Wealth Accounting Macroeconomic Indicators

WORLD BANK GROUP

Main implications on the macro and fiscal fronts, and policy applications

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Why Wealth Accounting?

- Focus on Sustainable Growth
  - Is sustainability important?
  - If yes, do conventional measures such as the SNA measure sustainable growth?
  - If no, what adjustments can we make?
- Policy implications
  - How should renewable and non-renewable natural resources be managed for sustainability?

Do we have a measure of sustainability?

Let's look. Who can find it?

Table 1. Selected Economic and Financial Indicators, 2012-19

	2012	2013	2014	2015	2016	2017	2018	2019
					Projections			
National income and prices (y-o-y growth)								
GDP at constant prices	6.0	5.7	6.4	6.0	7.4	8.4	5.2	8.3
GDP excluding extractive industries at constant prices	7.3	6.4	7.1	6.6	6.2	6.0	6.0	6.0
Iron ore production (tons)	11.2	12.5	13.5	14.6	19.0	26.7	26.7	36.2
GDP deflator	-5.8	0.1	-4.6	1.2	4.5	5.0	4.3	5.2
GDP excluding extractive industries deflator	2.1	2.8	2.2	4.4	4.3	4.6	4.9	4.7
Consumer price index (period average)	4.9	4.1	3.5	4.6	4.6	4.9	5.1	5.1
Consumer price index (end of period)	3.4	4.5	4.7	4.4	4.8	5.0	5.2	5.2
External sector								
Value growth of exports of goods, f.o.b.	-4.9	0.4	-8.3	-6.1	14.0	20.4	0.8	20.9
Value growth of imports of goods, f.o.b.	28.5	-4.0	-15.5	15.8	23.4	25.9	-14.8	-0.3
Terms of trade	-14.6	34.2	-10.4	-4.9	-3.2	0.5	0.4	0.9
Current account balance (in percent of GDP)	-26.1	-24.8	-18.5	-25.8	-35.4	-40.2	-26.3	-15.4
Gross official reserves 1/								
In millions of U.S. dollars, end of period	961.9	996.4	963.1	1005.3	1061.4	1107.3	1173.9	1189.8
In months of following year's imports excluding extractive industries	6.8	6.9	6.6	6.3	6.4	6.5	6.6	6.6
PPG external debt (percent of GDP) 2/	73.5	69.2	73.1	61.7	62.4	61.1	61.1	58.0
Investment and savings								
Gross investment (percentage of GDP)	37.3	37.4	29.2	40.6	44.4	35.8	22.0	18.4
Gross savings (percentage of GDP)	6.2	6.7	10.2	4.3	6.7	-3.5	1.0	12.7
Central government operations								
Nonextractive revenue and grants	29.2	25.4	23.7	23.8	23.7	22.6	24.8	24.9
Nonextractive revenue	22.8	24.4	22.8	23.0	23.0	22.0	22.5	20.6
Expenditure and net lending	40.7	37.8	32.7	30.6	29.3	30.6	29.3	28.4
Basic non-oil balance; previous program definition (percent of non-oil GDP) 3/	0.5	1.0	1.0	0.8	1.7	2.9	3.3	3.9
Overall balance excluding grants	-3.0	-2.2	-2.1	-2.6	-1.7	-0.1	0.7	1.9
Overall balance excluding grants (in percent of GDP)	-2.2	-1.7	-1.7	-2.2	-1.4	-0.1	0.6	1.6
Public sector debt (percent of GDP) 2/	79.4	73.7	76.5	65.5	66.2	64.7	65.0	61.7

Let's look at our conventional measures

- GROSS domestic product (GDP)
  - Measures the output (value added) of an economy
  - Doesn't reflect consumption of assets
- NET domestic product (NDP)
  - Adjustment of GDP to reflection consumption of produced capital
  - But not widely used, and often not available
  - Doesn't reflect all consumption of assets, or other "damage", e.g. environmental damage
- SUSTAINABILITY needs a broader measurement concept

A quick reflection:

GDP tells you nothing about sustainability. [...] No one would look just at a firm's revenues to assess how well it was doing. Far more relevant is the balance sheet, which shows assets and liability. That is also true for a country.

(Joseph Stiglitz, « Good Numbers Gone Bad », October 2006)

Main research questions:

1) What is the estimate existing stock of capital in the country, including produced, intangible, and both renewable and nonrenewable natural capital?

2) What is the current rate of adjusted net national savings in our country, and what are its implications for the sustainability of the country's stock of wealth?

3) What would sustainable growth require in terms of the management of both renewable and nonrenewable resources?

What is wealth?

GDP growth is not necessarily correlated to wealth creation

i. Wealth is a stock, while GDP is a flow concept

ii. There are several cases of high GDP growth and limited (or even negative) wealth creation

iii. Change in GDP tells us if growth is occurring, changes in wealth tell us if growth is sustainable in the long-term

iv. Small number of countries compile wealth accounts. Even fewer include natural capital

Measuring Sustainability

- An ADJUSTED measure of macroeconomic output, taking into account depletion of physical, environmental and natural capital
- A measure of ASSETS or WEALTH, tracked over time
  - Is the wealth trend positive or negative?
  - What is happening in real terms, as a percentage of GDP, and per capita?

What is wealth?

Many definitions, from the most simple to the most complex, but intuitively clear:

"anything of value"

The annual production of the land and labor of the society".

(Adam Smith, The wealth of Nations)

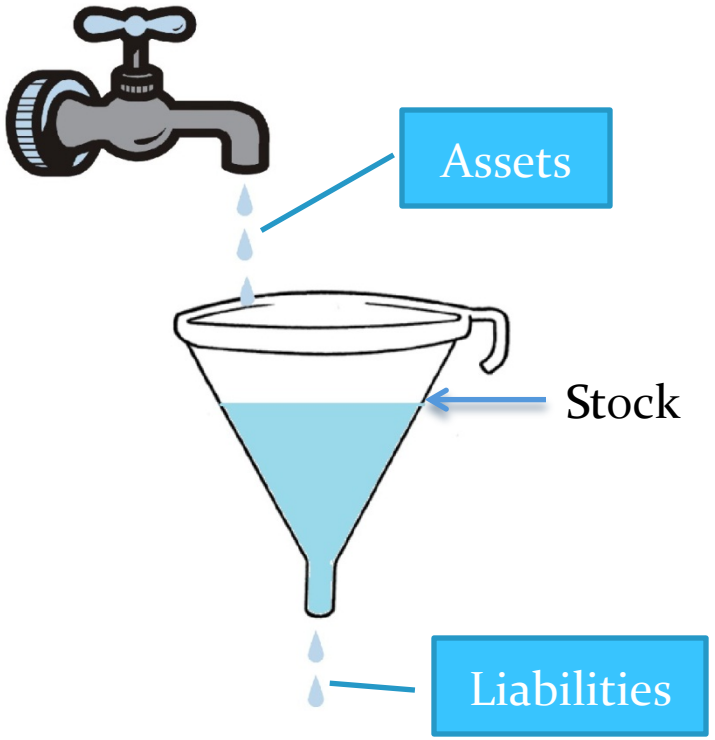
The accumulation of all assets owned, net of all liabilities owed, at a point in time.

