

Figure 7-39 Run 7-29: equilibrium through adaptive policies

Adaptive technological policies that increase resource recycling, reduce persistent pollution generation, and increase land yields are combined with social policies that stabilize population POP and industrial output per capita IOPC. The technological advances in recycling, pollution control, and land yields are assumed to be effective only after a delay and to require capital for their development and implementation. As in the adaptive technological runs described in section 7.5, additional technologies are assumed to be implemented in 1975. These policies lower resource costs, decrease the effects of air pollution, and reduce land erosion. The resulting model behavior reaches equilibrium because the stable population and capital reduce the need for new technologies. Thus the newly implemented technologies are less costly, and the delays in their development and implementation are less critical to their effectiveness.

in Run 7-29 that stabilize industrial output per capita. When industrial output per capita deviates from the desired level, the consumption of industrial output is adjusted to offset the discrepancy, changing the amount of industrial output available for reinvestment as industrial capital. This change in the industrial capital investment rate changes the level of the capital stock, which directly affects the production of industrial output. Thus the amount of industrial output produced each year is adjusted to ensure that actual industrial output per capita is equilibrated to the desired industrial output per capita.

In Run 7-29 population POP stabilizes at 5 billion people in the year 2050, and industrial output per capita IOPC levels off at a value near 350 dollars per person-year in 1990. The stabilization of population and industrial capital reduces the pres-

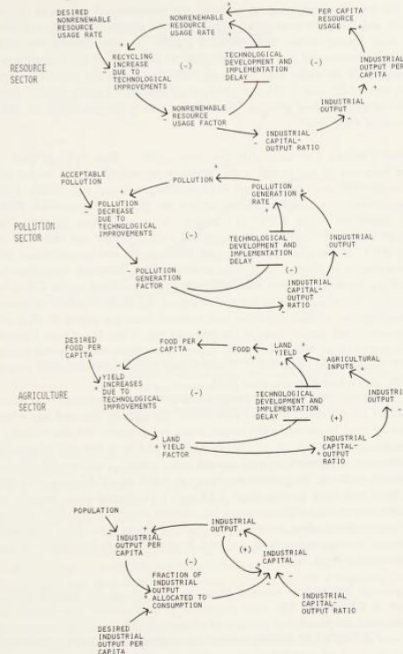


Figure 7-40 Structural additions to achieve equilibrium through adaptive technological and social policies