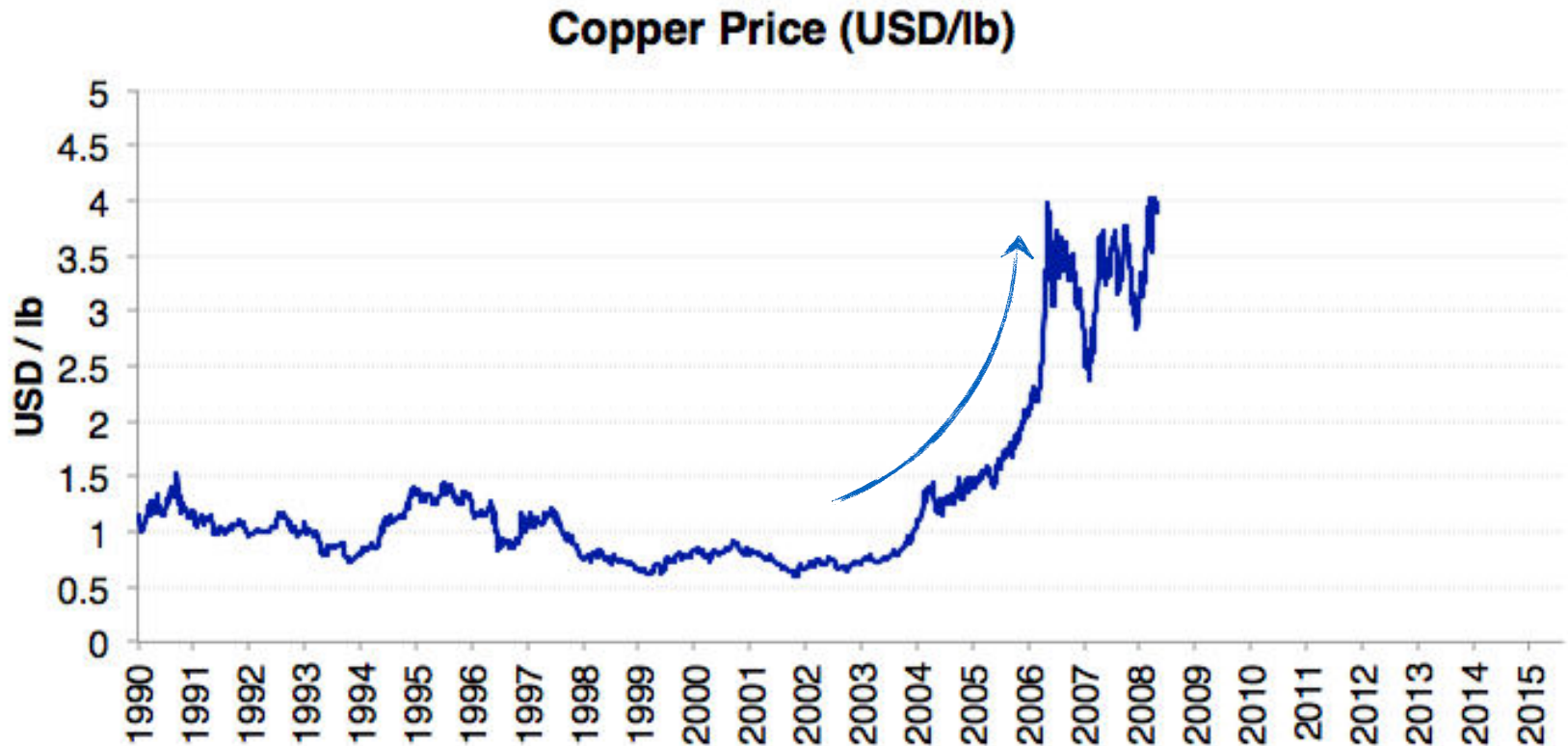


HIGHER OIL PRICES...

CAM
CAMCARTOONS.COM

Copper revenue volatility

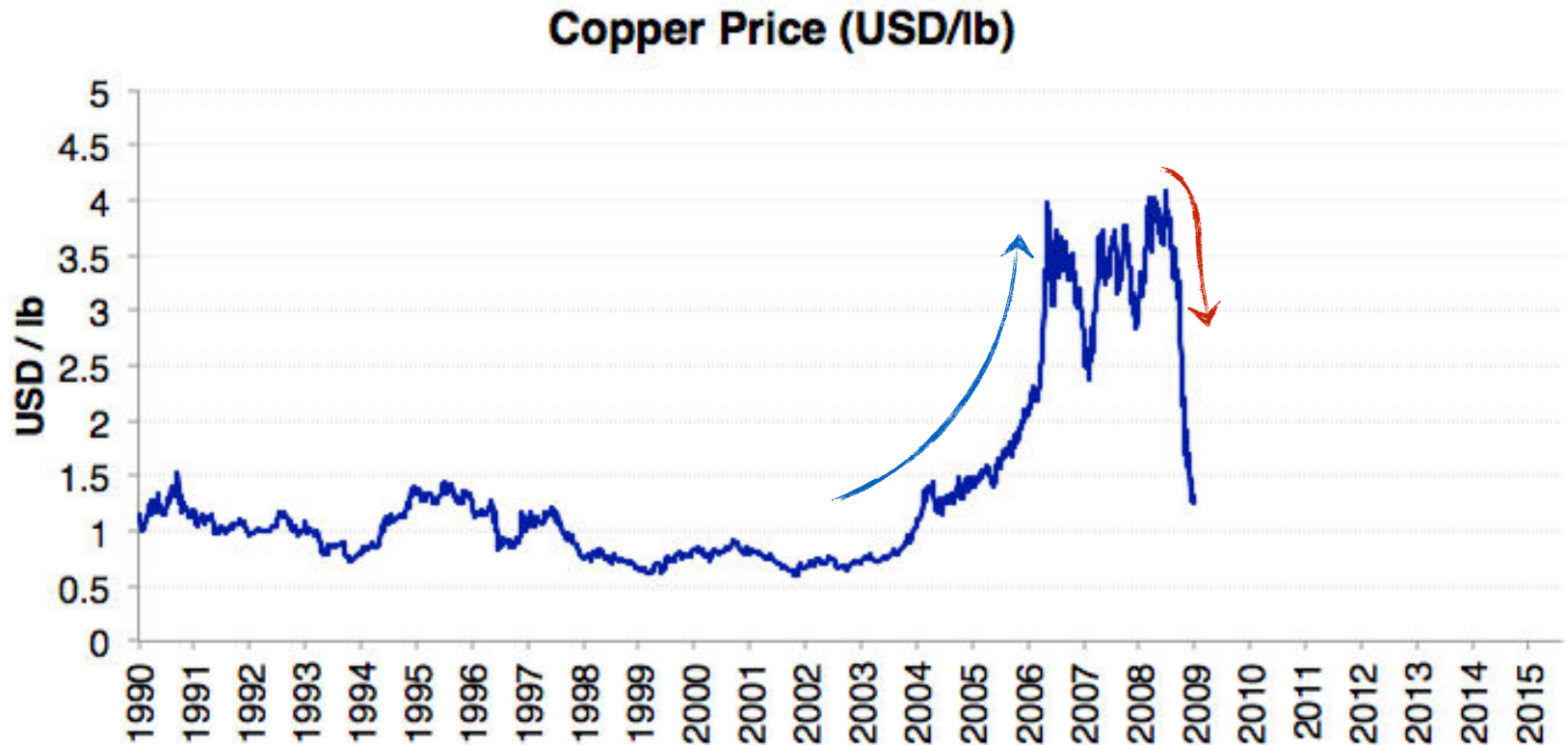
1) In 2004 we saw a rally that quickly turned into a roller-coaster



