

# Financial models

The financial models are to intended to familiarize the user with the basics of project finance and financial simulations for a highway PPP project and to better understand the key parameters which affect the financial viability of a highway project.

Whilst they allow a first-level analysis of a proposed PPP project, they are not suitable for the detailed and specific project evaluation required for PPP project development by the public sector. For such project preparation, public authorities would need to apply the more comprehensive financial models available from specialized audit companies and banks.

The Toolkit presents two financial models

- The **graphical model** uses simplified project data and a graphic format to familiarize non-financial users with the basics of financial simulations. The model allows to visualize real time impact on project cashflow of adjustments in fourteen key project assumptions.
- The **numerical model** allows a more detailed financial evaluation. It enables more developed financial variables and results to be understood and could be used by the public authority for an initial project analysis of possible PPP options at pre-feasibility level, to assess possible toll rates and subsidy levels.

Financial terms are described in Module 2 -> Financial Evaluation.

Both financial models have been audited for mathematical accuracy in 2009.

User guides are available for both models, accessible from left-hand menu.

## IMPORTANT

BEFORE OPENING THE FINANCIAL MODELS, THE USER MUST VERIFY THAT THE SECURITY LEVEL IN EXCEL IS SET TO **MEDIUM** (Tools>Macro>Security) IN ORDER TO ACTIVATE MACROS.  
ON OPENING THE EXCEL FILE, THEN CHOOSE "**YES**" TO ENABLE MACROS.

## Graphical model

The graphic simulation tool has been developed to familiarize the user with the basics of financial simulations for a highway PPP project. It presents in graphic form the principal financial features of a project company and their sensitivity to a range of key assumptions, through real-time adjustments of the cashflow graphs.

This simplified model has been designed for educational purposes only and is not suitable for project analysis at any level.

- This Tool uses only one currency (USD) and does not thus allow for exchange rate issues. This is a key simplification of the model since currency effects may have

a considerable impact on project cashflows and can play an important role in the financial sustainability of a PPP project, especially in developing countries.

- The model uses only annual data, which means that all the figures are calculated for each year of the concession period.
- Nominal interest rate (real interest rate + inflation rate) is used to calculate interest. The construction period is variable from 1 to 5 years.

## Numerical model

The numerical financial model is principally intended as a more advanced educational tool for financial evaluation of PPP projects in order to allow a better understanding of the key parameters affecting the financial viability of a highway project. However, the model allows sufficient range of input data to make it suitable for initial project evaluation at pre-feasibility level.

This financial model provides financial statements by a would-be concessionaire to analyze the construction and operation of a highway concession under a Build-Operate-Transfer (BOT) scheme. The basic data provided with the model has been obtained from real highway concession contracts in Eastern Europe.

It has been developed on a project finance basis, i.e. a non- or limited-recourse financing where lenders rely primarily on the cash flows generated by the project for debt repayment. Revenues are composed of tolls paid by road users and subsidies provided by the Public Authority.

The Assumptions sheet of the model contains all the key parameters and data input entered by the user. The model provides a user-friendly interface where most figures can be adjusted using the scroll bars with a corresponding real-time change in the financial results. Principal data entry ranges and consistency between data are checked by the model in real time, which may trigger comments and warnings for the user. However, the extensive range of possible input combinations prohibits all potential data inconsistencies being shown and the user must remain attentive to data entry values.

The numerical model allows the entry of the following key parameters:

- four categories of vehicle with detailed assumptions of growth
- detailed operation costs based on real cases
- three different debts in the financial structure
- two types of subsidy paid by the Public authorities: operating subsidy and/or subsidy of investment
- three accounting methods for depreciation (Linear, Progressive, Decreasing)

The financial model is not intended to provide project-specific financial modeling. The World Bank absolves itself from any liability, in the event that such models are used and relied upon by third parties in connection with any project or transaction. For such project preparation, public authorities would need to apply the more comprehensive financial models available from specialized audit companies and banks.