Macroeconomic models

A wide range of macroeconomic models has been developed over the years. In Denmark, the best known are probably ADAM and SMEC. ADAM[88] was developed by Statistics Denmark and is the main model used by the Ministry of Finance. SMEC[89] is used by the Economic Council, also known as the Wise Men, who draw up half-yearly reports on the Danish economy and publish policy recommendations. The National Bank also has its own model, MONA[90] (MOdel, NAtional).

All of these models are based on large numbers of equations that describe behavioural relations, e.g. patterns in household consumption and corporate investment.

Structure of the models

As mentioned above, the strength of these models is their ability to cope with large numbers of equations and huge amounts of data. ADAM consists of over 3,000 equations, SMEC of approximately 600 and MONA of more than 300.

In order to come up with results, the equations need input. This input consists of what are known as the exogenous variables. The results generated by the models are called the endogenous variables (see Figure 11.13).

Figure 11.13 *The structure of the model*

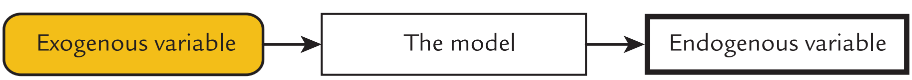


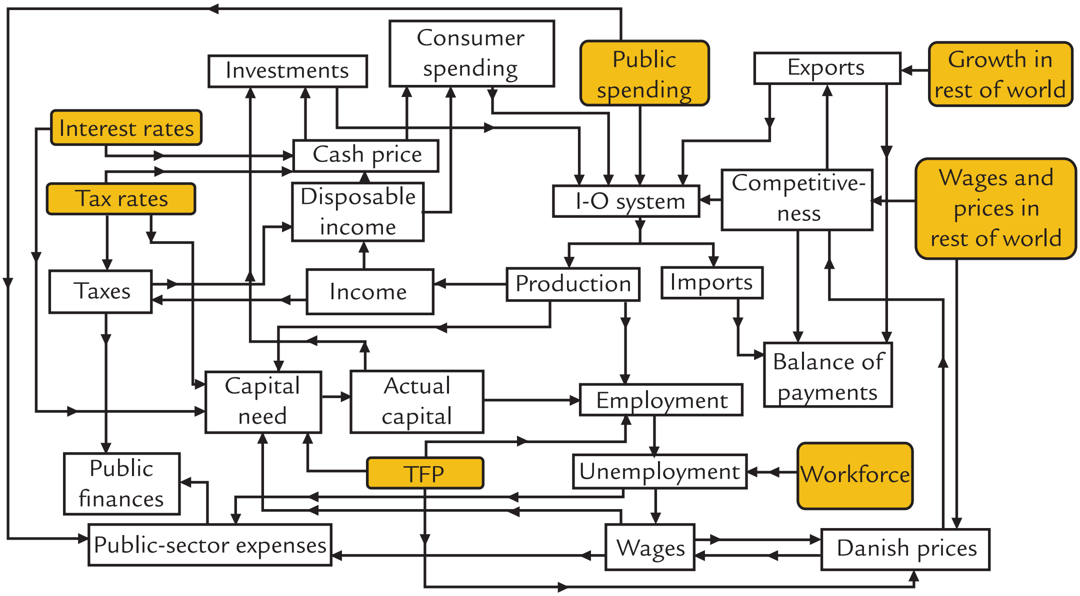
Figure 11.14 shows the structure of the SMEC model in simplified form. The orange boxes represent the exogenous variables (just as in Figure 11.13), while the others represent the endogenous variables. The arrows represent the equations and indicate the flow of causality, e.g. growth in the rest of the world is an exogenous variable and has an effect on exports, which are therefore endogenous.

88 ADAM stands for Annual Danish Aggregate Model. The model is described on the Statistics Denmark website (www.dts.dk).

89 SMEC stands for Simulation Model of the Economic Council. The model is described on the Council's website (www.dors.dk) and in Grinderslev and Smidt, 2007.

90 The model is described in Danmarks Nationalbank, 2003.

Figure 11.14 *The key interconnections in SMEC*



Source: Grinderslev and Smidt, 2007

ADAM, SMEC and MONA were designed to make forecasts in the short and medium-long term – a few years' hence, in other words. Their strength lies in their ability to indicate trends in the outlook for **actual** GDP.

Long-term macroeconomic models

When ministries, the Economic Council and others want to make long-term economic forecasts covering several decades, they all use the DREAM model.[91] Originally developed by Statistics Denmark in the late 1990s, DREAM is now operated by an independent body.

Unlike ADAM, SMEC and MONA, DREAM is based on long-term econom-ic theory, and assumes that prices and wages will realign until the economy is in equilibrium. It is well suited to long-term forecasts, including of **potential** GDP.

91 DREAM stands for Danish Rational Economic Agents Model. It is described at: www.dream-model.dk.