Source: Bloomberg

Copper revenue volatility

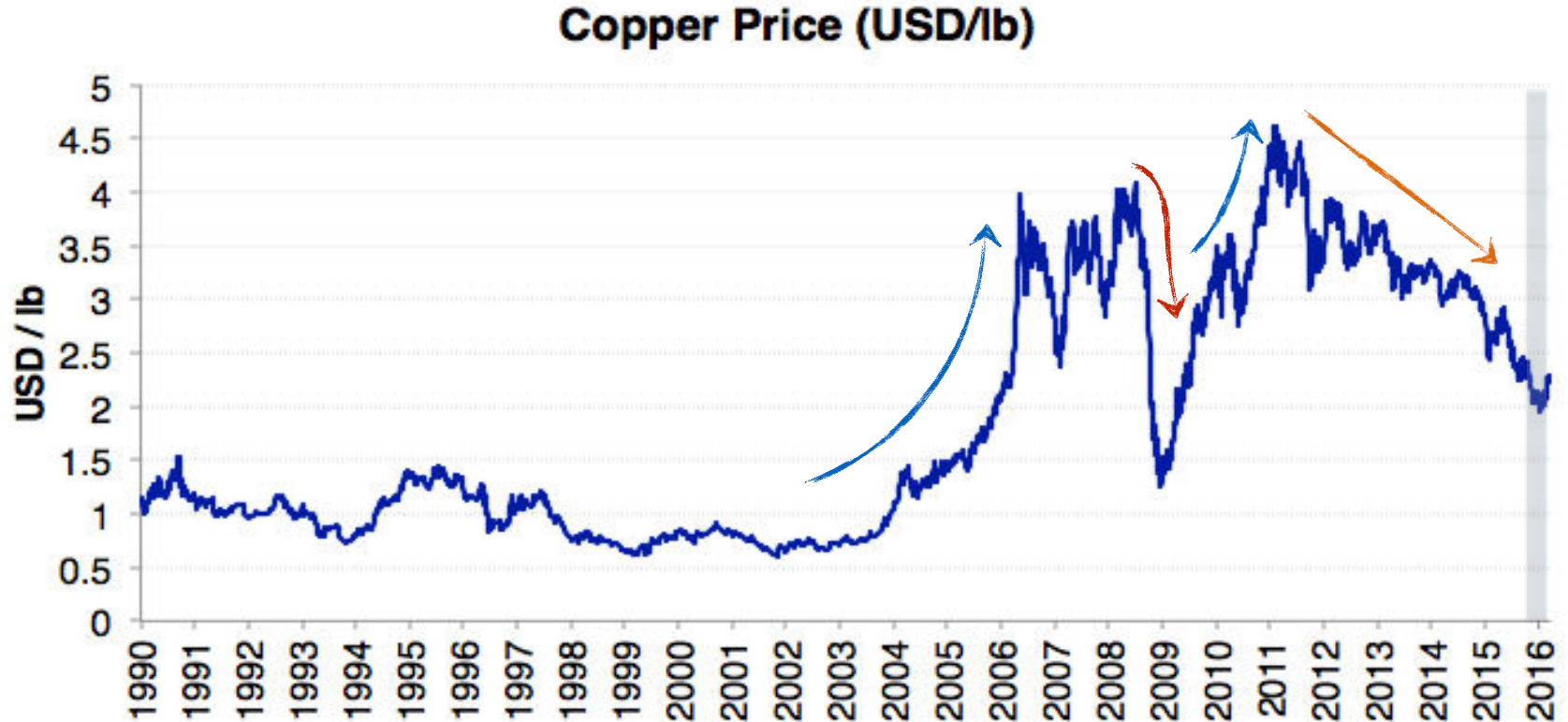
2) After the 2008 crisis the copper price had its biggest drawdown