What is wealth?

STOCK

The concept of wealth has at least two basic features:

1- Wealth is a stock

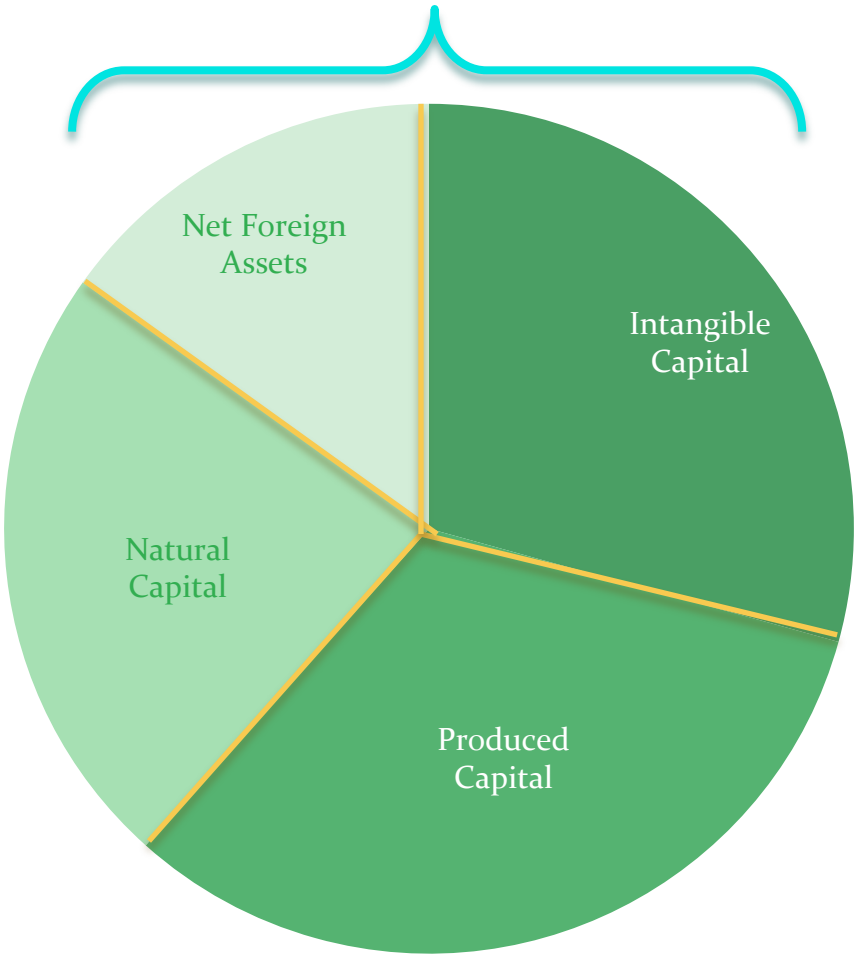


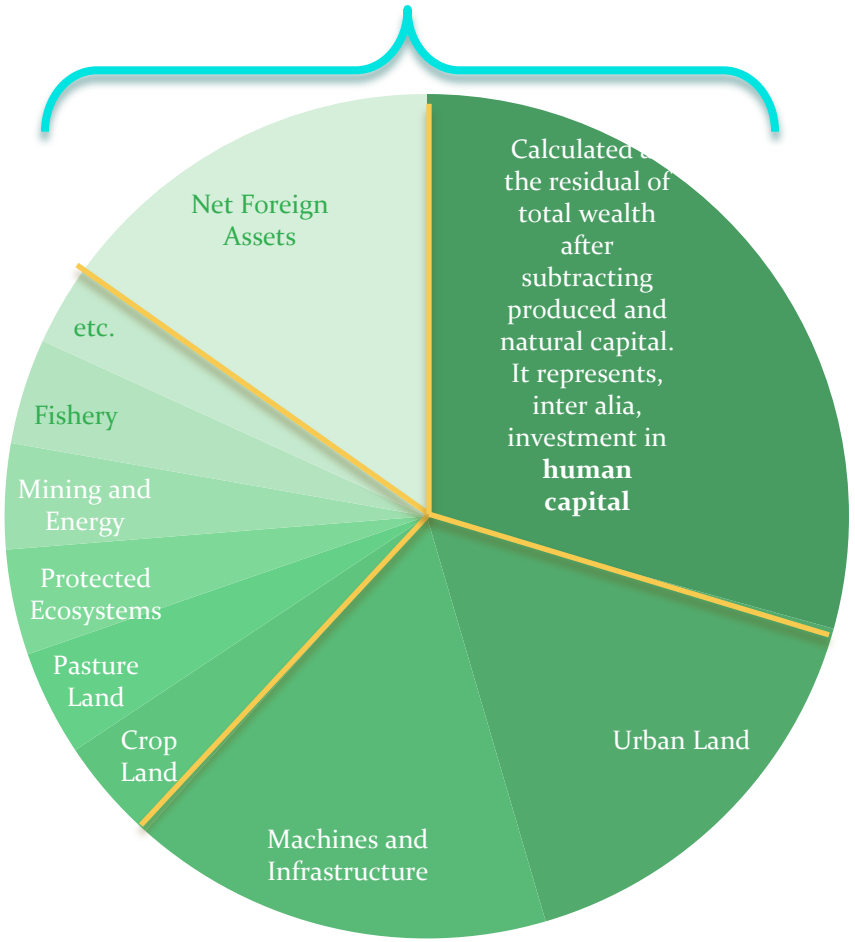
2- Wealth is composite – has many components

What is wealth?

