

Figure 3-41 Run 3-5: behavior of the capital sector when the fraction of capital allocated to obtaining resources is increased from 0.05 to 0.35 with other inputs at their standard values.  
Note: Scales for IOPC, SOPC, and IO have been changed from their normal values.

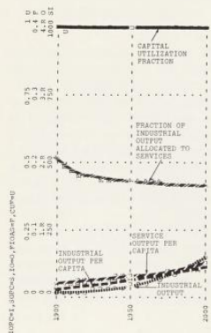


Figure 3-42 Run 3-6: behavior of the capital sector when the service capital-output ratio is increased from 1 to 2 years with standard inputs

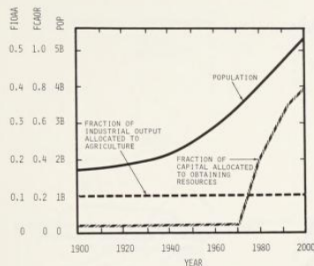


Figure 3-43 Driving functions for capital sector experiencing increasing resource costs

The consequences of increased resource costs are shown in Run 3-7 (Figure 3-44). When FCAOR rises above 0.2, the industrial capital investment rate ICIR is depressed below the depreciation rate ICDR, forcing industrial capital IC to decline. This behavior illustrates the effect of the resource crisis on the capital sector. Declining resource reserves cause increased costs and force a reallocation of capital out of production and into obtaining resources. This reduces the industrial output and thus decreases the amount that may be invested in future time periods, leading to lower industrial capital and output in the future. A resource crisis is not abrupt and does not cause capital to lie idle. At each point in time, the industrial system is producing the maximum amount of material output possible. However, through time the amount of possible output declines.

In Figure 3-45 we specify driving functions that represent the effects of a rising need for investment in agriculture. All inputs are the same as those employed in the standard capital run except for the fraction of industrial output allocated to agriculture FIOAA, which rises from 0.1 to 0.3 between 1970 and 1980. An increase in FIOAA might result from a loss of arable land, from declining agricultural productivity, or from decreasing the marginal return to capital invested in agriculture.

The output from the simulation of the model with this change is shown in Run 3-8 (Figure 3-46). As FIOAA begins to rise, industrial output IO is redirected from investment in services and reinvestment in industrial capital; thus industrial output IO