Source: Bloomberg

Copper revenue volatility

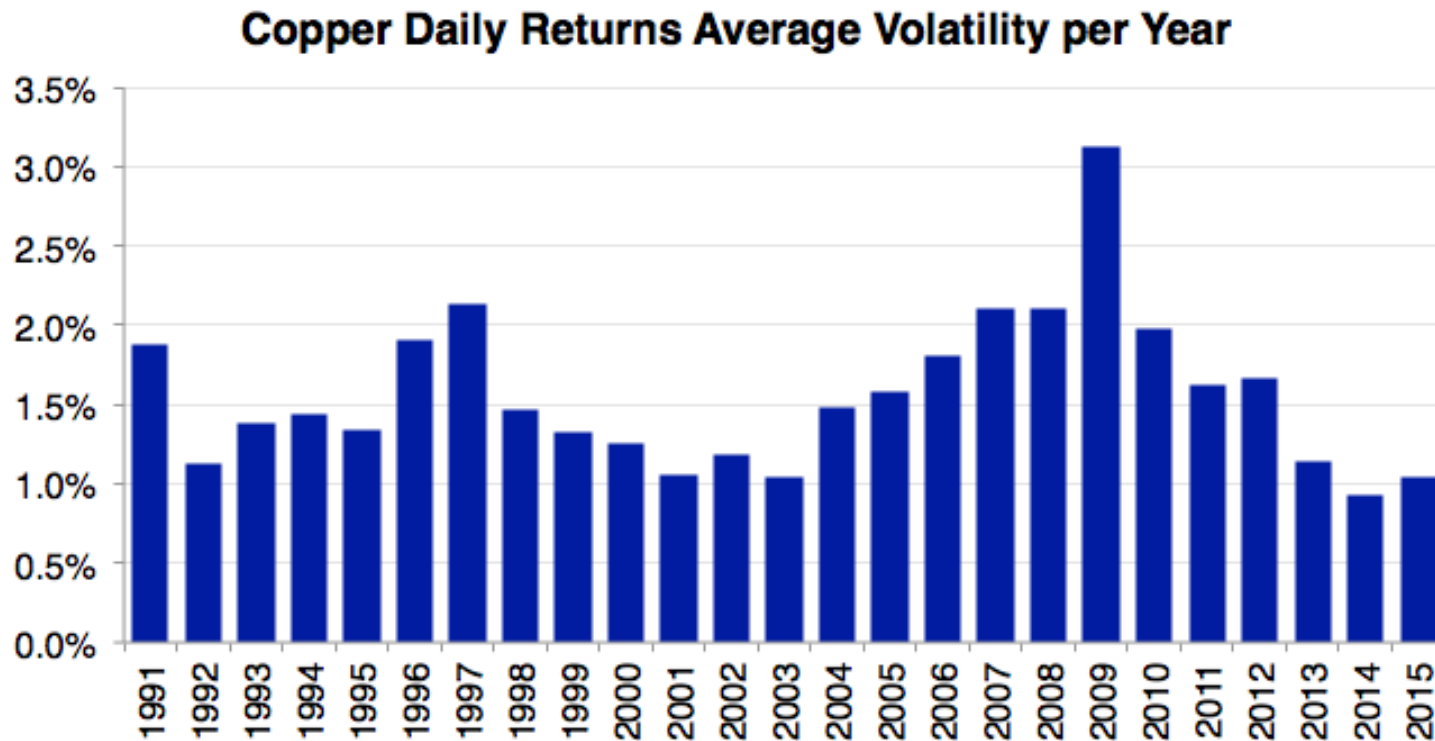
3) The 2009 rebound took the price to higher highs, but the trend didn't last for long.



Source: Bloomberg

Copper revenue volatility

4) These structural changes impact not only the price, but the volatility of returns



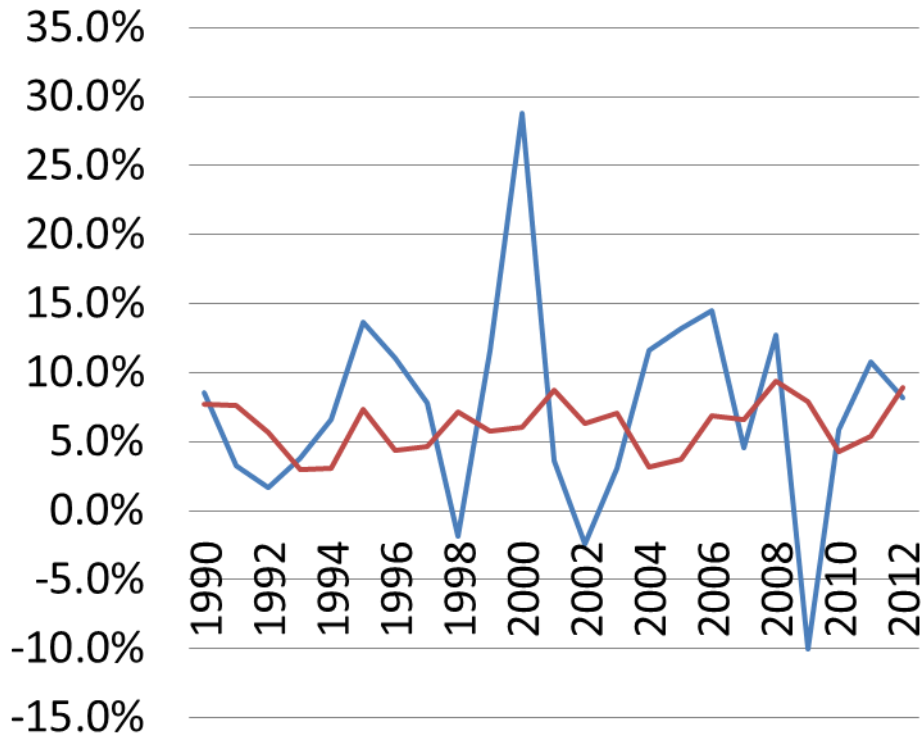
Source: Bloomberg

Choices for managing a shortfall

- Cut spending
- Increase taxes
- Borrow (foreign or domestic?)
- Ask for IFI or bilateral aid
- Draw down on government savings

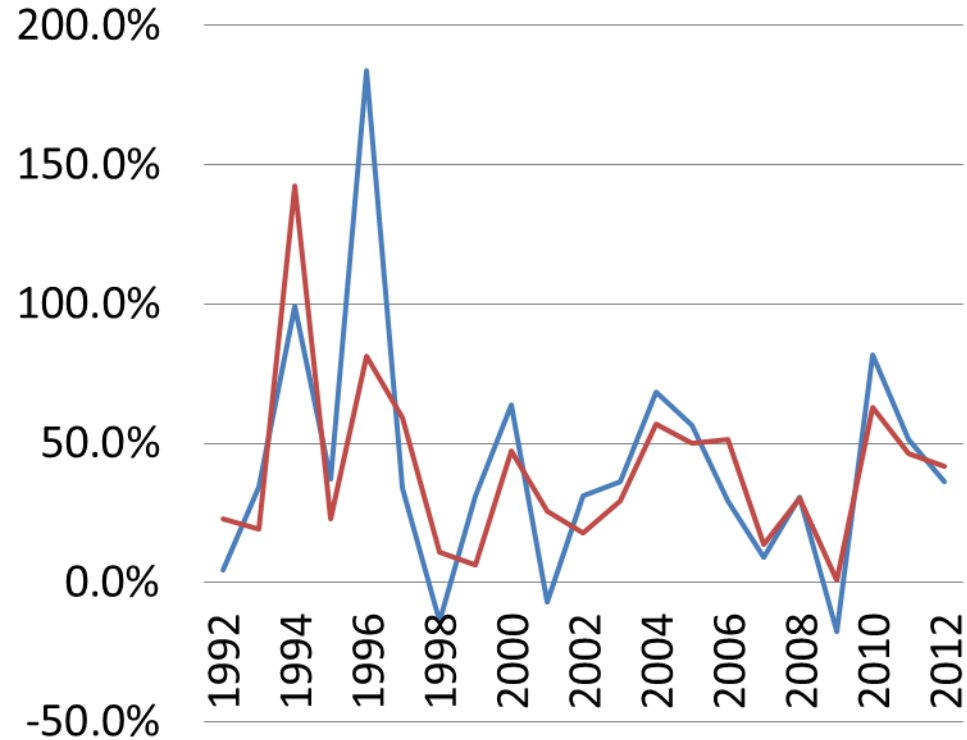
Volatility

Norway



- Government revenue growth (kroners)
- Government expenditure growth (kroners)