STOCK

Comprehensive (or Inclusive) Wealth

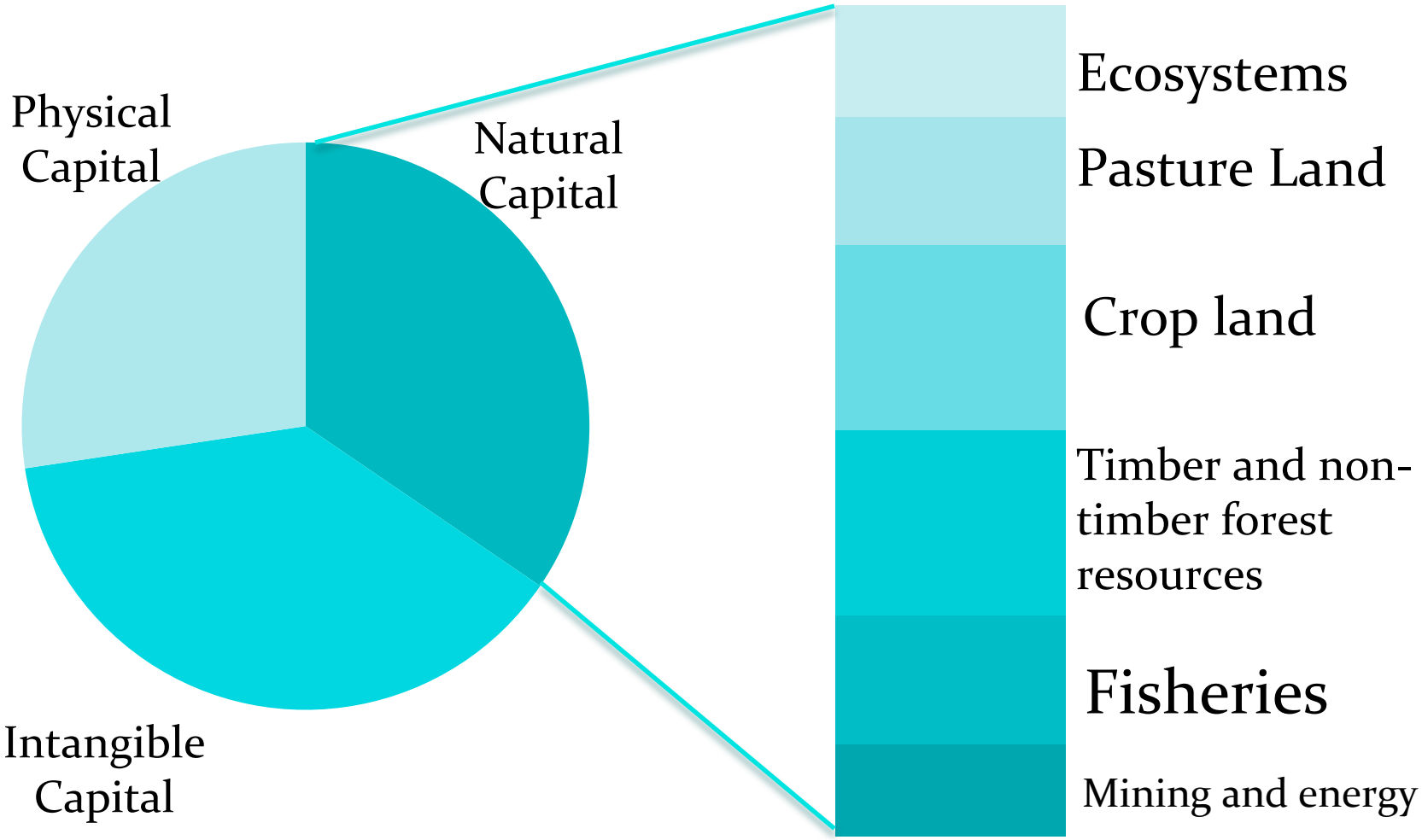




[1] *"Where is the Wealth of Nations" (2006), World Bank, pag 6*

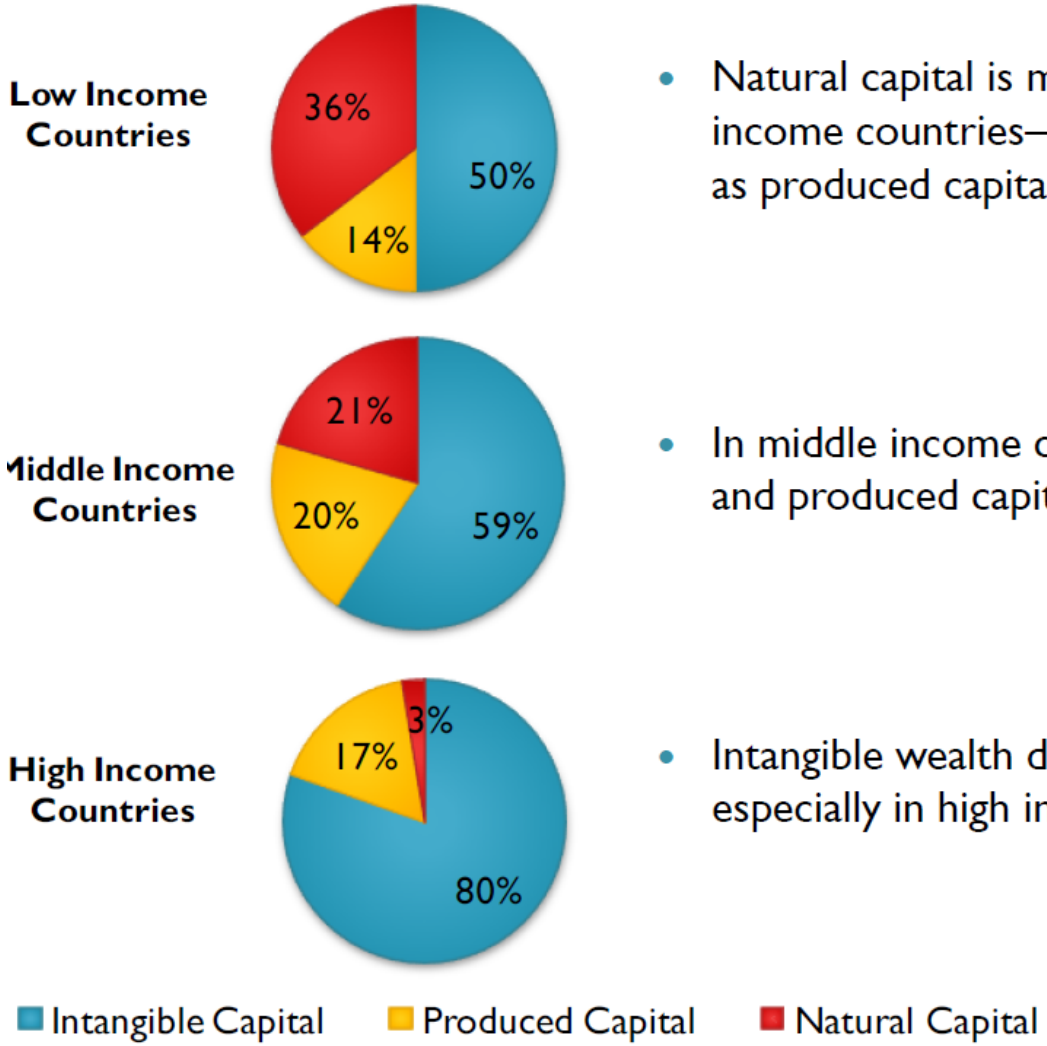
Comprehensive Wealth

STOCK



Anticipating some results: composition of total wealth, a global perspective

STOCK



- Natural capital is most important in low income countries—more than twice as large as produced capital
- In middle income countries natural capital and produced capital are roughly equal
- Intangible wealth dominates in all countries, especially in high income countries

From stock to flows: estimating the Adjusted Net Savings by calculating the depletion of wealth

All countries rely on System of National Accounts (GDP) for economic planning and assessment of performance, but some information is missing or invisible :

The components of Natural Capital (Wealth) that we calculate

