



# Traditions of EC CBA Guide



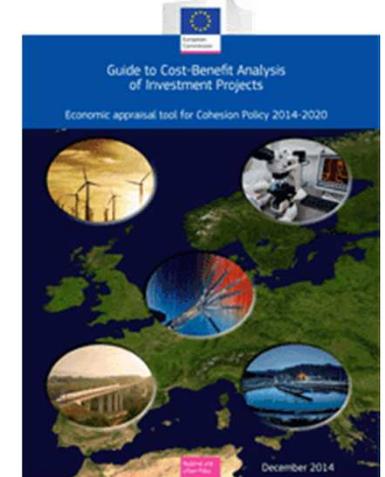
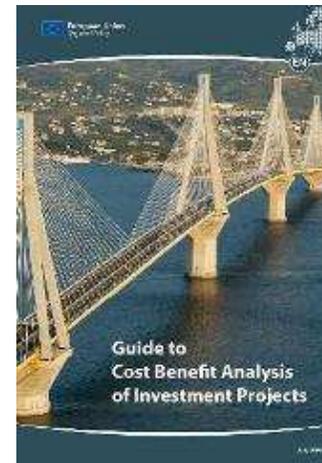
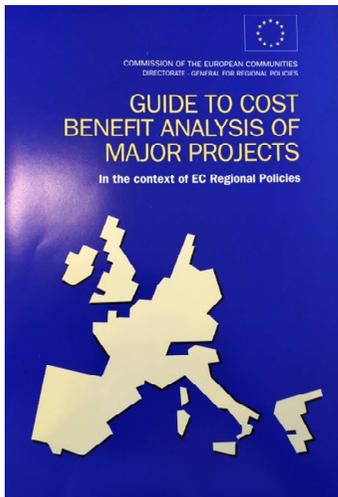
**2014:** 5<sup>th</sup> edition, 364 pages

**2008:** 4<sup>th</sup> edition, 257 pages

**2002:** 4<sup>th</sup> edition, 133 pages

**1997:** 2nd edition, 84 pages

**1994:** 1st edition, 28 pages



# Sectors of CBA application: evidence from the ground



**Rail** (e.g. Austria, Denmark, Canada, Sweden, Netherlands).  
**Urban transport** (e.g. New Zealand, Austria, Denmark, Canada, Sweden, Netherlands)  
**Airports, ports and waterways** (e.g. Austria, Canada, Sweden, Netherlands, UK)



**Water supply and wastewater** (e.g. Canada, Netherlands)  
**Solid waste management** (e.g. Canada, UK)  
**Other environmental projects: risk prevention and mitigation, natural asset conservation, etc.** (e.g. Canada, Sweden, UK)



**Energy: production, transmission and distribution** (e.g. Denmark, Canada, Sweden)



**Education** (e.g. Canada, UK)  
**Culture and leisure** (e.g. New Zealand, Canada, UK)



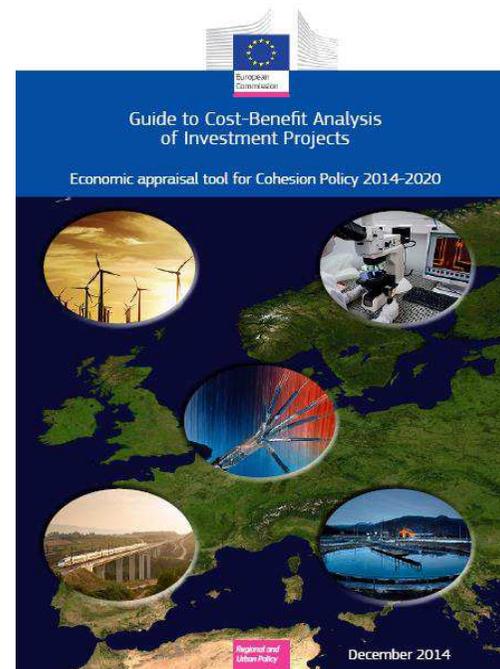
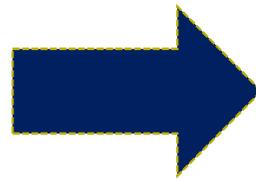
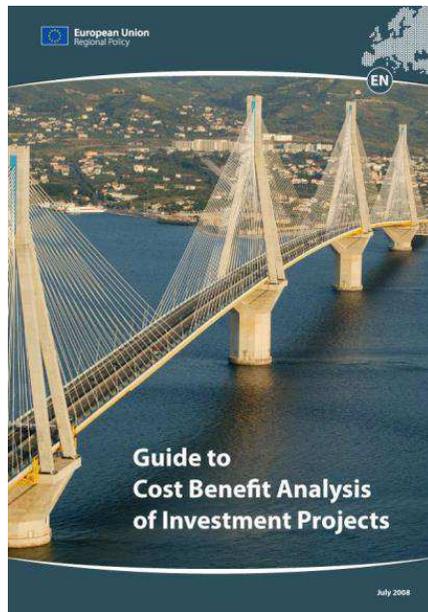
**ICT:** telecommunications, broadband, ICT applications to businesses and citizens (e.g. Canada, UK)  
**Health** (e.g. Canada, Sweden)