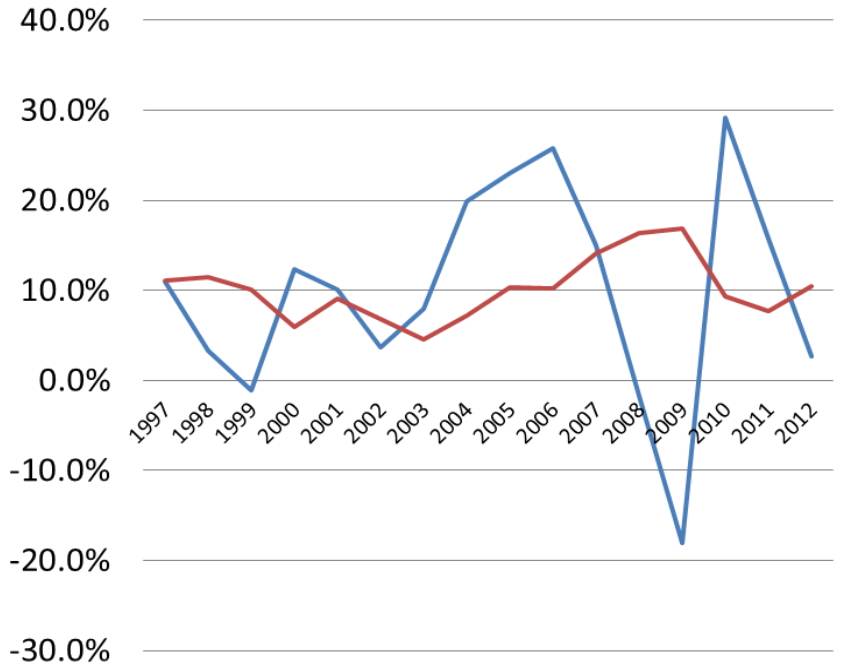
Venezuela



- Government revenue growth (bolivares)
- Government expenditure growth (bolivares)

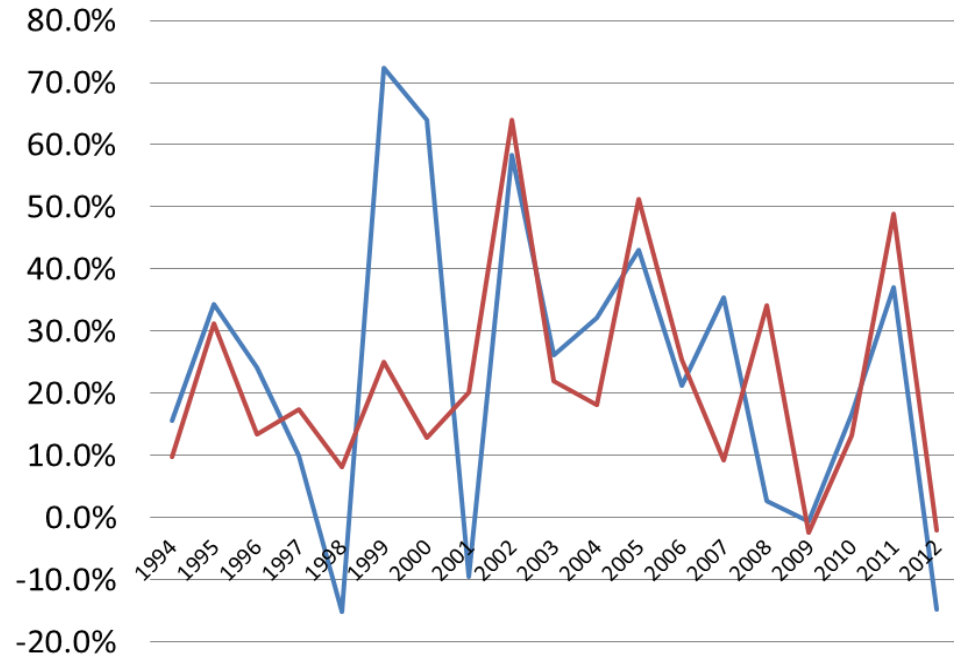
Volatility

Chile



- Government revenue growth (pesos)
- Government expenditure growth (pesos)

Iran



- Government revenue growth (rials)
- Government expenditure growth (rials)

Consequences of volatility (upside)



VS



Consequences of volatility (downside)

