

Canada's Natural Resource Reserve Index: An update

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François
Soulard



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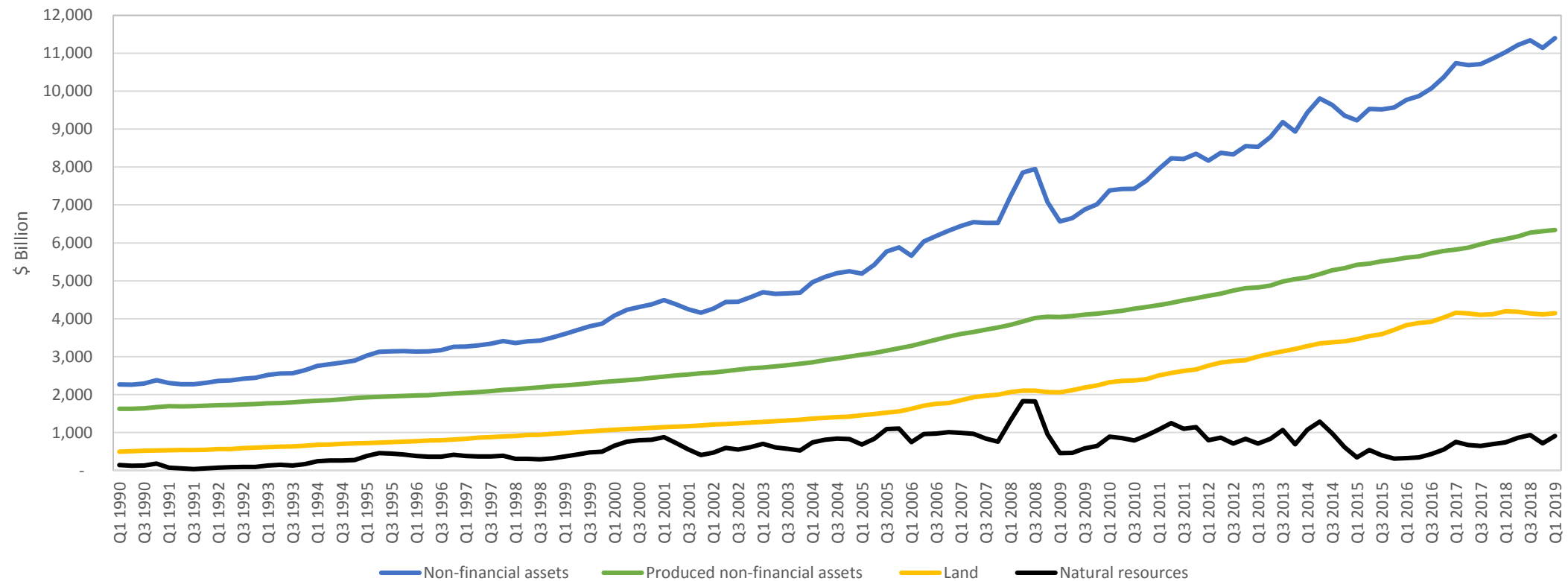
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Status / Background

- Statistics Canada publishes annual physical and monetary accounts of natural resources in Canada
 - adhere to international standards as outlined in the SEEA
 - include energy, minerals and timber
- Statistics Canada also publishes natural resources quarterly in the National Balance Sheet (NBS).
 - Inclusion of natural resource asset accounts (NRAA) in the NBS reflects a more complete picture of Canada's wealth.
- The SNA 2008 recommended inclusion of natural resource assets (NRA)—the in situ value of remaining resource stocks—in the national balance sheet accounts (NBSA).
- Statistics Canada developed a method of generating quarterly sectored NRA, and has formally integrated NRA with land and produced assets in the NBSA.

