

1. Economic parameters

Overview

Target

The first spreadsheet brings the socioeconomic data (Gross Domestic Product (GDP) population) introduced by the user into the Vensim model. The GDP per capita is calculated in the base year as well as over time.

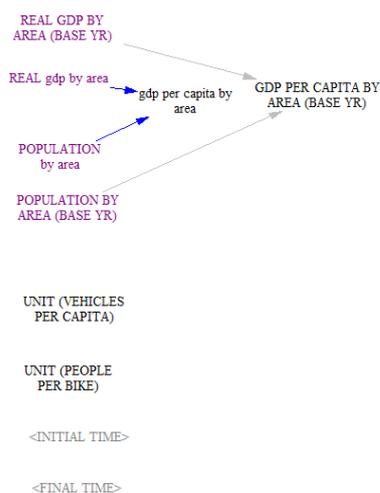
The view also includes some unit variables needed in the model and information on the initial and final times, as entered by the user into the ForFITS Excel file.

Structure

The socioeconomic parameters (GDP and population) are located on the top of the spreadsheet.

Figure 1.1 shows the Vensim sketch of the view

Figure 1.1 Vensim sketch of the view "economic parameters"



Detailed description of the view

Inputs

The GDP and the population both are specified by service and area. Both are exogenous inputs entered by the user ("Socioeconomic data" sheet of the ForFITS Excel file). Two other user inputs are the base year values and their evolution over time. The latter are entered by evolution indexes that define the growth of the relevant parameter under consideration.

The exogenous inputs "INITIAL TIME" and "FINAL TIME" are the initial and final projection times set by the user in the excel data file ("Modelling switches" sheet of the ForFITS Excel file). The default values are from 2010 (initial time, i.e. base year) up to 2040 (final time).

Outputs

GDP and population are used to obtain GDP per capita which is one of the main drivers of the ForFITS model: they have a major influence on the generation of transport demand.

Several factors that determine transport activity over time are expressed as functions of a country's GDP per capita:

- People per active bike (view "demand (passenger, nmt)");
- Ownership of personal passenger road motor vehicles (view "demand (pass. personal motor road)");
- Ownership of personal passenger LDVS (view "demand (pass. personal motor road)");
- Ownership of personal passenger VESSELS (view "demand (pass. personal vessels)");
- Share that public transport represents in the total pkm of public transport and personal passenger vehicles (view "demand (passenger, public)");
- Share of air transport pkm in the total pkm including personal vehicles, public and air transport (view "demand (passenger, air)");
- Tonnes lifted in large-freight service (view "demand (large-freight, GDP and structure)");
- Share of light vehicles in total road freight vehicles (view "demand (light road freight vehicle shares)").

Passenger travel elasticities in relation to the cost of driving also depend on the value of GDP per capita. The evolution of GDP per capita, in itself, also impacts (albeit with a small effect) the average vehicle travel of passenger vehicles.