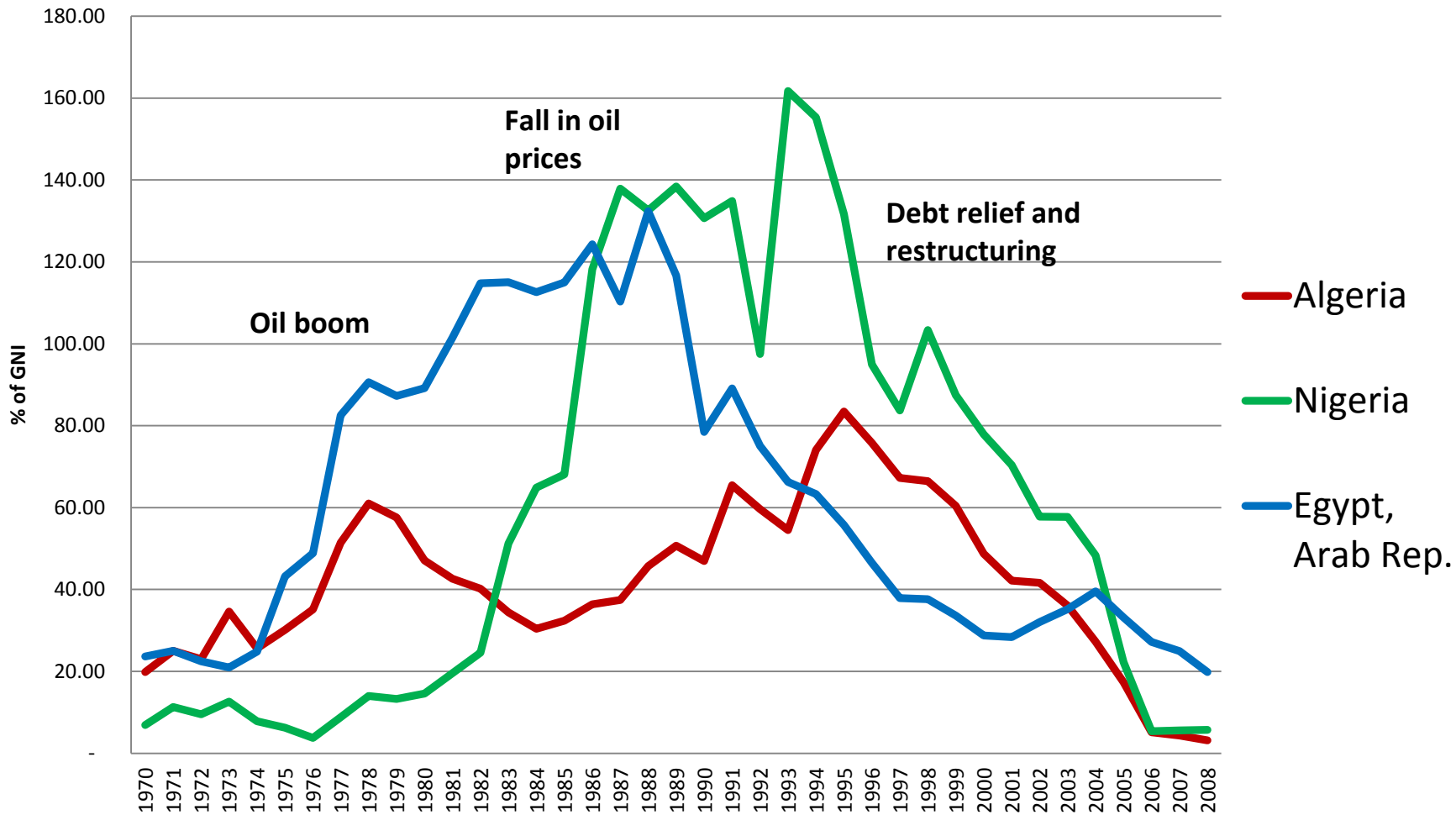


VS



Ratcheting effect of volatility: Over-borrowing (public sector)

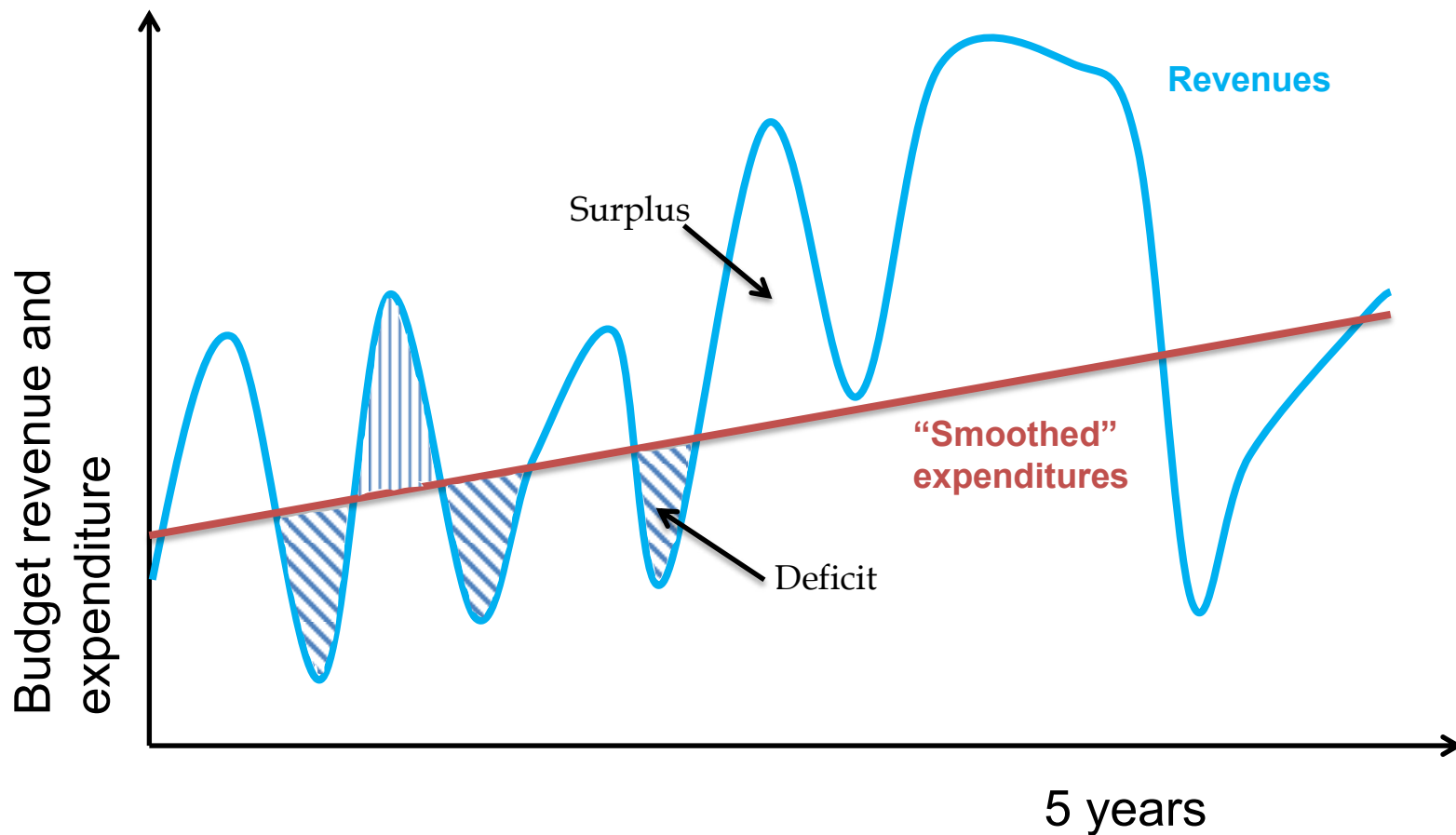
External Debt



Policy options to manage expenditure volatility / temporary shocks

- Non-volatile tax instruments
- Delinking revenues from expenditures
- Oil price hedging

Fiscal policy to Address Volatility



Topics

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Fiscal Sustainability

Fiscal rules

DO
SOMETHING,
YOU BUNCH
OF MANIACS!

WELL! IT'S
EASY TO JUST
CRITICIZE,
YOUNG
LADY...

...AND
I SUPPOSE
YOU'VE GOT AN
ALTERNATIVE ALL
WORKED OUT,
HAVE YOU?

HYSTERICAL
ECO-FANATICS!
ALWAYS TELLING
PEOPLE HOW
TO LIVE...

