



**Sustainable Prosperity** is a national research and policy network, based at the University of Ottawa. SP focuses on market-based approaches to build a stronger, greener, more competitive economy. It brings together business, policy and academic leaders to help innovative ideas inform policy development.

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# National Capital

## What is it?

The concept of national capital, or national wealth, refers to the sum of a country's assets, in terms of natural, human, social, produced and financial capital.<sup>1</sup> It is an extension of the traditional concept of national wealth in recognition of the fact that other forms of capital (natural, human and social) contribute significantly to national wealth. In order to be economically prosperous, a country needs to be a good steward of its national capital, with a gradually increasing capital stock if the population is growing. Richer countries' national capital tends to be comprised of mostly intangible capital, such as human and social, whereas natural capital is a lower proportion of total national wealth.<sup>2</sup>

Examples of each form of capital are:<sup>3</sup>

- **Natural:** land, mineral and energy resources, groundwater resources, ecosystems, trees and other non-cultivated plants, and animals (including fish);
- **Human:** educated and healthy workforce;
- **Social:** functioning social networks and institutions;
- **Produced:** machinery, buildings, telecommunications and other types of infrastructure; and,
- **Financial:** stocks, bonds and currency deposits.

## How is it calculated?

Different types of national capital are calculated using different methods. For produced capital, the net capital stock is calculated by taking the sum of gross investment minus depreciation, known as the perpetual inventory method.<sup>4</sup> Financial and produced capital value is directly observable in the market.<sup>5</sup>

Natural capital is generally calculated as the net present value of the estimated stream of rent the capital can be expected to produce over an assumed lifetime.<sup>6</sup> The calculation therefore necessitates assumptions about future prices, costs and rate of extraction, and the discount rate; for simplicity's sake, it is often assumed that net price and level of extraction remain constant over time.<sup>7</sup> The value of ecosystem services is generally excluded, as are the value of unpredictable natural resource revenue streams, such as fisheries.<sup>8</sup> One major problem with the calculation is that there are few stock data available to use in the calculation of lifetime values. Environmental pollution is assumed to be reflected implicitly in lower total national capital, since it leads to lower labour productivity and negative health effects, which depress income.<sup>9</sup>

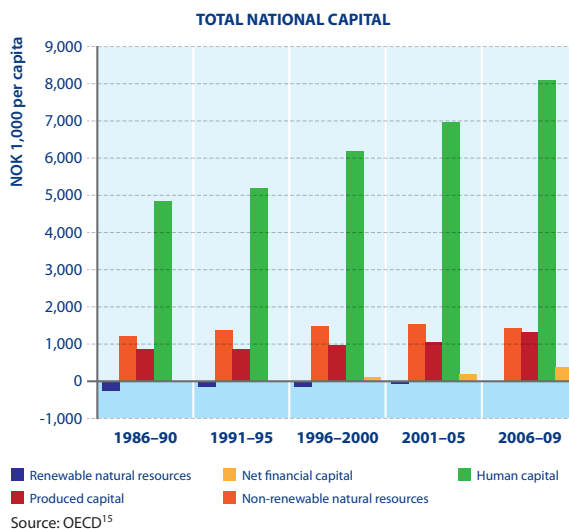
Human and social capital is generally not calculated directly,<sup>10</sup> but instead is taken as the residual between total wealth and produced, financial and natural capital.<sup>11</sup>

## Who uses it and how?

### Norway

Norway is one of the leading jurisdictions when it comes to using national capital as a measure of economic sustainability. Norway's main concern is to preserve its natural resource wealth for future generations, so a portion of the revenues from its natural resources go into a Sovereign Wealth Fund.<sup>12</sup> Norway's Sustainable Development Strategy outlines that the country's natural capital decreases (such as oil and gas) must be offset by increases in other forms of wealth.<sup>13</sup> Statistics Norway estimates that human capital represents 73% of total national capital, while oil and gas reserves represent only 12%.<sup>14</sup> Figure 1 shows Norway's national capital figures since 1986.

