



The Changing Wealth of Nations

Measuring Sustainable Development in the New Millennium

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Motivation – Measuring social welfare

- Samuelson (1961) - Current income and consumption provide only an incomplete measure of welfare:
- *“the only valid approximation of welfare comes from computing wealth-like magnitudes”*

Concepts – measuring wealth and saving

Total or 'comprehensive' wealth W

$$W_t = \sum_{i=1}^N p_{it} K_{it} = \text{PV of future consumption}$$

Intangible capital IC

$$IC = W - \text{produced capital} - \text{natural capital}$$

Net or 'genuine' saving N

$$N_t = \sum_{i=1}^N p_{it} \Delta K_{it} = \text{Change in social welfare}$$

Concepts – Intangible capital

- Because it is measured as a residual, it includes all intangible assets:
 - Human capital
 - Institutional quality / governance
 - Social capital
 - ‘Other TFP’ - knowledge

Intangible capital consists of more than human capital

Elasticities of output with respect to production factors

	All countries	All countries	Developing countries	OECD countries
Produced capital	0.398	0.320	0.313	n/s
Natural capital	n/s	0.068	0.072	n/s
Human capital index	n/s			
Intangible capital		0.176	0.169	0.502

n/s – not statistically significant

The Wealth of Nations



The SNA balance sheet – what's missing?

National wealth and income in Canada, 2009 (\$mn CDN)

Net financial assets -109,452

Land assets 1,846,753

Produced capital K 4,191,919

Net worth 5,929,220

GNI 1,505,817

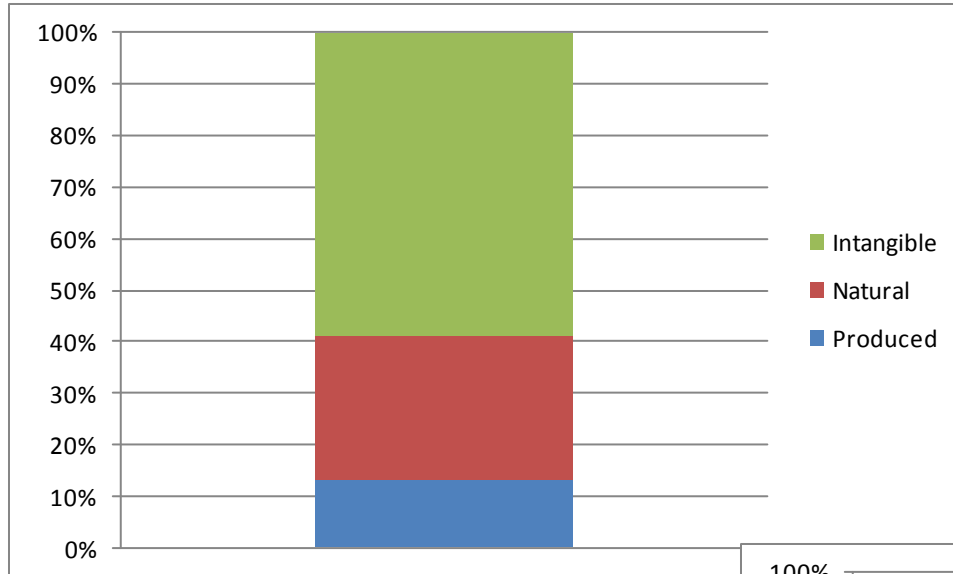
Implicit rate of
return

GNI / K 35.9%

GNI / Net worth 25.4%

Where is the wealth of nations?

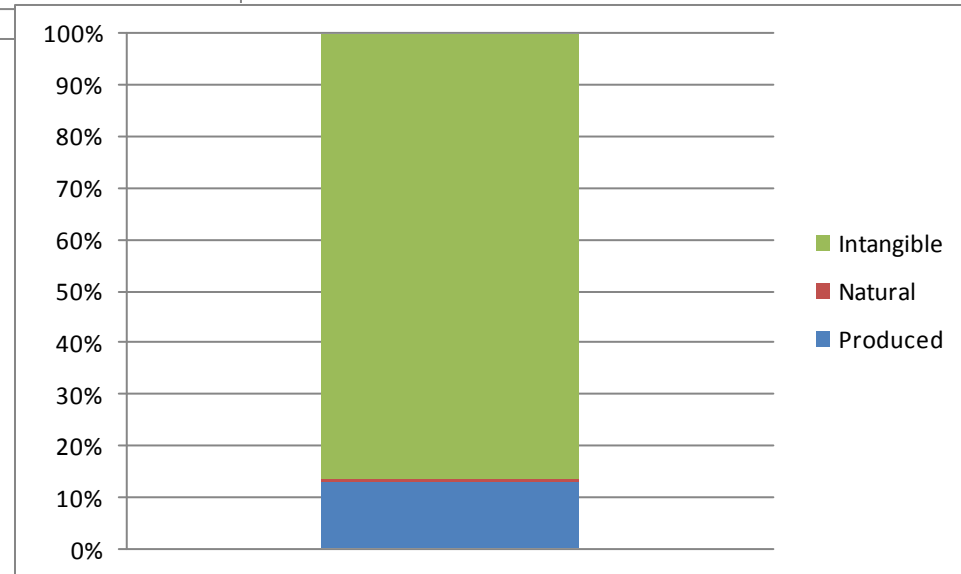
Shares of total wealth, 2005



Total wealth / capita:
\$9,500 in Ghana



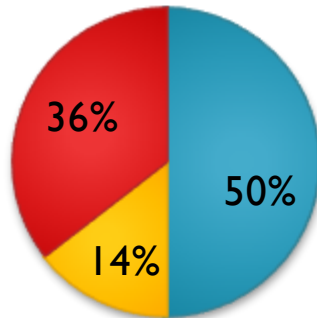
Total wealth / capita:
\$663,000 in the UK