GET
YOURSELF
A PROPER
JOB!

\$\$ECONOMIC GROWTH



Case Study The Island of Nauru

The Risk of Boom-Bust Economies



Mining Boom

Second highest GDP per capita (\$40,000 USD) in the world

Mining Bust

90% unemployment
GDP per capita \$2,000 USD

1980

2000



\$40 000
GDP per capita



\$2000

Policy options to promote fiscal sustainability and intergenerational equity

- Invest for economic growth and diversification
- Expand the tax base
- Save in financial assets for future generations
- Pay down public debt

Topics

Unique Characteristics of Resource Revenues

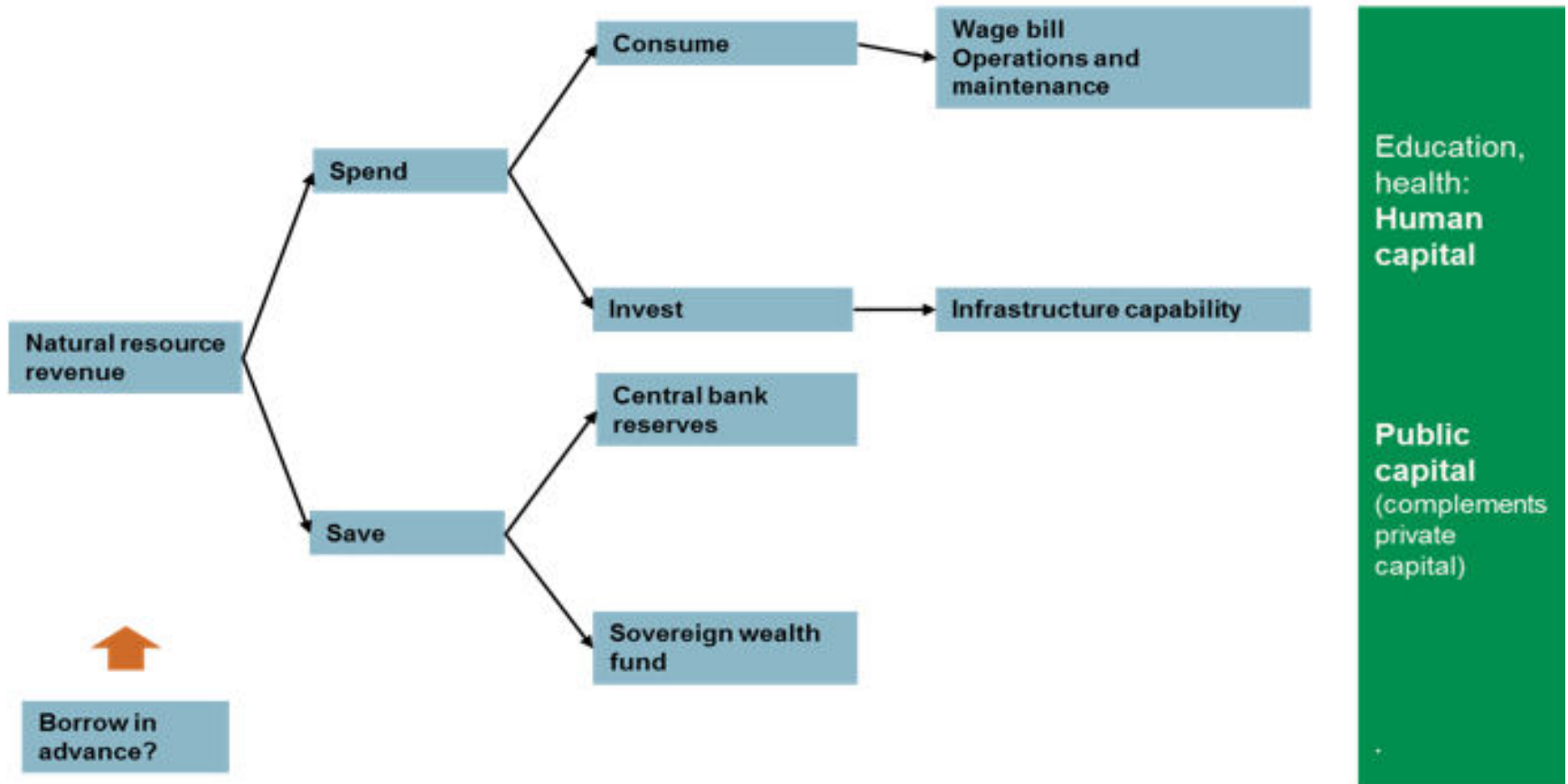
Dutch Disease and Absorptive Capacity

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Fiscal Sustainability

Fiscal rules

Saving vs. spending



Source: AfDB and BMGF

What is a fiscal rule?

Definition: A permanent quantitative constraint on government finances

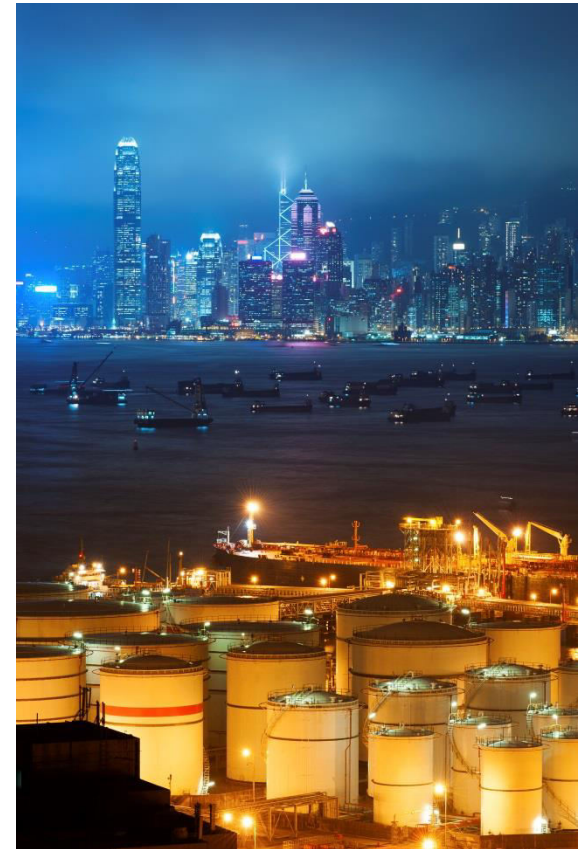
How do they work?

- Constrain spending in good years so the government can spend more in bad years
- Stronger monitoring of government budgeting since there is a benchmark to measure against



The Evidence: Why enact a fiscal rule?