- Depletion of natural capital – minerals, forests
- Use of materials and energy not fully represented
- Environmental degradation – air & water pollution, loss of soil productivity
- Ecosystem services – carbon storage, flood mitigation

A practical and meaningful management tool!

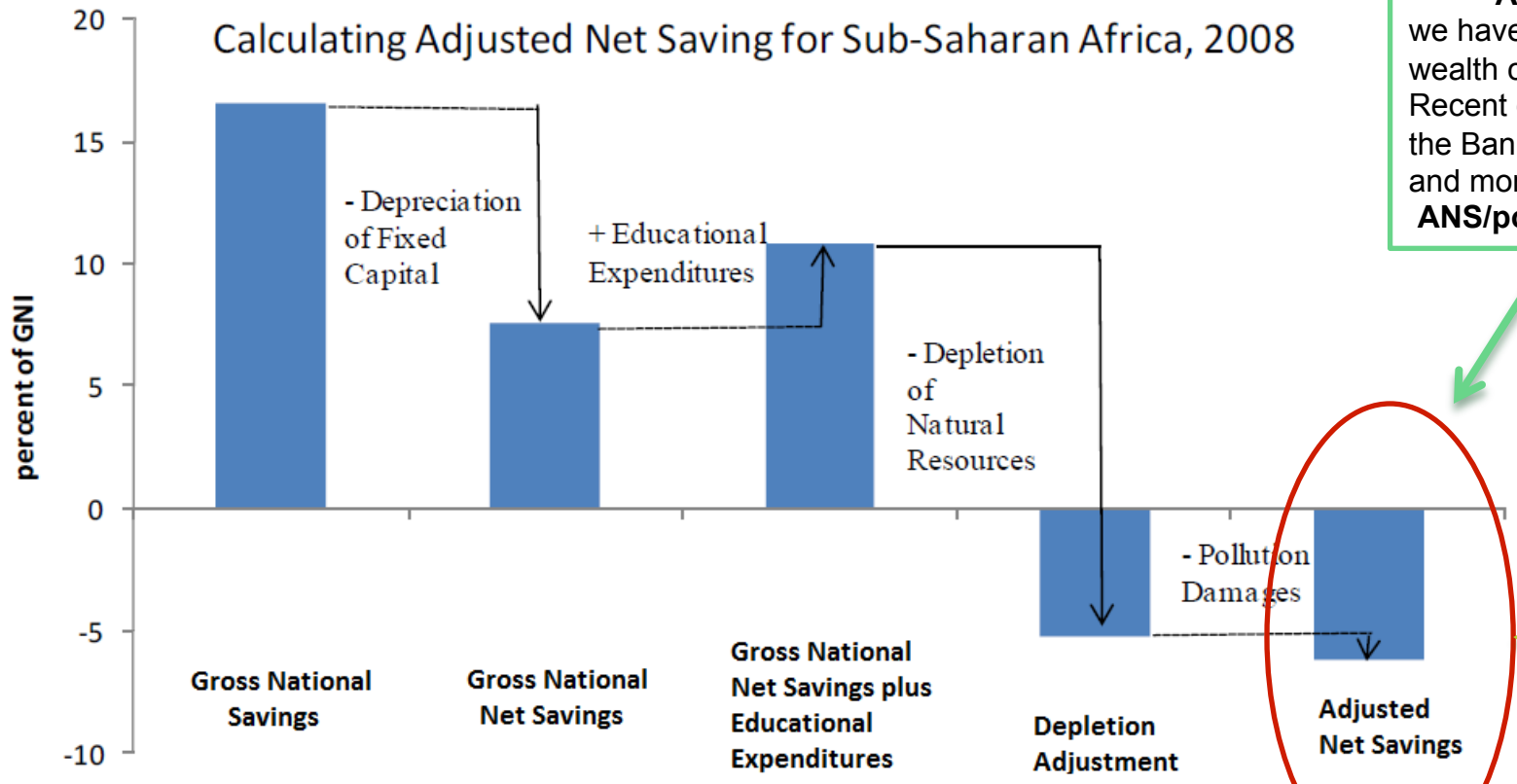
Natural Capital Accounting

- Provides crucial information to manage natural resources
- Builds this information as satellite accounts to the System of National Accounts to fill the information gap

ANS = NNS + Education Expenditure – Energy Depletion - Mineral Depletion – Forest Depletion – CO_2 Damages – Particulate Matter Damages

From stock to flow: looking at GDP, GNS and ANS

Graphically:



Only if
ANS > 0
we have actual wealth creation.
Recent discussion at the Bank looks more and more also at
ANS/population > 0

Wealth Accounting analysis – why?

