Abstract

This paper analyzes the sustainability of the economic growth of two trading economies, which both use a non-renewable resource as a productive input. Innovation is only carried out in one country and the resource is harvested in its counterpart. Bilateral trade is the channel through which the natural resource is exchanged for innovations. These inventions are the engine of the economic growth in the two countries. The resource is an essential input in the growth-engine innovative sector, what the new growth theory calls a resource growth-essential. The problem is stated as a dynamic two-country trade model between the technological leader and the resource-dependent economy.

Economic growth is sustainable if the reduction in the non-renewable resource is compensated by the technological progress in the form of a larger increment in the number of intermediate goods. The growth rate in the leader economy equals the growth rate in the follower plus the growth rate in the terms of trade. Thus when both countries grow at the same rate the terms of trade remain constant. The gap between the two countries growth rates is exclusively determined by the ratio of the final output elasticities of labor and natural resource. The country with the greater ratio will show the faster economic growth.