

The economic model used in this study consisted of three basic types of components: (1) product supplies and factor demands for all firms in individual industries, (2) aggregate product demand and factor supply functions, and (3) the number of firms in each industry.³ Changes from outside the region that affect any of these components can have substantial effects on regional adjustments at all levels in the economic structure of the region. Primary causes of this are changes in the prices of products and factors which occur at the aggregate level but still have an important impact on product output and resource input decisions made by individual firms. Firm adjustments resulting from changes at the aggregate level may result in changes in the number of firms which lead to additional changes at the aggregate level involving still further price adjustments. An equilibrium would exist when all product and factor prices and the number of firms in the industry are consistent with their total demand and supplies.

Changes in the demand for labor were expressed as a function of changes in shifters of factor supplies, product prices, factor prices, firm production possibilities, and the number of firms. Changes in the number of firms were then expressed as a function of the same shifters as well as shifters of firm entrepreneur supplies. A discussion of the effect of an increase of some critical factor in a region on employment and the number of firms in the region will illustrate how the economy of the region operates.

If water is a critical factor in the production of products in any industry in a particular region, an investment program to make more water available would influence the economic structure of that industry and the region. First, a shift in the supply of water would make more available at a lower price. More of the critical factor available at a lower price would increase returns to each firm in the industry and encourage the entrance of new firms. A greater supply of products from that industry would result. Increases in the demand and quantity of the other factors that are used in the production of the industry product will also occur. Finally, increases in the demand for labor (employment) used in the production process will result.

Ultimately, the entrance of enough firms will result in demand increases for the critical factor water and cause an increase in the price of this factor. Some firms would then leave the industry

³ For a complete mathematical and economic discussion of the model used for the analysis see Cato [8].