A quick historical analysis

YESTERDAY

The System of National Accounts was embraced in 1950s because of the confluence of three elements:

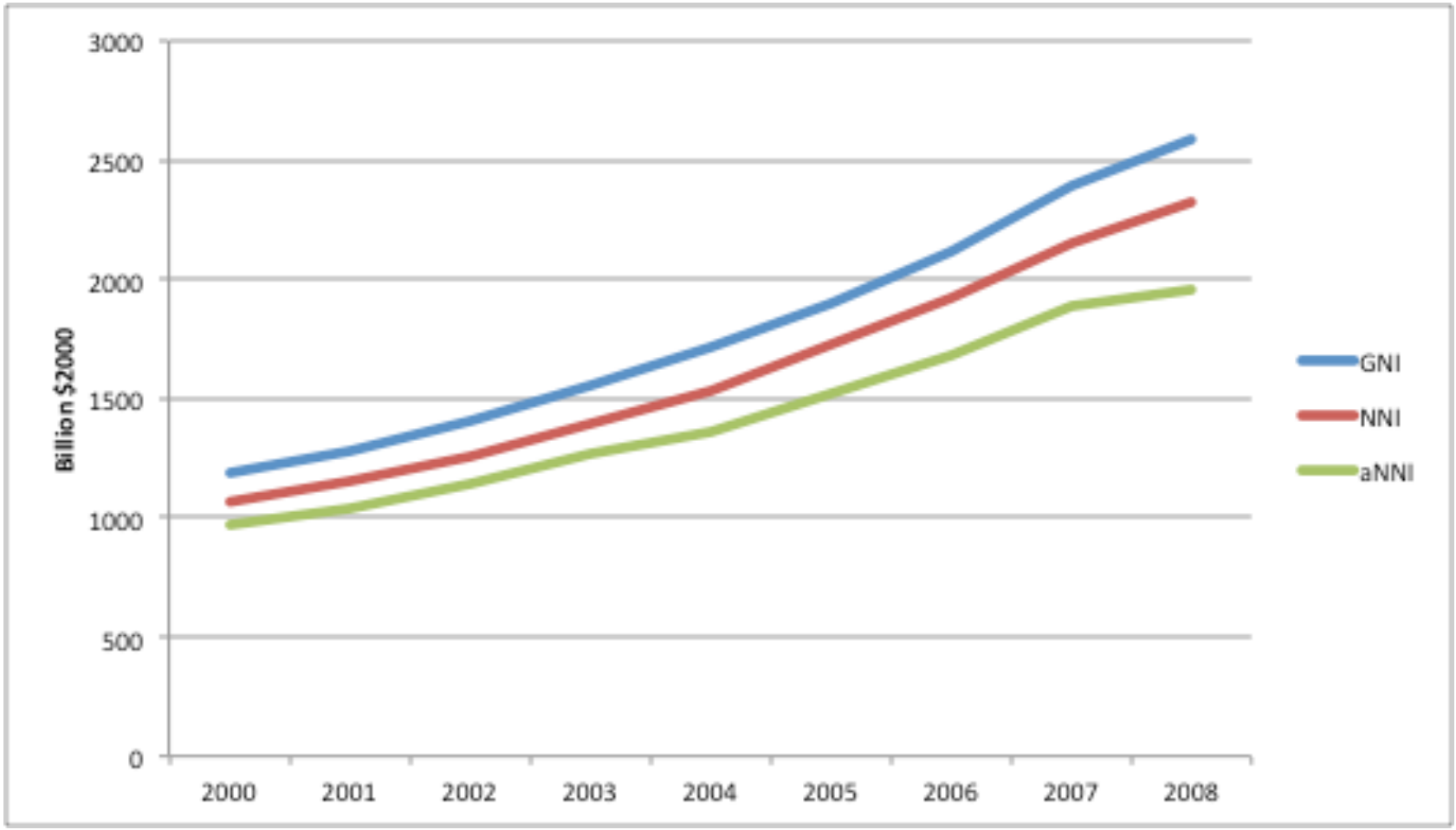
- A sound theory: Keynesian macroeconomics
- A clear methodology: the System of National Accounts (SNA) framework
- Willingness by policy-makers to pursue a policy goal: economic growth and full employment

TODAY

In order to successfully develop an Environmental Accounting practice we will need the same:

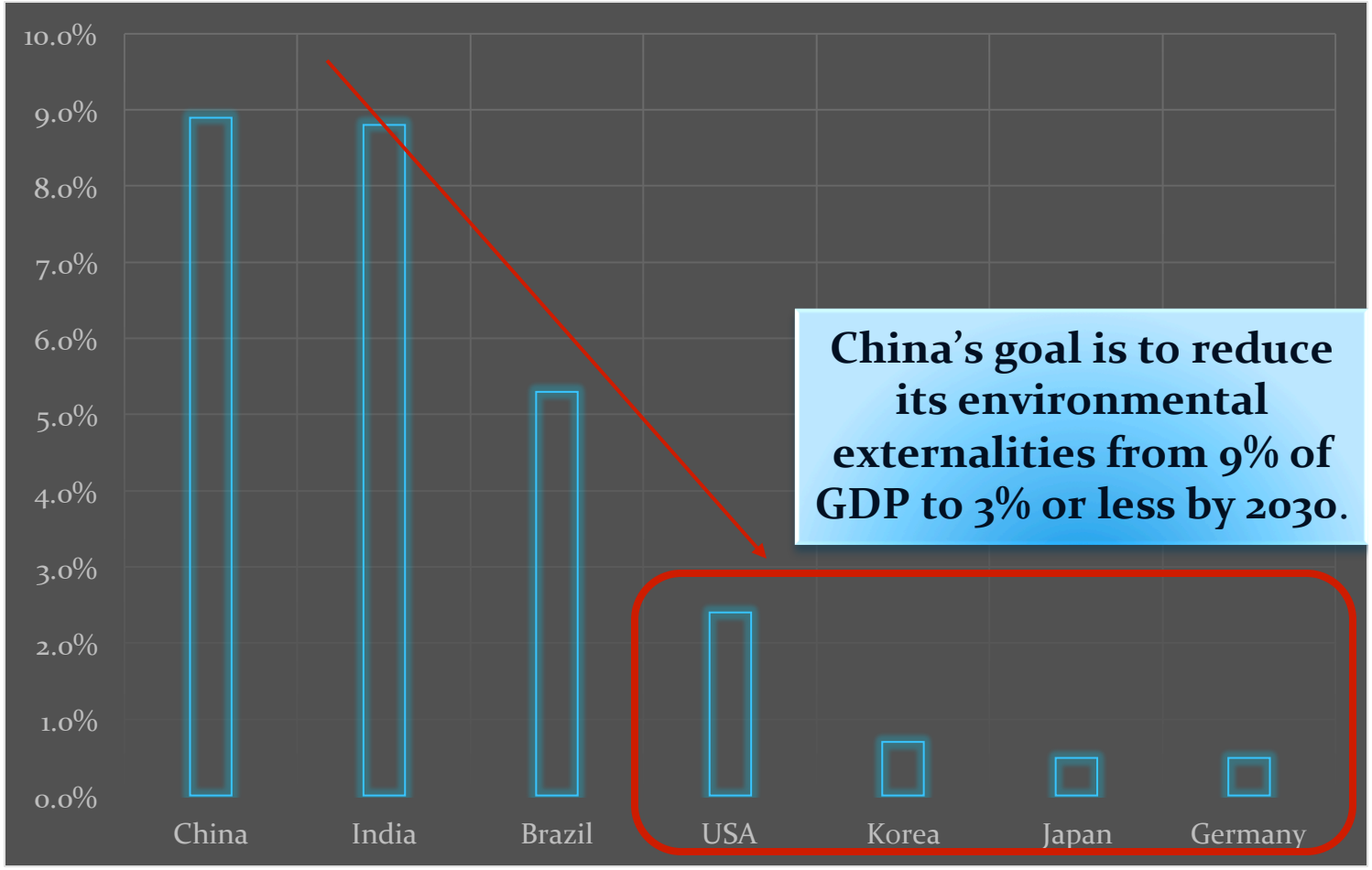
- A sound theory: Capital approach to sustainable development ✓
- A clear methodology: SEEA (System of Integrated Environmental and Economic Accounting) ✓
- Willingness by policy-makers to pursue a policy goal: sustainable development ✓

