STATE DEVELOPMENT POLICY AND THE TRANSITIONAL ECONOMY

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The increasing complexity of our society has placed a burgeoning responsibility upon state and local governments for effective economic development planning decisions based upon timely, adequate information. Many times this goal is not attained. For many states, the lack of an adequate development plan has resulted in major decisions being made by default. The purpose of this paper is to examine such a situation in detail and to evaluate quantitatively some of the effects by age, color, and sex upon the work-eligible population and associated labor force participation rates. Based on these results, some comments will be made on appropriate state policy for transition periods. This objective is considerably different in scope and application from most national studies of labor force participation.

This study is divided into four parts:

I. A general review of group employment and labor force changes wrought by the transition within Alabama using shift analysis on 1950 and 1960 Census data, and a review of Alabama state development policies during that decade.

II. Regression analysis of available time series to identify the variables best suited to determine the effect of statewide labor market tightness on group labor force participation and analysis of peak-to-peak capacity utilization to determine the relative importance of general transition trends within Alabama for the period 1958 to 1969.

III. Cross-sectional regression analysis, using 1950 and 1960 Census data, to develop group-specific local labor market variables to portray quantitatively some of the local employment opportunities facing each population group during the transition and to determine policies that would have optimized the group labor force participation response to these local conditions.

IV. Summary and recommendations for future state development policies.

GENERAL REVIEW OF THE 1950-1960 TRANSITION

Alabama Development Policy During the Period

During the first five years of the 1950-1960 decade, the Alabama State Planning Commission was responsible for planning economic development within the State. In the last five years of the decade the name of the agency was changed to the State Planning and Industrial Development Board (currently the Alabama Development Office). A major change in financing this agency was made when the same change occurred in 1955. Prior to that date, the Commission received an appropriation only after all other appropriations had been made from the General Fund. After 1955 the Board received a regular biennial appropriation. Although the basic planning organization, with an industrial development section, a city planning section, and a drafting and reproduction section, remained the same, the focus of economic development efforts changed with each change in State administration. [1]

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State development efforts in the early 1950's were directed informally toward creation of local industries using local and State capital. These efforts were largely unsuccessful due to lack of recognition of the magnitude of the transition, and insufficient supply of investment capital to create the jobs required for absorption of the available labor supply, and lack of State capability to retrain the type of unskilled workers being released from the farm.

During the period 1955 to 1957 the Alabama Business Research Council (ABRC), composed of executives of leading business firms in Alabama and faculty members in The University of Alabama School of Commerce and initially sponsored by the Committee for Economic Development, prepared a series of formal reports analyzing the State's manufacturing economy and the operating methods of State and local industrial development agencies. Recommendations on the best types of industries to seek and the methods to attract them, and some projections of future demand for skilled personnel were also made. This more formalized effort resulted in the planned attraction of several industries having high capital-to-employment ratios and skilled labor requirements. Again, the State's efforts resulted in a further mismatch of available employment and the burgeoning unskilled labor supply.

Throughout the decade the State planning agency never developed a formal, nor even an informal, master plan that recognized or grappled with the massive problems of the agricultural decline. The following paragraphs will show some of the effects upon Alabama's economy of development policies that were the result of failures to understand the scope of the transition and either to design programs or to provide resources necessary to meet the problems as they developed.

A General Overview

During the period from 1950 through 1960 Alabama experienced the most comprehensive portion of its transition from an agricultural to an advanced nonagricultural economy. In ten years farm income had declined from 15 per cent to 5.8 per cent of personal income within the state. Within the same period more than 348,000 people age fourteen or older[2] left the farm population, a decline exceeding 56 per cent of the 1950 farm population within this age group. Farm employment dropped even faster as 183,000 jobs were eliminated. This number represented 59 per cent of the total 1950 farm employment.