Canada's non-financial assets

:\$ value of physical stocks, NRA highly volatile



Source: Statistics Canada, table 36-10-0580-01

Status / Background

: Previous studies on natural resource index are limited

- In 2001, the Australian Bureau of Statistics (ABS) introduced an experimental national balance sheet that excluded the effects of price change. ***new*** In the 2015 update, the ABS began price averaging (5-year average) and indexing.
- Around the same time the Netherlands created a set of natural capital indicators based on a 0-to-100 scale that incorporated both the size and quality of ecosystems.
- ***new*** New Zealand used decoupling indicators to track the relationship between total level of electricity generation and population growth 2007 – 2015.

Why a reserve index?

: to sum changes in physical stocks

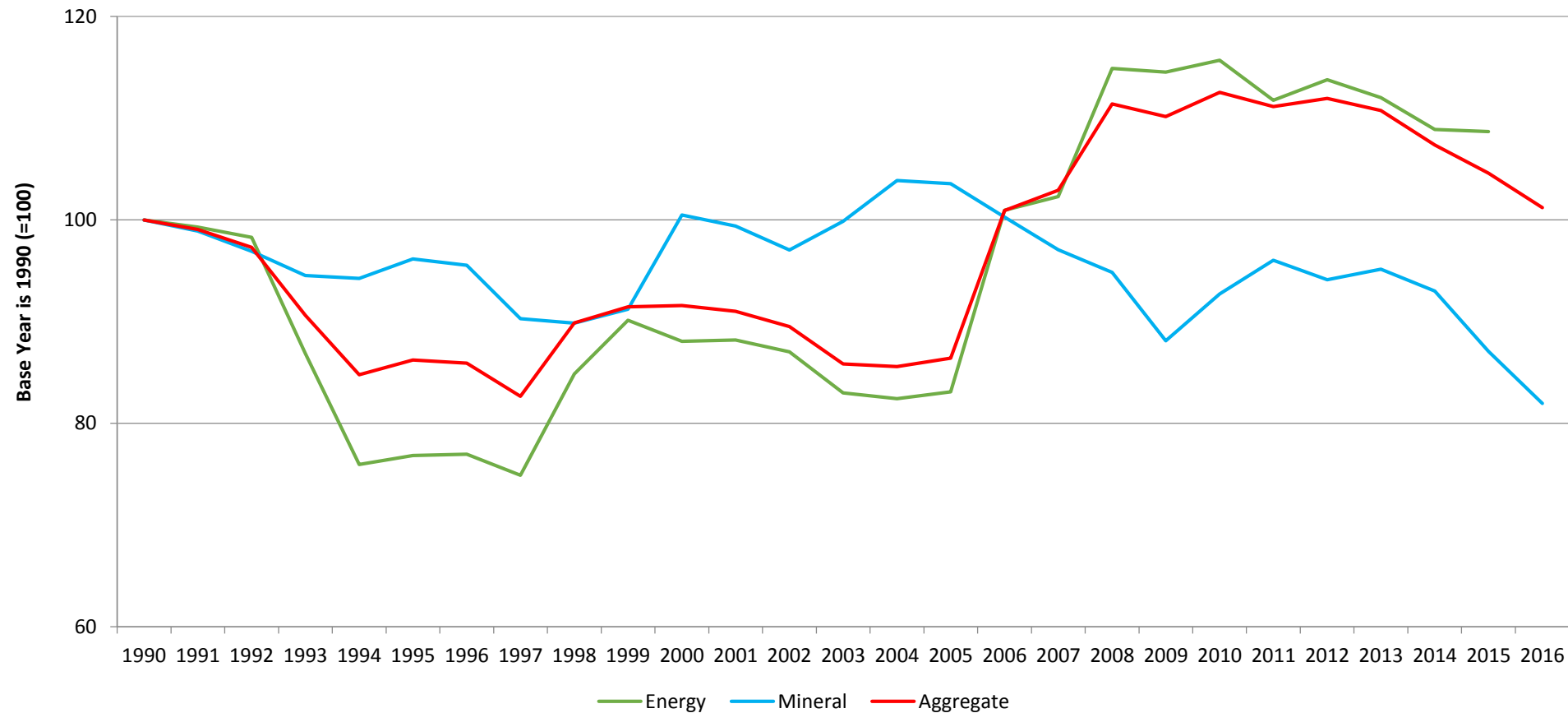
- Tracking physical reserves require an index because:
 - Reserves are measured using different units
 - The relative value changes over time—resource prices fluctuate
- The reserve index:
 - Sums all changes—discovery, depletion, value—in one number
 - Supplements the natural resource assets (NRA) estimate in the national balance sheet accounts (NBSA).