**Scientific research** (e.g. Canada, UK)  
**Technological development and innovation:** science parks, technological parks, incubators, etc. (e.g. Canada, UK)



# Sectors of CBA application in the EU28





# ...SOCIAL COST OF CAPITAL: the social discount rate

The discount rate in the economic analysis of investment projects, the **Social Discount Rate (SDR)** reflects the social view on how future benefits and costs should be valued against present ones.

**5%** social discount rate is used for major projects in **Cohesion countries** and **3% for the other Member States.**

Annex II of the Guide discusses the empirical approaches used for SDR estimation and provides examples of estimates at country level.

*EC, Guide to Cost-Benefit Analysis of Investment Projects Economic appraisal tool for Cohesion Policy 2014-2020, December 2014.*

**Not all surveyed OECD member states have a standard SDR.** Where adopted, it is **computed at central level** and recommended to all players who are expected to comply with them. It is occasionally substituted by financial signals.

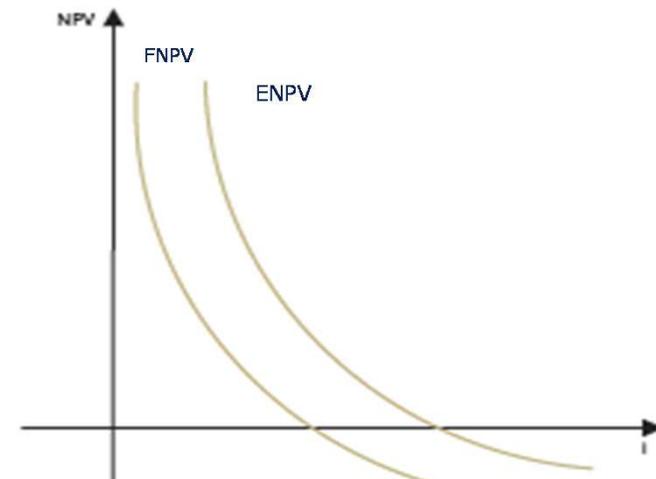
The **social rate of time preference** is adopted in e.g. France, Germany, Italy, Portugal, Slovak Republic, Spain, UK, USA.

# Economic Performance Indicators: NPV and ERR

It is possible to measure the economic performance of the project by calculating the following indicators:

- **Economic Net Present Value** (ENPV): the sum of the discounted net flows of a project.
- **Economic Rate of Return** (ERR): the discount rate that zeroes out the net present value of flows of costs and benefits of an investment;
- **B/C ratio**: the ratio between discounted economic benefits and costs.