The macro-economic challenge: Reduce the Gap between Traditional and "Green" GNI



Growth in adjusted Net National Income (aNNI), which deducts pollution damage and resource depletion from NNI. Annual growth rates 2000-2008 for China: NNI = 10.3%, aNNI = 9.2%

As their incomes rise, countries want to be "green"



Environmental and Natural Resource Degradation and Depletion as % of Gross National Income (World Bank, 2010)

The "one million dollar question" :

Why should we care about resource depletion and – more in general – greening growth, if this imposes higher costs?

It does not.

Here is how and why..

A "greener" growth has a number of macroeconomic advantages:

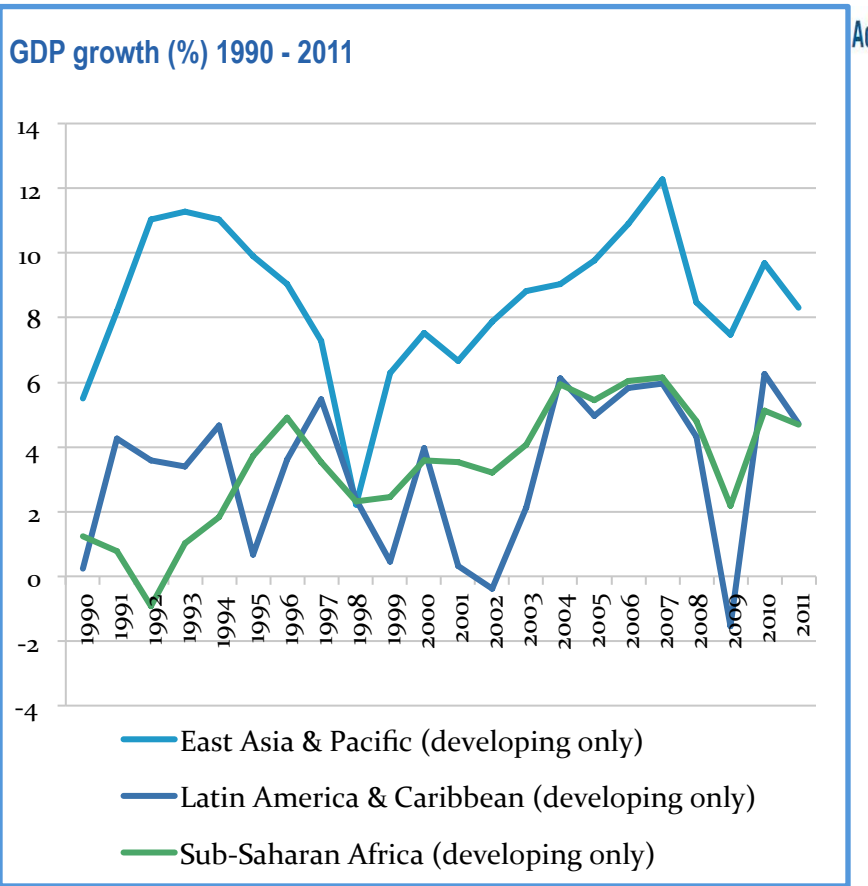
- It reduces environmental COSTS
- It strengthen macroeconomic STABILITY over time
- It induces INNOVATION
- It actually aims at INCREASING the stock of total WEALTH
- It is directly linked to fiscal sustainability
- It directly affects social sustainability issues