Alabama had also become an urban state by 1960; more urban, in fact, than one-third of the other states. The proportion of the population age fourteen or older living in urban areas had increased from 46 to 56 per cent. A portion of this change, 3 percentage points, can be attributed to changes in Census area definitions, but the remaining 7 percentage points indicate a shift into urban areas of more than 180,000 people age 14 or older. Adjustments for Census definition also reveal that the rural-nonfarm proportion of the population age 14 or older had risen from 24 to 32 per cent. As a result of these changes, only 13 per cent of the work-eligible population remained on farms in 1960.[3]

Areas of Employment Transition[4]

A more detailed review of the transition shows that the decline in employment of rural farm residents appeared to affect the age group 25-44 most severely, with the male population being more severely affected than the female population. The white males in this age group experienced the greatest absolute decline in this category of employment. Nonsingle (married, widowered, or divorced) males age 25-44 apparently lost most of these jobs and

they experienced a higher rate of job loss than females in the same category. In both rate of change and composition of change, employment of white females this category appeared to be affected least.

The rural nonfarm areas of Alabama showed a greater rate of increase in employment than the urban areas, but there was a great disparity in increases for different population groups. The rate of increase in rural nonfarm female employment rose twice as fast as the male rate. Again, the white female's employment opportunities appeared best, rising at more than twice the rate of any other group. The rate of employment increase for white females was 21 times the rate of white males. For both sexes, the greatest rate of employment increase was for the age group 45 and older, although employment of nonwhite males in this age group declined.

The large increase in employment filled by white females appeared to indicate a misdirection of State economic development policies. More than 29 per cent of all rural farm job closings affected nonwhite males, while only 3.6 per cent of new nonfarm employment was filled by this group. The result was a net loss of 45,468 jobs--a decline of 21 per cent in total nonwhite male employment! This decline was experienced in the primary work ages of 14-44. Concurrently, the nonwhite male work-eligible population decreased, but only 7 per cent. All of this decline was experienced by age group 14-44. The white males also were pinched severely. Net rise in white male employment was less than 2 per cent, while the work-eligible white male population increased by 9 per cent. The white male age 14-44 experienced a net employment decline of 20,917 jobs.

In net terms, for each white male who found a new job, 6.1 other white males eligible to work were left idle. For each nonwhite male who left the work-eligible population, approximately 2 nonwhite male jobs were eliminated. Nonwhite females faced similar competitive pressures. The older white females appear to be the persons who benefited to the greatest extent from the 1950-1960 economic growth policies. The effects of these employment development trends on the labor force participation rate (LFPR) and population movements became central questions in the analysis of State development policy for the period.

Single people lost heavily to nonsingle people in the competition for available new jobs during the 10-year transition. Nonsingle white women comprised 90 per cent of all women entering the labor force. Of the nonwhite women who entered the labor force, 90 per cent were nonsingle. Most of the female entries were in the age group 45 and older. The male employment picture is more confused. Except for nonsingle whites, large numbers of males removed themselves from the labor force. In net terms, 16 per cent of the white single males and 21 per cent of the nonwhite single males who were in the labor force in 1950 were not participating in the labor force by 1960. Of the approximately 8,000 nonwhite males leaving the labor force through a lower LFPR, 94 per cent were nonsingle and most were in age group 24-44. The white nonsingle males reaped the few benefits of this general exodus, since this was the only male category having net entries into the labor force! These nonsingle white male entries were concentrated in the age group 45 and older. These changes resulted in a much larger percentage of older married population in the total labor force by 1960.

The disproportionate increase in the nonsingle female and, to a lesser extent, the nonsingle male participation in the labor force is an excellent indicator of the maldistribution of new job opportunities relative to job losses resulting from the decline in agricultural employment. Nonsingle men apparently lost their jobs in the agricultural decline and took a greater share of

the available new male employment opportunities. Nonsingle white males were employed at the expense of both single males and nonsingle nonwhite males. The nonsingle nonwhite male filled the new employment that was offered before the single nonwhite did. A significant proportion of all male groups appeared to respond to lack of sufficient new employment opportunities by leaving the labor force. They simply stopped looking for work!