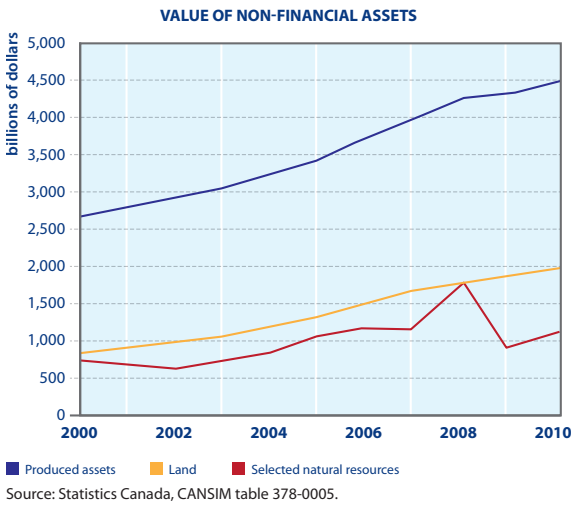
Figure 1: Norway's Total National Capital (1986–2009)



### Canada

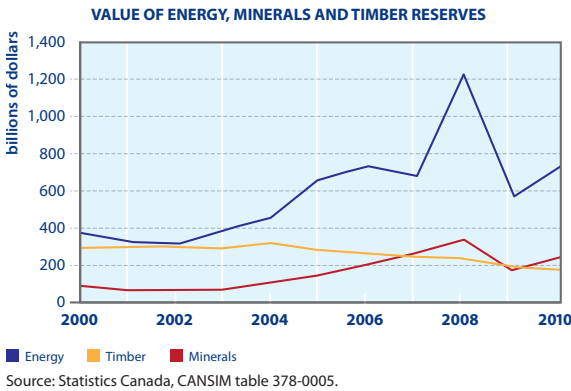
Canada also calculates certain aspects of its non-financial national capital, including produced assets, land, and certain natural resources. In 2010, Canada's natural capital was valued at \$1.16 trillion (\$34,000 per capita), or about 15% of non-financial assets, as shown in Figure 2. Given that the value of certain natural resources is driven by the forces of global market supply and demand, the values for energy and mineral capital are more volatile than for other types of natural capital which are valued based on domestic market conditions, such as land.

Figure 2: Value of Canada's Non-Financial Assets (2000–2010)



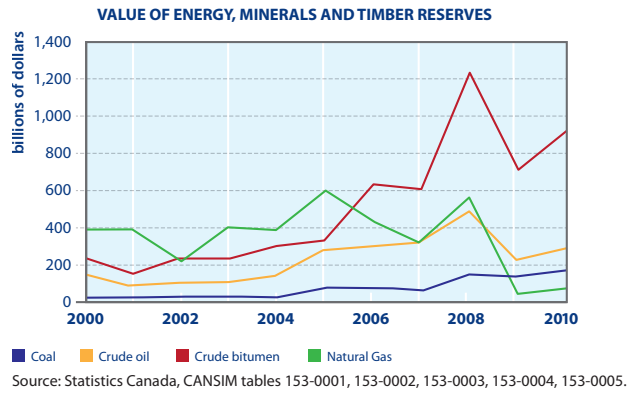
Energy resources accounted for 63% of total natural resource wealth, while minerals accounted for 22%, and timber 15%, as shown in Figure 3.

Figure 3: Value of Canada's Energy, Mineral and Timber Reserves (2000–2010)



Most of energy wealth is in the form of crude bitumen (oil sands) – valued at \$460 billion, as shown in Figure 4.

Figure 4: Value of Canada's Energy Resources (2000–2010)



## Utility for Policy-Makers

National capital is a measure of a country's total wealth. When tracked over time, it can show whether capital stocks are going up or down, and which types of capital are growing or are being depleted. National capital calculations give an indication of how well a country's natural resource wealth is being managed, and whether a country's economic structure is producing sustainable wealth. Wealth from non-renewable resources should be invested in other forms of capital in order to maintain the total wealth, or national capital, of a country. At the same time, different forms of capital are not necessarily equal or interchangeable; certain forms of non-renewable natural capital for instance, cannot just be offset by increases in human capital.

## Endnotes

- Financial capital does not include individual wealth, because what is a financial asset for one person is a financial liability for another. The only financial capital that counts in national wealth is net foreign financial assets (the difference between Canada's holdings of financial assets in other countries and their holding of Canadian financial assets).
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- There are also methods that estimate human capital directly.
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