

The discount rate in the evaluation of public investment projects

Wednesday 29 March 2017 from 1:30pm to 6:00pm

DGFIP Île-de-France

Auditorium, Site de Saint-Sulpice

Entrance from 1:30pm to 4:00pm, 9 place Saint-Sulpice
and from 4:00pm to 6:00pm, 71 rue Bonaparte

PARIS – 75006

PROGRAMME

The General Commission on Investment, *Commissariat général à l'investissement*, France Stratégie and the General Council for the Environment and Sustainable Development, *Conseil général de l'environnement et du développement durable*, initiated a series of conferences on the socio-economic evaluation of public investments, chaired by Roger Guesnerie, professor at the Collège de France and Honorary President of the Paris School of Economics.

The main purpose of socio-economic evaluation is to inform policymakers before they make their choices public. The conferences take stock of the methodology used, academic research and practices. The first five conferences were organized from 16 September 2014 to 14 December 2016. This sixth conference deals with the discounting system.

(<http://strategie.gouv.fr/evenements/taux-dactualisation-selection-projets-dinvestissement-public>).

Discounting is the usual method used to compare the future value to a present value. This is a key parameter for evaluating the socio-economic impact of public investment projects decades in the future.

The use of the discount rate when determining the socio-economic impact of projects varies widely depending on the country, as is the case with the US, the UK and France.

In the United States, the discount rates are multiple. Since 2003, the Office of Management and Budget (OMB) recommends that project costs and benefits be discounted at two constant rates: 3% and 7%. The first is the average return to 10 years government bonds, taken as an estimate of the social rate of time preference. The second is the average before-tax rate of return to private capital, taken as an estimate of the opportunity cost of capital.

In the United Kingdom, the discount rate is based on the Ramsey formula ($\alpha = \delta + \gamma\mu$) and declines over time. The first term of the formula ($\delta = 1.5\%$) is interpreted as a combination of pure time preference and risk of catastrophe, under which the future effects would be eliminated or severely altered. The elasticity of the marginal utility of consumption (γ) is set to 1, and the economic growth rate (μ) is estimated at 2.0%, yielding a discount rate of 3.5% ($1.5\% + 1 \times 2.0\%$) for 30 years. For periods of time longer than this - or even beyond 100 years - the UK Treasury considers a high discount rate would be a problem. The UK government draws on the theoretical works of Weitzman & Gollier, which show the discount rate may decrease if the uncertainty of growth forecasts is taken into account, when

evaluating over more than 30 years. It uses a discount rate that decreases in increments from 3.0% beyond 30 years to 1.0% beyond 300 years.

In France, the Lebègue Report (2005) proposes using the theoretical base used by the UK Treasury while adapting it to forecasts for French economic growth. It recommends a rate of 4.0% up to 30 years, decreasing to 2.0% beyond this. The 4.0% rate ($1.0\% + 2 \times 1.5\%$) is obtained by applying the Ramsey formula, with the pure time preference rate $\delta = 1.0\%$, elasticity of marginal utility consumption $\gamma = 2$ and economic growth $\mu = 1.5\%$. The proposed discount rate is obtained by using two scenarios of economic growth: 2.0% with a 2/3 probability and 0.5% with a 1/3 probability.

Currently, the French discount rate set by the Quinet Commission (2013) draws on the theoretical framework of the Lebègue Report, which was further developed in the Gollier Report (2010). The Quinet Commission (2013) recommends a risk-free discount rate of 2.5% to 2070, gradually declining to 1.5% beyond 2070. A risk premium, specific to each project, is added according to its macroeconomic sensitivity (β) and systemic risk premium. It is set at 2.0% up to 2070 and 3.0% beyond 2070.

This was the result of decisions made in light of France's economic outlook and by incorporating risk in the economic calculus. The discounting system must take into account the country's expectations as to the increase in national wealth likely to take place, the uncertainty of these expectations and the risks the different projects represent for the public purse in the event the expectations are unfounded. The



discounting system recommended by the Quinet Commission (2013) consists of discounting the different monetary flows a project generates at different discounting rates, according to the socioeconomic risk premiums on the flows. In several projects, two calculations were undertaken with a constant discount rate and with discount rates taking into account risk premium.

In terms of the aims of the conference, they are as follows:

- Discuss the theoretical controversies surrounding the discounting rates and their use,
- Look at how these controversies influence government guidelines and practices,
- Explore the challenges related to discounting rates and the best existing practices in a round table with government representatives.



1:30pm WELCOME COFFEE

1:45pm INTRODUCTION

Roger GUESNERIE, professor, Collège de France;
Honorary President, Paris School of Economics

Anne-Marie LEVRAUT, vice-president of the General
Council for the Environment and Sustainable
Development

Michel YAHIEL, general commissioner, France Stratégie

2:00pm **The discount rate:
The economic theory
& the controversies
surrounding its use**

Christian GOLLIER, professor of economy, University
Toulouse 1 Capitole and London School of Economics

James HAMMITT, professor of economics and decision
sciences, director, Harvard Center for Risk Analysis

Nicole EL KAROUI, emeritus professor of applied
mathematics at the Pierre and Marie Curie University

Questions from the floor

3:00pm **The discount rate in practice
and in different countries**

Ben GROOM, associate professor in environment and
development economics, London School of Economics

Lynn KAROLY, president, SBCA (Society for Benefit-Cost
Analysis); professor, Pardee RAND Graduate School

Massimo FLORIO, professor of public economics and Jean
Monnet chair, EU industrial policy, University of Milan

Questions from the floor

4:00pm BREAK

4:15pm **ROUND TABLE
What is the best discounting system?**

Roger GUESNERIE, president of the roundtable,
professor, Collège de France; honorary president, Paris
School of Economics

Émile QUINET, emeritus professor, Paris School of
Economics

Arnaud BUISSE, head of public policies, French Treasury
(DG Trésor)

Joseph LOWE, head of economics branch, Public Spending
Group, HM Treasury

Burt PORTER, senior economist, Council of Economic
Advisers, The White House, USA

Davide SARTORI, JASPERS (Networking and Competence
Centre), European Investment Bank

5:45pm CLÔTURE

Roger GUESNERIE, professor, Collège de France;
Honorary President, Paris School of Economics

Christian GOLLIER, professor of economy, University
Toulouse 1 Capitole and London School of Economics