Natural Resource Reserve Index

- Natural assets in the national balance sheet accounts stem from timber, energy, and mineral resources
- Physical stocks of 13 types of energy and mineral resources and their monetary values are applied to estimate Canada's non-renewable NRRI
- The reserve index is used to shed more light on fluctuations in monetary wealth.

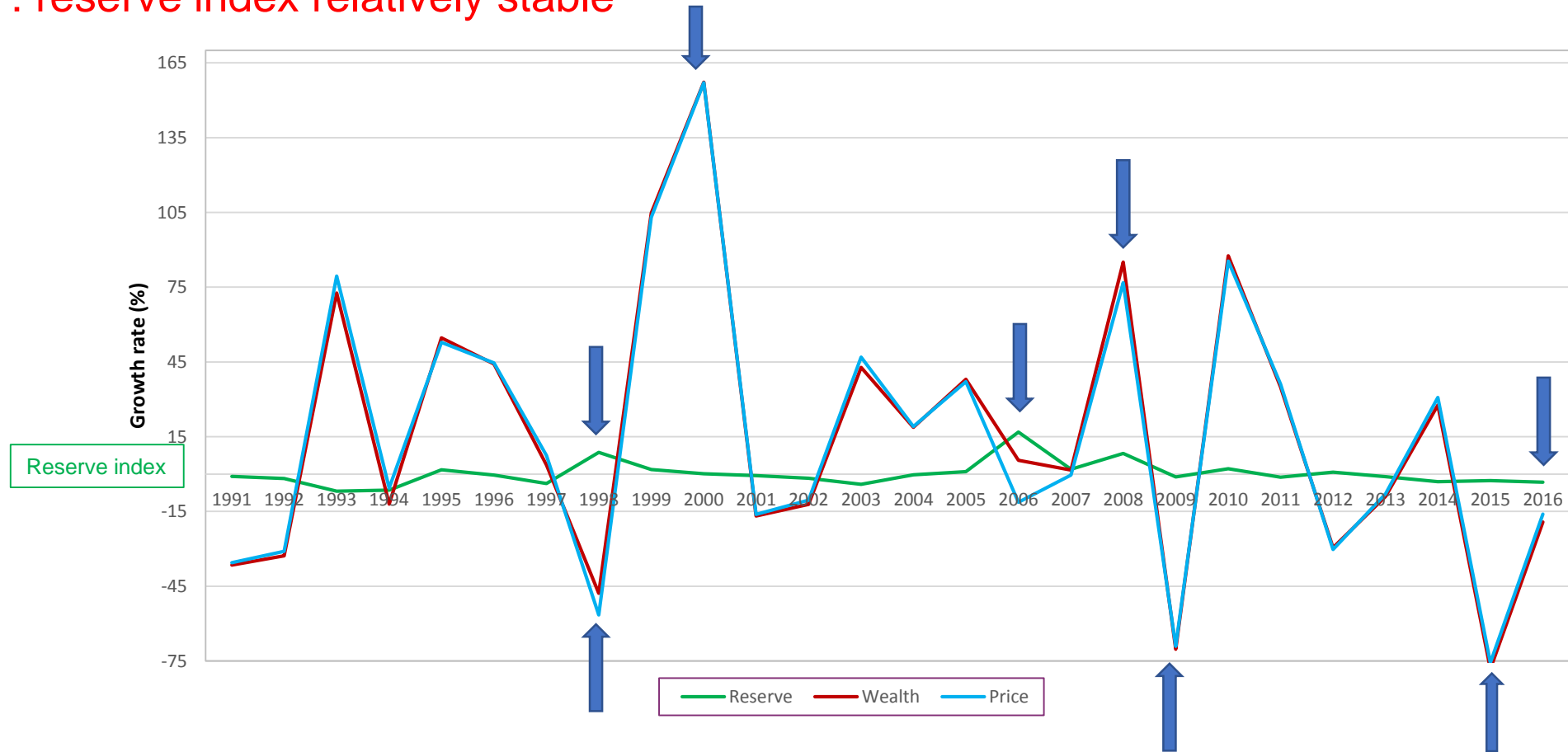
Natural resource reserve index

: with 1990 as the base year



Growth in reserve, wealth and price

: reserve index relatively stable



Proposal

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5.3.4 Conceptual form of the natural resource reserve index