The older nonsingle white females suffered the least amount of lost employment in the agricultural decline. In apparent response to lack of new employment opportunities for their husbands, white females of all ages moved rapidly to deominate the developing female-oriented employment being offered. Nonsingle nonwhite females also entered the labor force more rapidly than single nonwhite women. This drastic labor force restructuring also affected the income of each group and of the State.

Effects of Income Differentials[4]

In Alabama, as in the Nation, median income of males is much higher, with white males having the highest income and nonwhite females the lowest. Maximum median income for both males and females is in the 35-44 age group. In terms of possible group opportunity for future income increases, the relative per cent change of median incomes could be considered one of the better available historical indicators.

In general, the fastest employment declines and highest total employment losses occurred among the farm residents having primary wage earning responsibilities as actual or potential heads of households. Males received the higher median incomes. White males had the largest in median income and lost relatively more in the employment transition than other groups. The age groups with the highest median incomes also experienced the greatest employment changes and the highest rates of population decline. The greatest employment opportunities were developed for the older population, much of which could possibly be regarded as a source of secondary or supplemental income for the family. The white females' rate of income increase was the smallest of any group, although their developing employment opportunities were the highest in all State areas.

The detailed analysis to this point has shown that the character of the economic transition within Alabama seems to have resulted in a specific instance of a tendency earlier noted nationwide by Bowen and Finegan.[5] Many female-oriented, labor-intensive industries locating in Alabama during this period obtained their initial wage cost advantage by short-term employment of married women seeking a supplemental income.[6] However, the concurrent precipitous decline in male employment opportunity resulted in the wife being trapped by circumstances into providing the only regular income to maintain family expenditure levels. Employment originally had been at a low wage and economic and social forces combined to keep females working at the low wages.

The effect of these labor force participation rate changes on personal income in Alabama is staggering. Some measure of it is obtained by applying the 1950 male labor force participation rate to the 1960 work-eligible male population and comparing this total to the 1960 male labor force. This estimate shows that 60,400 men were lost (from the labor force) due to declining male labor force participation rates. Supplying jobs paying the median male wage to these 60,400 men instead of supplying the same number of female jobs would have increased personal income for the State by more than $109,500,000. The cost of providing females rather than males with employment during this transition period appears to be economically high in terms of lost income, displacement of the male as economic head of the household, and future econ-

omic growth.

An additional effect was upon the movement of population. Migration patterns appear to coincide with previously indicated changes in employment opportunities and proximity of new employment openings. As discussed earlier in the analysis of rural farm employment decline, both male and female nonwhites faced an equally bleak future on the farm and would be more likely to move than the white males and females. The bleakest prospects were for the age groups 14-44. The older white females had the best prospects for retaining rural farm employment and outstanding prospects for new employment in urban and rural areas. Although age-specific migration data were not available, the aggregate work-eligible nonwhite population age 14-44 actually declined, reflecting a heavy outmigration of younger workers. The white work-eligible population grew at approximately half the national average of 18.5 per cent, with most of this growth due to increase in the age group 45 and older. During this period Alabama experienced a net outmigration of 144,000 white and 224,000 nonwhites. The former is 7 per cent and the latter is 23 per cent of the total 1950 noninstitutional state population for the respective groups. Most of this outmigration was among the age groups under 45.

Apparently, job opportunities for the female cannot normally substitute for job opportunities for the male, especially for younger workers. When the work-eligible population greatly exceeded the employment opportunities offered, people moved to areas offering more opportunity. This was particularly true for the younger workers. Males in Alabama had to move their households if they wished to retain their positions as economic heads of the household. Many younger males made this decision to move. The decision to leave was probably further reinforced by the disparities in median incomes earned by various groups of the population. This general overview of the transitional period has shown the scope of the labor force, employment, and population changes. Parts 2 and 3 of the paper are concerned with defining some variable components of State economic development policy during this period.

TIME SERIES ANALYSIS[7]

The original objective of the time series regressions in the TVA project was to determine those variables best suited to predict labor force participation rates. Various measures of labor market tightness and trends to the structural transition within Alabama during the period 1958 through 1969 were tested. The period selected was dictated by availability of data in Alabama to serve as a proxy for the conditions indicated by previously cited research and conclusions from the general review. All variables in each category were regressed singly against labor force participation rates (L/P) and the predictive combination of variables for all categories was selected by optimizing three basic multiple regression equation requirements for predictive parameters.