- Well designed rules are associated with more macroeconomic stability, smaller deficits, and less 'pro-cyclicality' → more investor confidence, better public investment planning, fewer debt crises and higher economic growth



Fiscal rules

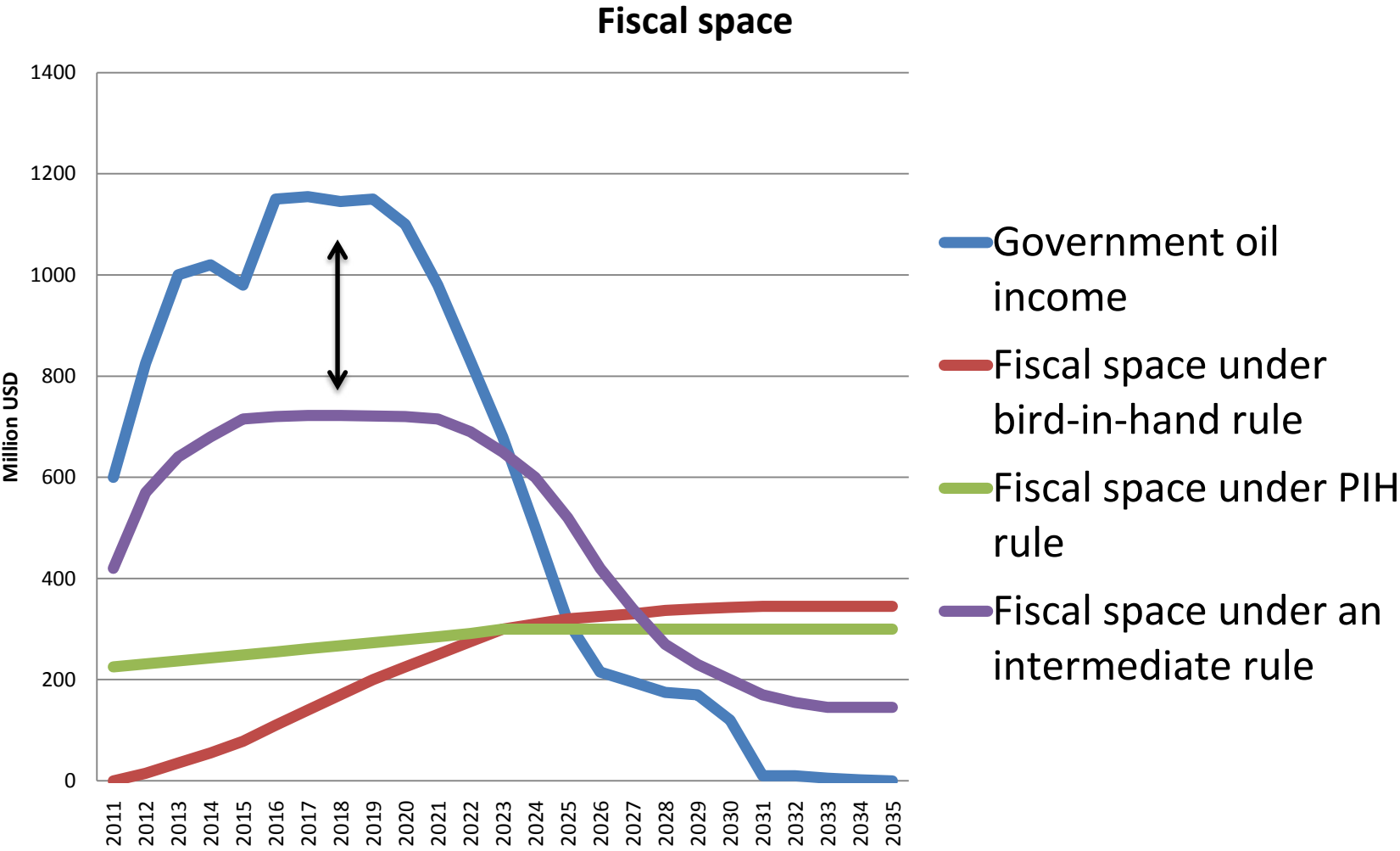
- Balanced-budget rules
- Expenditure rules
- Debt rules
- Revenue rules

Mongolia's fiscal rules

- **Structural balanced budget rule:** Structural deficit cannot exceed 2% of GDP
- **Revenue rule:** When mineral revenues exceed 3% of GDP, excess is saved in a stabilization fund; shortfall triggers transfer from stabilization fund
- **Debt ceiling:** Public debt cannot exceed 40% of GDP
- **Expenditure rule:** Expenditure growth limited to non-mineral GDP growth



Developing a fiscal rule: How much to save and spend?



Sources: IMF; own projections

Earmarking: Why bother?

Petroleum Revenues

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graph TD; A[Petroleum Revenues] --> B[Education]; A --> C[Municipal roads]; A --> D[Science and technology];
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Education



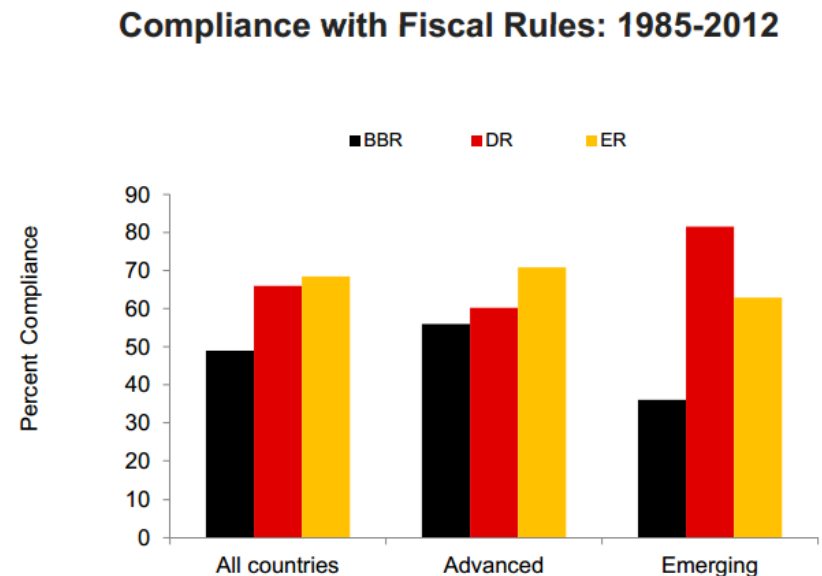
Municipal roads



Science and technology

How often do governments comply with their own fiscal rules?