Limitations

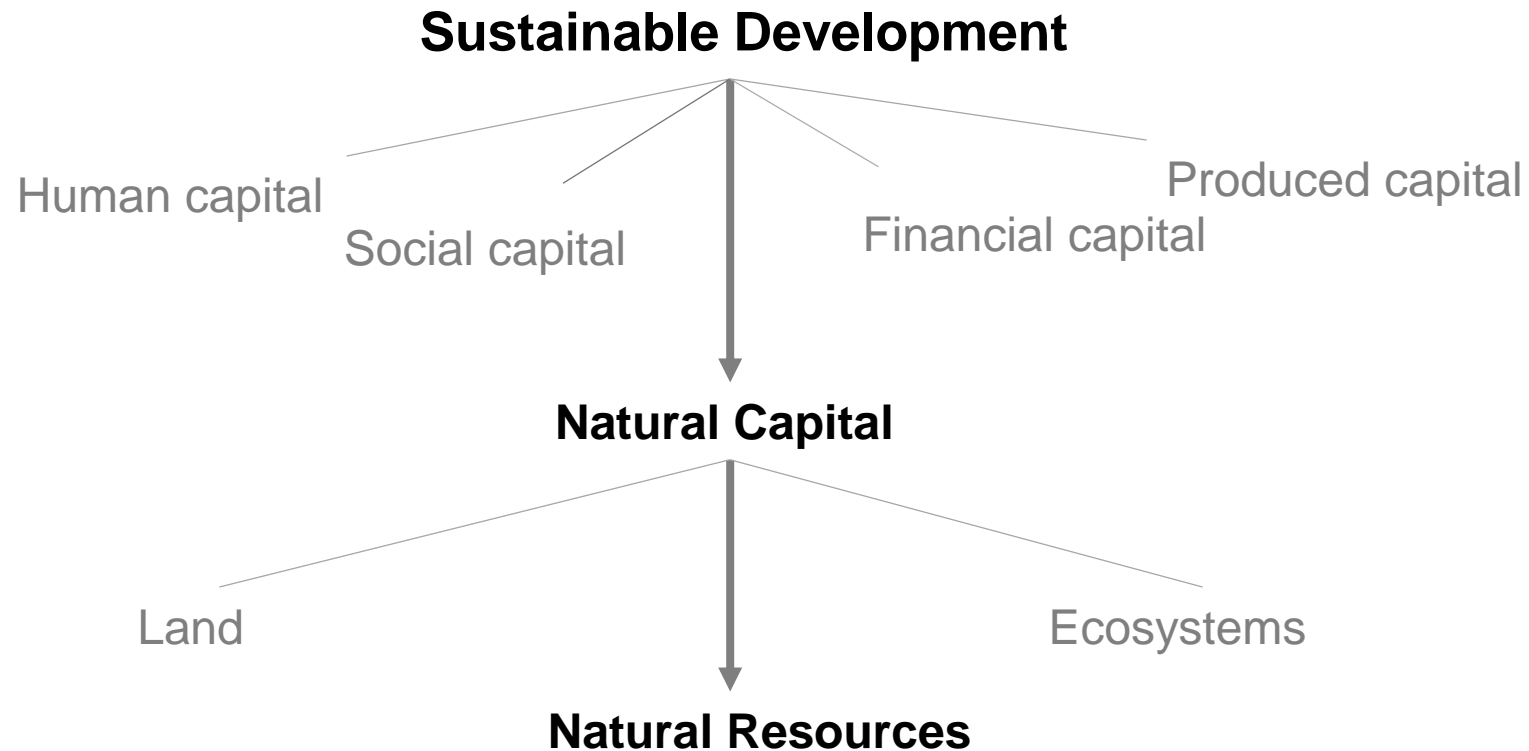
1. The significance of the index is more relevant when the natural resource measured is finite.
2. The interpretation of the index needs to be further clarified.
3. The index is limited to countries that have the physical and monetary accounts already in place.
4. Tracking natural resources in an aggregate manner may overshadow the behavior of each resource.
5. This index could be interpreted by some countries as a way to significantly increase wealth by exploiting identified resources, even though the accounts are meant to be used as a sustainable indicator through an environmental lens.