1. Low multicollinearity
2. High coefficients of determination (R^2).
3. Independence from the dependent variable L/P.

Portions of the UCLA biomedical regression programs were used to perform the simple and multiple regressions. Multicollinearity was minimized by applying techniques described by Goldberger.[8]

The thirteen independent variables tested were divided into three basic predictive categories, aggregate labor market tightness, structural transition variables, and secular trend variables. The variables are defined below. Labor market variables were also lagged by two months in additional tests.

1. Labor Market Tightness Variables

$(U/L)_t$ = Aggregate Unemployment Rate in Month t.

$(U/P)_t$ = Aggregate Unemployment Ratio in Month t.

$(E/L)_t$ = Aggregate Employment Rate in Month t.

$(E/P)_t$ = Aggregate Employment Ratio in Month t.

$(MH/40)_t$ = Average Weekly Manufacturing Hours Worked in Month t as a Percentage of Standard Work Week.

$(X/P)_t$ = Unemployment Compensation Exhaustions Ratio, Month t.

P_t = Population 14 Years Old or Older in Month t.

2. Structural Shift Variables

$(E_{ag}/E)_t$ = Ratio of Agricultural to Total Employment in Month t.

$(E_{nag}/E)_t$ = Ratio of Nonagricultural to Total Employment in Month t.

$(E_m/E)_t$ = Ratio of Manufacturing to Total Employment in Month t.

3. Secular Trend Variables

T, T^2, 2 Log T where T = 1 . . . n, and n is the month under investigation.

A major departure in the use of these variables is that they are not seasonally adjusted. While many advantages are gained with adjusted data, their use here would have served to screen some of the transition's effects under investigation. In Alabama large numbers of people enter the labor force and are employed during planting and harvesting seasons. These people do not participate in the labor force during the rest of the year. Increasing farm mechanization has caused the seasonal employment to decline drastically, forcing many people to hunt for work elsewhere. During the period under investigation the influences of this cycle need to be measured to determine the effects of its decline. Unadjusted data appeared to represent the best available solution to the problem.

Results of Time Series Regressions

The time series regression isolated two variables best suited for predicting short-run effects upon the labor force participation rate, a labor market tightness variable (Aggregate Unemployment (U)/Aggregate Labor Force (l)) and a structural shift variable (Aggreate Agricutlural Employment (E_{ag})/ Total Employment (E)).

The equation for optimizing the regression factors discussed earlier is: $(L/P)_t = .28217 + .502^* (U/L)_t + .392^{**} (E_{ag}/E)_t - .0008^{**}T + .06^{**}T^2$

*Statistically significant at .1 level.
**Statistically significant at .01 level.

N = 144

R^2 = .78

The positive coefficient for U/L reflected the strong movement of the married white females into the labor market at the expense of other groups and efforts by the males to find employment in an unfavorable market. The high statistical significance and fairly large value of the coefficient for E_{ag}/E corroborates the earlier analysis of the overwhelming effects of agricultural decline. Effects of the agricultural decline outweighed effects of new employment opportunities and produced a drop in the aggregate labor force participation rate. People responded more to the loss in agricultural employment than to the gains in other areas.

Additionally, effects of the agricultural cycle's decline upon labor force participation rate can be estimated by an approach similar to the peak-to-peak techniques used by the Wharton School Econometric Forecasting Unit to measure capacity utilization. The major assumption used in this technique is that peaks of participation are of equal strength. For Alabama, the peaks of agricultural employment and labor force participation coincide closely and appear to be approximately equal in strength for the period 1958-1969. Other effects of the overall agricultural decline can be calculated by determining the annual decline in the average annual ratio E_{ag}/F and applying this difference into the regression equation in a manner similar to the technique for estimating cyclical effects.