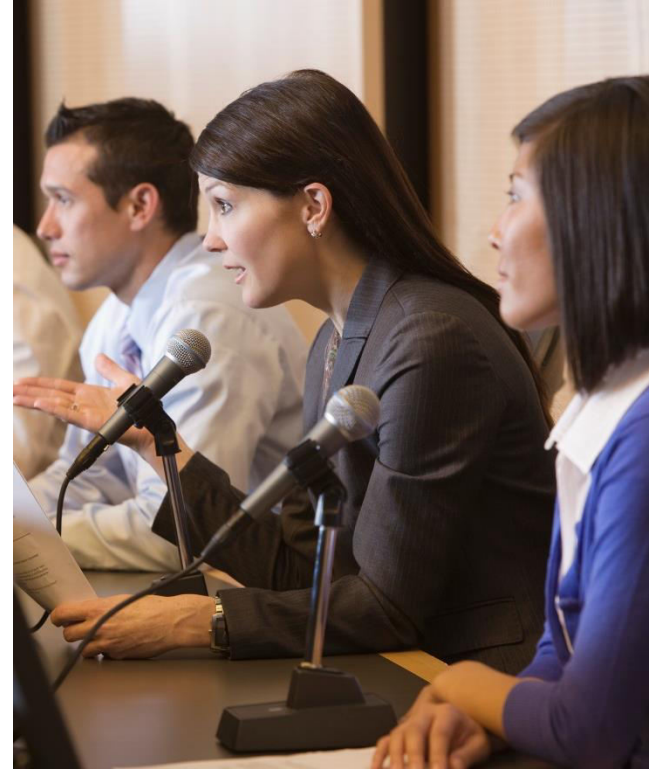
- Countries that generally comply: Chile, Norway, Peru
- Countries that sometimes comply: EU countries complied with Maastricht criteria half the time from 1993-2013, Ecuador, Japan, Timor-Leste
- Expenditure, revenue and debt rules are easier to enforce than balanced-budget rules
- Expenditure rules and revenue rules are counter-cyclical and easy to enforce, so applicable to a resource-rich emerging economy



Source: FAD Fiscal Rules Dataset and IMF staff estimates.

What mechanisms promote compliance?

- Robust organizational structure
 - Economic development ministry or agency
 - Compliance or audit within the bureaucracy
- External oversight
- Consensus building



Consensus -building around fiscal rules

Examples



The debate around saving vs. spending

Australian Broadcasting Corporation
report on Timor-Leste

<http://www.abc.net.au/4corners/stories/2012/09/27/3599022.htm>

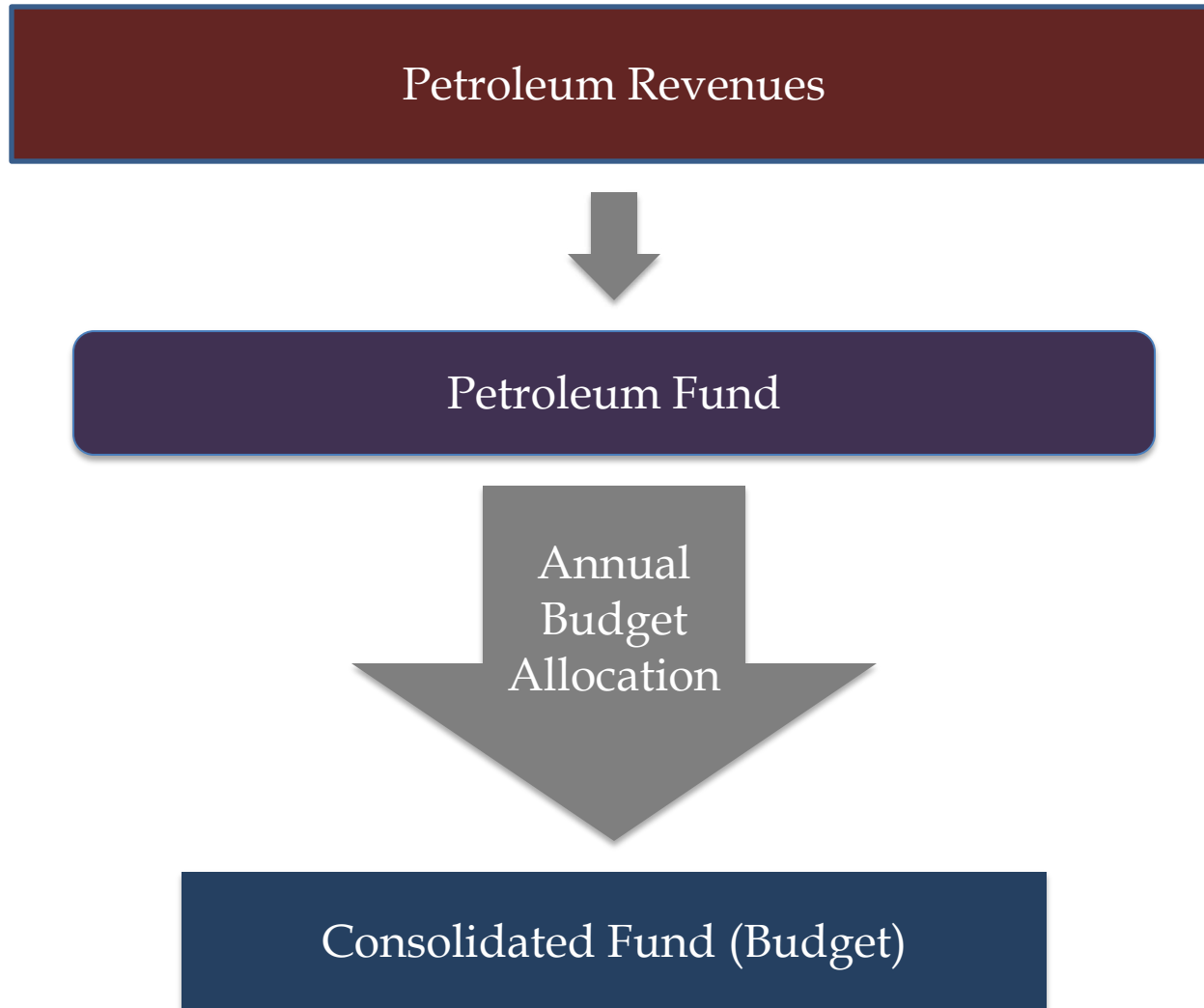
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Managing fiscal surpluses and deficits through debt

- Default mechanism
- Depends on financial integration
- Can be risky
- Allows front-loading... but can lead to unsustainable fiscal policy



Managing fiscal surpluses and deficits with sovereign wealth funds



Thank You!

Contact: abauer@resourcegovernance.org