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# ...RISK ANALYSIS

**Risk assessment is mandatory for any CBA** (Art. 101 of Regulation N. 1303/2013).

**Recommended steps** for assessing the project risks are:

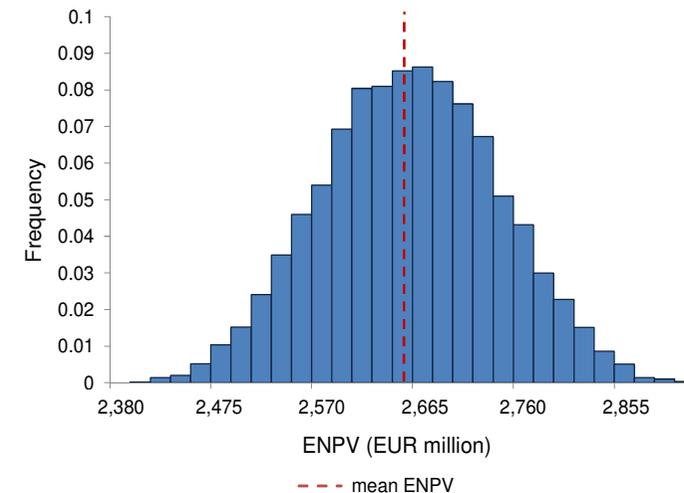
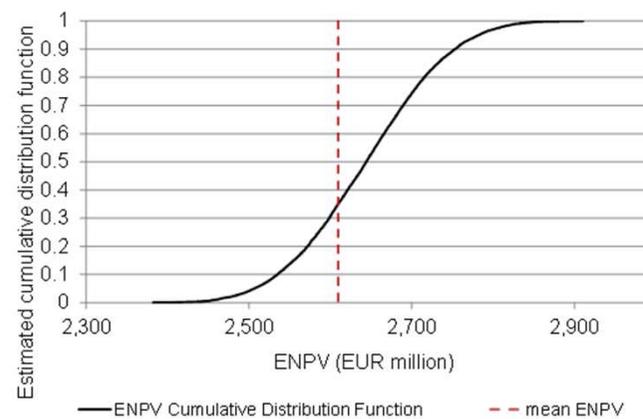
- sensitivity analysis
- qualitative risk analysis
- probabilistic risk analysis
- risk prevention and mitigation.

## Qualitative risk analysis

*EC, Guide to Cost-Benefit Analysis of Investment Projects Economic appraisal tool for Cohesion Policy 2014-2020, December 2014.*

The treatment of uncertainty is often **limited to scenario and sensitivity analysis**. A proper risk analysis regularly performed in UK and **more occasionally elsewhere**. Sweden, the Netherlands and the UK apply risk analysis with the use of **Montecarlo simulations**.

*Example of cumulated and punctual probability distribution of the ENPV*



# SRTP estimation

## *The social rate of time preference:*

$$\text{SRTP} = p + e \cdot g$$

where

$p$  is the pure time preference,  
 $e$  is the elasticity of marginal utility of consumption,  
 $g$  is the expected growth rate of per capita consumption

Source: The social cost of capital: recent estimates for the EU countries by Massimo Florio and Emanuela Sirtori, CSIL Working paper N. 03/2013

Table 2: Estimation of the SRTP for 20 EU countries

<i>Parameter</i>	<i>p (%)</i>	<i>e</i>	<i>g (%)</i>	<b>SRTP (%)</b>
<i>Reference period for the estimation</i>	2011	2011	2000-2018	
Italy	0.98	1.50	0.10	1.13
Portugal	0.97	1.86	0.38	1.67
France	0.84	1.27	0.71	1.74
Denmark	0.94	1.28	0.63	1.75
Belgium	0.96	1.53	0.71	2.05
Spain	0.84	1.45	0.86	2.09
Luxembourg	0.74	1.84	0.77	2.17
Netherlands	0.81	1.55	0.96	2.30
Greece	0.98	1.47	0.96	2.39
United Kingdom	0.88	1.53	1.13	2.61
Austria	0.91	1.45	1.20	2.65
Germany	1.04	1.33	1.36	2.84
Slovenia	0.91	1.38	1.69	3.25
Finland	0.94	1.70	1.46	3.42
Hungary	1.29	1.25	1.90	3.67
Sweden	0.95	1.65	1.73	3.80
Ireland	0.63	2.31	1.55	4.21
Poland	0.97	1.09	3.16	4.43
Czech Republic	1.02	1.44	2.58	4.75
Estonia	1.14	1.19	4.53	6.52
<b>TOTAL AVERAGE</b>	<b>0.94</b>	<b>1.50</b>	<b>1.42</b>	<b>2.97</b>
<b>NON-CF COUNTRIES</b>	<b>0.91</b>	<b>1.51</b>	<b>0.98</b>	<b>2.41</b>
<b>CF COUNTRIES</b>	<b>0.97</b>	<b>1.49</b>	<b>1.96</b>	<b>3.66</b>

Source: Authors' estimation based on Eurostat, OECD and IMF data