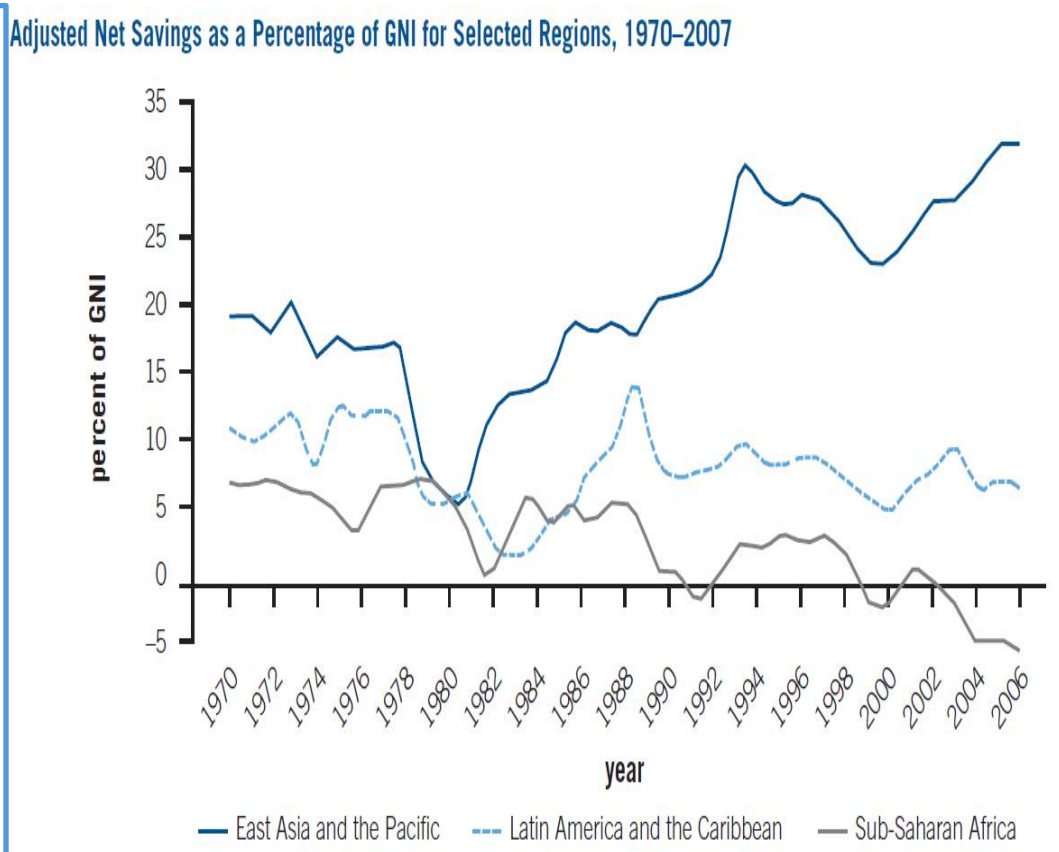
IN A NUTSHEL:

Green growth is an investment. Like any investment, in imposes costs but can generate high returns. Some returns are immediate (e.g., higher income due to efficiency gains) while others are in the medium and longer term (e.g., improved human capital through improved health).

Different regions show different trends on these issues

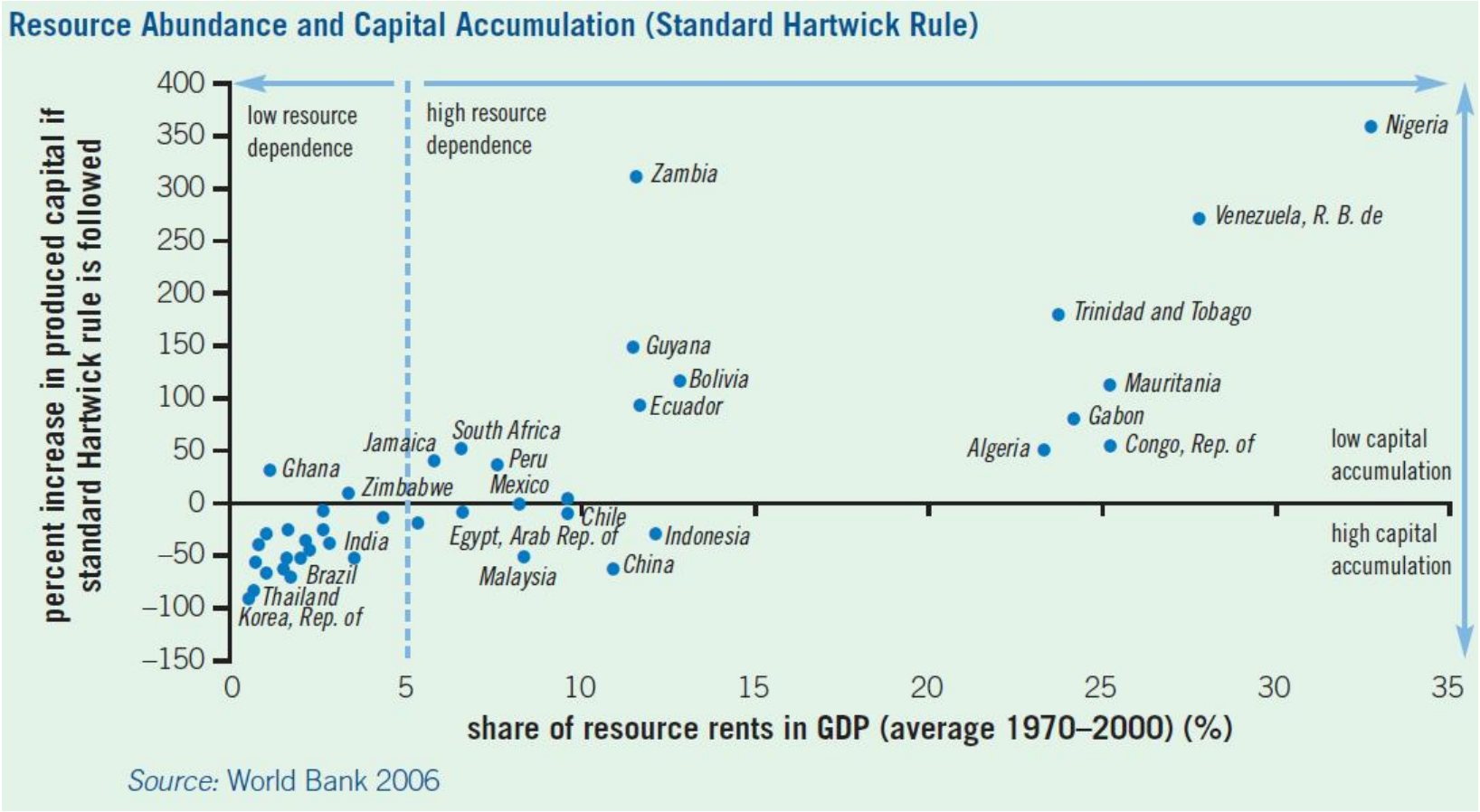
Countries can convert of one form of capital to another through investment, although there are limits to sustainable losses of natural capital.





Where macroeconomics, environmental valuation, and ethics meet

How to preserve total wealth and equal standards of living for future generations: the standard Hartwick rule



Macroeconomic implications:
Public Policies

Extraction efficiency

Land Tenure

Resource Rents Maximization

Adequate Fiscal Policy

Trade Facilitation

Clear Investment Policies

How much to invest in the economy and where?

Macroeconomic implications:
Resource rents utilization

Looking at the macroeconomic framework, the key question is whether the balance between

consumption Vs investment Vs saving

is optimal and what could be done to improve it.