An update

: based on the previous LG 2018 meeting

This update clarifies the link between the NRRI and sustainable development, highlighting the role it can play and limitations it has as an indicator. Furthermore, it discusses the concept of sustainable development as it pertains in the SEEA-CF and the SNA 2008.

NRRI and SD



NRRI and SD

:definitions

The SEEA-CF uses the term ***environmental assets***, rather than natural capital.

While,

In the SNA 2008, ***natural resources*** is the term included within the category of non-produced non-financial assets.

1. Mineral and energy resources (oil, gas, coal, metallic and non-metallic mineral resources)
2. Land
3. Soil resources
4. Timber resources (cultivated and natural)
5. Aquatic resources (cultivated and natural)
6. Biological resources other than timber and aquatic resources (livestock, orchards, crops and wild animals)
7. Water resources (surface, groundwater and soil water resources)

An asset as 'a store of value representing a benefit or series of benefits accruing to the economic owner by holding or using the entity over a period of time.'

1. Financial assets
2. Non-financial assets
 1. Produced assets
 2. Non-produced assets
 1. **Natural resources**

NRRI as an Indicator

- Use of an existing environmental account, the NRAA, to derive an indicator capable of capturing links between the economy and the environment.
- Among others it links to SDG 12
 - help identify which resource is depleting faster than it is being replenished thus giving signals of unsustainable use of natural resources
 - Example: Since 1990, Canada has dropped 18 index points for minerals, highlighting a gradual depletion of that resource.



12.2 By 2030, achieve the sustainable management and efficient use of natural resources.

Limitations

1. The significance of the index is more relevant when the natural resource measured is finite.
2. The interpretation of the index needs to be further clarified.
3. The index is limited to countries that have the physical and monetary accounts already in place.
4. Tracking natural resources in an aggregate manner may overshadow the behavior of each resource.
5. This index could be interpreted by some countries as a way to significantly increase wealth by exploiting identified resources, even though the accounts are meant to be used as a sustainable indicator through an environmental lens.
6. ***new*** While the index focuses on natural resources wealth, it fails to capture the ecosystem aspect of natural capital.

Non-renewable NRA

: included in the reserve index

Energy resource	Physical stock (q)
Natural gas Conventional oil Oil sands	Cubic metres
Coal	Tonnes
Mineral resource	Physical stock (q)
Gold Nickel Copper Lead Iron Molybdenum Uranium Potash	Tonnes
Diamonds	Carats

- ❖ The basket of commodities can be modified to include or remove resources.
- ❖ In principle, any natural asset that can be valued is able to be included in the index.



Summary

1. In 2015, National Balance Sheet Accounts integrated Natural Resource Assets with land and produced assets:
<http://www.statcan.gc.ca/daily-quotidien/151214/dq151214a-eng.htm?HPA>
2. The reserve index enhances interpretation of the NRA
3. NRA could be highly volatile
 - Inherent due to changes in reserves
 - Price changes amplify fluctuations
4. ***new*** In conjunction with human capital and produced capital, can be used as an indicator of sustainable development
5. ***new*** NRRI is currently a partial account
6. Can also be used for designing sustainable development strategies

Comments/questions?

THANK YOU!

For more information,
please visit

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