Composition of total wealth

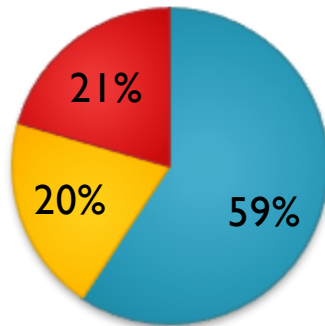
Shares of comprehensive wealth, by income class, 2005

Low Income Countries



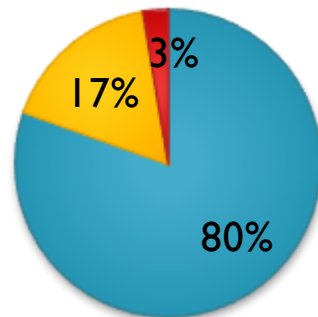
- Natural capital is most important in low income countries—more than twice as large as produced capital

Middle Income Countries



- In middle income countries natural capital and produced capital are roughly equal

High Income Countries



- Intangible wealth dominates in all countries, especially in high income countries

■ Intangible Capital

■ Produced Capital

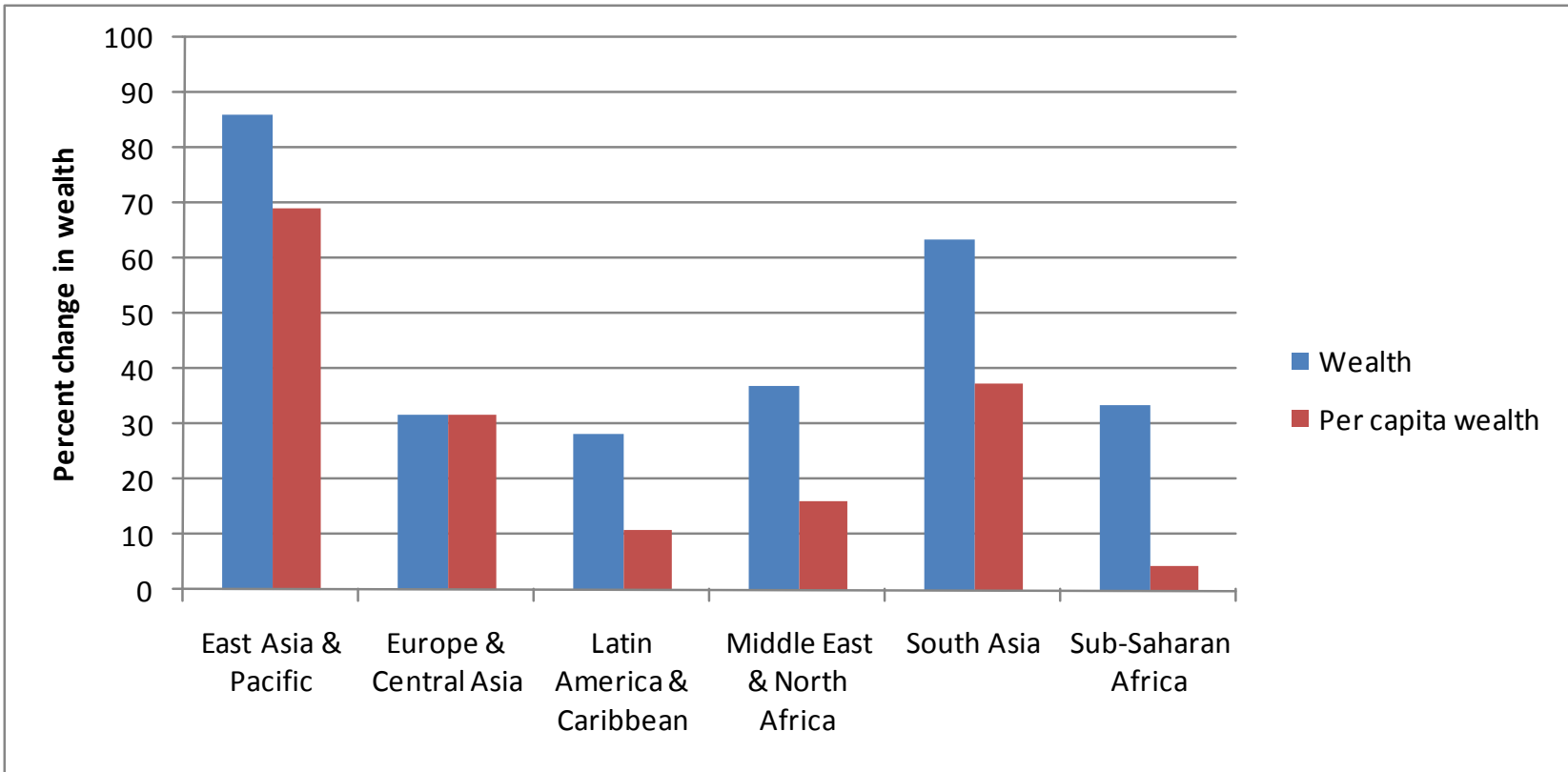
