

ABSTRACT

The research constructs alternative 8 sector growth paths for Jamaica over several 5 year economic horizons, using the current account input-output data available at 3 year intervals over the decade 1957-66, and one incremental capital matrix, B, developed here. Different criteria (objective functions) are used - maximum consumption, maximum value-added, and the one formulated to derive turnpike theorems - maximum value of the terminal capital stock as the terminal year is moved into the distant future. Despite this normative framework, the work attempts to assess the evolution of the production structure of the Jamaican economy over the decade.

The "optimal" growth paths are compared with equivalent 5 year trajectories of the actual economy, using the usual macroeconomic aggregates, bauxite depletion as well as 3 distance measures to define "nearness". The conclusion is that none of the optimal paths were very near to the actual economy's, but the more the parameters which determine final demand in the turnpike models are set to those of the actual economy's (closures), the nearer are the resulting output trajectories. These closure parameters have more dramatic effects on the long run turnpike growth rates (the Von Neumann maximal rates) than the variations in the A matrices over the decade. Thus, the assumptions about consumption, investment and trading behaviour are crucial and 3 different closures are studied.

The maximum consumption model uses the optimal turnpike configuration as its terminal lower bound, needed

to prevent myopic exhaustion of the capital stock. This model generated much higher consumption yields than the straight drive to the turnpike ("the turnpike models"). This is achieved by its ability to vary final demand relative to sectoral output. That is, no closure assumption is imposed. (One strategic consequence to this result is that it makes the search for a desirable set of input-output coefficients depend on the economic horizon as well as on the macroeconomic objective, since the corollary to varying final demand with constant A is to vary A and fix final demand relative to sectoral output.)