

3 The Model

The model described in the following follows the basic logic of national accounting as put forth in section 2.1.1.

Firstly, non-financial transaction flows (current accounts) are set forth, including flows determined by behavioural equations for agents (e.g. consumption, investment), exogenous variables (e.g. exports, imports), and flows implied by stocks of the previous period (e.g. interest or dividend payments). Outcome is primarily observed as change in GDP and NLNB.

Secondly, financial transactions (accumulation accounts) are depicted, including behavioural equations (portfolio choice), and variables exogenous in the model (revaluation of assets, amount of balance sheet extension). Outcome is observed by the actual holdings of different assets by agents, and their net worth at the end of the period, thus obtaining the closing balance sheet for this period (the opening balance sheet for next period).

The method to calibrate the model is as follows: firstly, we reformulate the equations taking the variables as fixed (taken from past NASA data 1995 - 2014) and the parameters as the unknowns. We then calculate parameter values and obtain trends for the parameters for these time series for the past, which are shown for the most important parameters below. We then use past trends to forecast the development of the parameters into the future. In most cases, we have used the simplest possible forecasting method for the parameter - taking the last value available in the data and keeping it fixed. This was due to 1. Time restrictions in the model construction stage due to the large amount of data work we had to manage, but also 2. since we do not want to distort the dynamics of the model too much by strong assumptions on the trends of the parameters. Since the trends in most parameters are very stable, it is possible to get a look at the dynamics of the behavioural assumptions in the model itself, not influenced too strongly by the trends in parameters.

After constructing the business as usual scenario, we obtain the effects of the policy measure by comparing the scenario simulation with the business as usual scenario. Currently, the forecasting horizon of the model runs until 2025.

Notation: below, parameters are denoted by lower case Greek letters, variables by capitalised Latin letters. Index t signifies time, index s economic sectors (institutional units), *direct* means the direction of payment: received (RECV) or paid. The index *finpos* relates to the financial positions of a sector, i.e. whether the financial instrument is held as an asset (ass) or as a liability (liab). The subscript *fa* relates to the different classes of financial assets in the model.

3.1 Non-financial Transaction Flows

3.1.1 Behavioural Equations and Parameters

The core behavioural equations that decisively regulate the model behaviour are partly constructed in reference to the literature, mostly based on Godley and Lavoie (2007), or specified according to empirical evidence put forth in Schmelzer (2015). Most importantly, for our empirical SFC model, we obtain the parameter values directly from national accounting data. Since this is a very preliminary version of the model, the extrapolation procedures for parameter trends are work in progress, and are certainly open to discussion.

Household Consumption C_t is taken as a fixed fraction $\alpha_{1,t}$ of disposable household income INC_t as determined in equation 16 plus a fixed fraction $\alpha_{2,t}$ of household's last period's holdings of deposits DEP_t (their primary means of payment, and their storage of liquid means for