Macroeconomic implications:
Macro, Monetary and Fiscal vulnerabilities

Volatility Vs Stability:

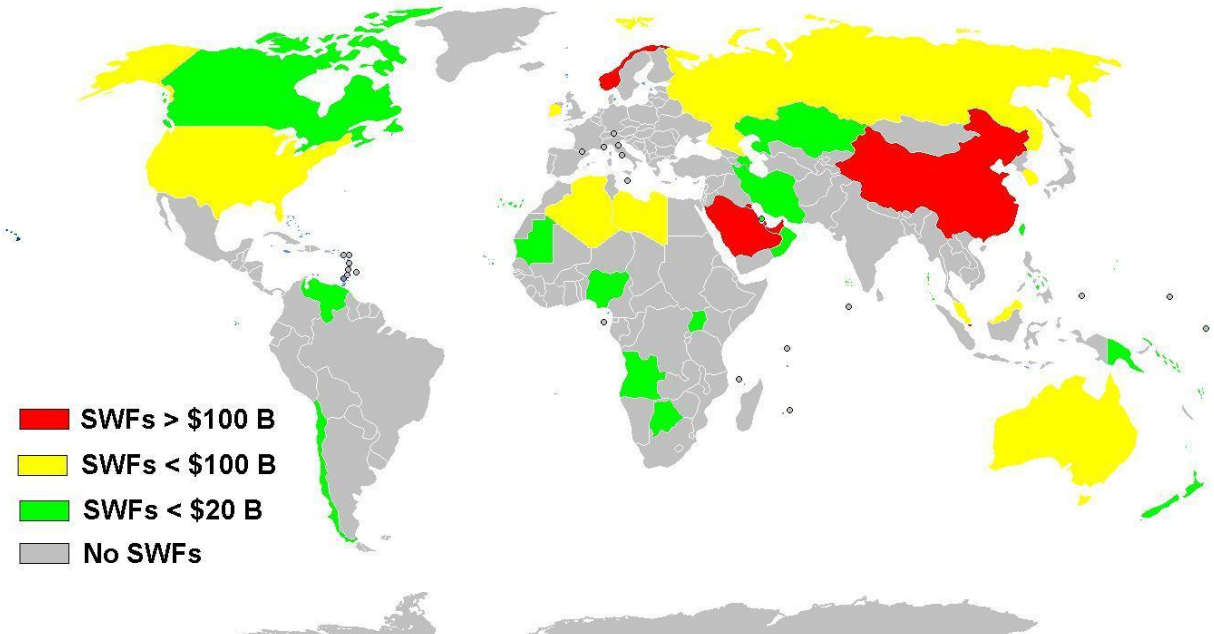
- Dutch disease – Resource Curse (explain!)
- What are the effects on RER?
- What is the level of inflation? Are there inflationary pressures?

Aside these issues, resource rents require strong macromonitoring, to manage the volatility of flows. This is more and more a current issue. As a matter a fact, prices have dramatically fluctuated in recent years.

Macroeconomic implications:
Absorption capacity and stabilization mechanisms

Increasing investment in infrastructure is expected to produce important and several spillover effects on the overall economy

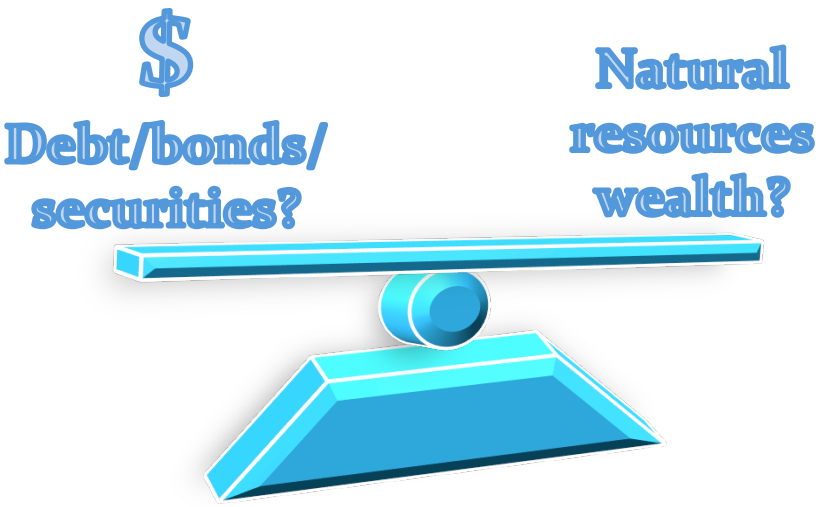
However, it is important to consider also the absorption capacity



One possibility: Sovereign Wealth Funds, or Generation Funds?

Macroeconomic implications:
Securitization options and debt sustainability

Complex implications on debt and innovative ways to fund development



Actual applications of Natural Capital Valuation:

Governments, the World Bank, and other development agencies are increasingly using natural capital valuation and accounting in four ways:

- Macroeconomic policy analysis and loans (development policy loans, or DPLs)
- Sectoral policy analysis and investments (water, land, forestry, energy…)
- Regional development projects (cross-sectoral analysis and projects, such as those with land-use tradeoffs)
- Links to climate change (analysis of emissions reduction options, adaptation actions, financing)

Actual applications of Natural Capital Valuation:

GERMANY: Environmental accounts play a major role in informing the German National Sustainable Development Strategy (out of 21 indicators, 5 based or derived from the German environmental accounts)

NORWAY: Norway intentionally sets aside large parts of the rent from the exploitation of its oil reserves. Thus, it has created the largest sovereign wealth fund in the world – worth $950 billion! This fund is used by Norway to invest in financial and produced assets around the world

SWEDEN: The Swedish Ministry of Finance prepares medium-term economic forecasts based on a general equilibrium model developed at the Swedish National Economic Research Institute that includes some environmental dimensions.

MAURITANIA: A Natural Capital Valuation Study conducted by the World Bank Group in 2013-14 supported the negotiation of a Fishery bilateral agreement with the European Union, which was characterized by strong resistances on both sides, resulting in a fairer agreement for both.

One important reflection:

Data is getting better and better… !

But.. Continue developing better statistical capacity is **essential** to strengthen the intrinsic value of this analysis (SEEA)

Also, these issues are public issues

- **Collect and disseminate information on natural wealth**
- **Involve all stakeholders in the debate (civil society)**

We must make sure that we replace

this....

with this.....

Thank you for your attention

For more information:
www.wavespartnership.org
www.worldbank.org/africa

IBRD The International Bank for Reconstruction and Development

IDA The International Development Association

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