■ Natural Capital

What changed? 1995-2005



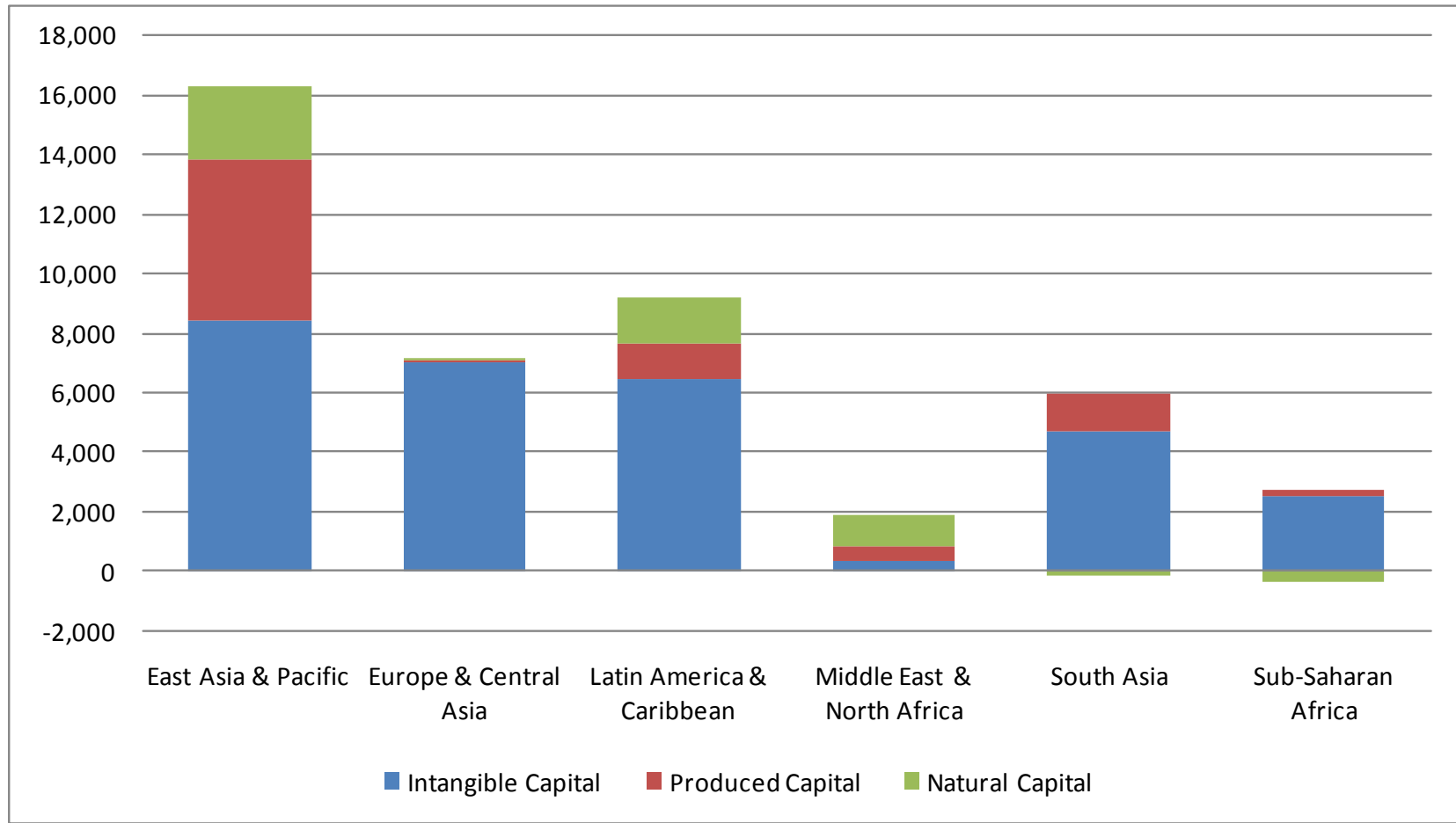
How did wealth change from 1995 to 2005?

Growth in total and per capita wealth by region



Globally, wealth grew 34% in total and 17% per capita

Change in total wealth by type of asset \$ billion, 1995-2005



“How we measure development
will drive how we do development”



Policy conclusions

- How do governments increase intangible wealth?
 - Invest in human capital
 - Reform institutions and governance
 - Invest in the capacity to generate and use knowledge – **innovation policy is key**