This analysis of time series data showed that the cyclical and average components of the agricultural decline were shifting in relative importance. Initially, increasing mechanization exerted the strongest influence on decome relatively stabilized by 1969. Workers displaced by mechanization were probably less skilled laborers. As such, more training and adaption to annual work would be required for them to obtain nonagricultural jobs. The increasing relative importance of the average employment decline probably reflected an increasing movement of farm managers and tenants out of the labor force as marginal farms were eliminated. Consolidation of marginal operations also appeared to reverse the trend of cyclical decline in the 1967-69 period.

The relative component shifts appeared to indicate a change in the type of employment released to find work in the nonagricultural area. Early the transition most of the people released were probably low-skill, low-income laborers who worked part of each year. In the last three years the preponderance of people released appeared to be accustomed to less cyclical employment. These people might have more skills and more potential investments in their rural area. A higher skilled person with less inclination to relocate was probably emerging by 1969 to seek jobs in the surrounding area. In 1960, however, the person losing employment was a lesser-skilled, cyclically, employed farm laborer. The change is important because the type of person most involved in the 1950-1960 agricultural decline influenced some of the results of the cross section regression.

CROSS SECTION REGRESSION ANALYSIS

Basic objectives of the cross section regression analysis were development of group-specific labor market variables, based upon the general analy-

sis, to determine what opportunities faced groups in the local areas and the group response to these opportunities. Data for all variables were obtained from the 1950 and 1960 Census. Tests were run by color and sex, but not by age. Variables for labor market tightness (U/L) and structural shift (E_{ag}/E) were developed in the time series study and were used here as short run aggregate response indicators. Group-specific variables were developed to test the conclusions of the general review as to the group's perception of opportunities.

New employment opportunity variables were designed to yield information on the responsiveness of the various groups to location and type of new employment and to define employment conditions encountered. The mean of the statewide group employment variable E(s) was to be used to determine whether the developing general county situation was better or worse than the developing group statewide opportunities. With the regression coefficient, this information could furnish a clue to the group's willingness to seek work outside the home county and why. The other two opportunity variables were to determine what types of county changes had more influence on each groups' labor force participation decision, the composition, E(r), or rate of change, E(r), and to determine what changes occurred. By considering the effect of all variables on each group, the multiple regression equation allowed determination of group labor force participation rate response to county labor market tightness, county agricultural decline, county and state employment opportunities, and changes in relative group labor supply in the county. The equation is:

$$(L/P)_i = a_o + a_1 (U/L) + a_2 (e_{ag}/E) + a_3(P_i/P) + a_4 E(s)_i + a_5 E(r)_i + a_6 E(c)i$$

with variables as defined below.

(1) New Employment Opportunity Variables

$E(s)_i = \dfrac{\Delta E/E}{K_i}$ Statewide Group Employment Variable

$E(r)_i = \dfrac{\Delta E_i}{E_i}$ County Group Opportunity Variable

$E(c)_i = \dfrac{\Delta E_i/E_i}{\Delta E/E}$ County Group Rate of Change Relative to County Rate of Change (Composition)

Key: ΔE = County Employment Change 1950-1960

E = County Employment 1950

E_i = County Employment 1950 for Group

K_i = Per Cent Change Statewide Group Employment 1960-1960

The subscript i denotes a particular group

(2) County Group Labor Supply Variable

P_i/P = Group Labor Supply Variable

Key: P = Population 14 years or older for county

Low coefficients of determination on the statewide cross sections resulted from the great disparities between counties. These counties are part of a State extending from the Gulf Coast to the Tennessee Valley and they have economic activity patterns ranging from urban-industrial to rural-farm. To obtain a higher R^2 and better investigate the influences of the variables upon group labor force participation rate, the State was divided into contiguous economic areas using trading and labor market areas and growth pole concepts. Principle considerations in defining the areas were:[9]

(1) Commuting patterns within and between counties

(2) Economic activity tending toward one or more cities or growth poles.

(3) Appalachian and Non-Appalachian counties.

Regression analyses seeking to optimize the six predictive parameters, by grouping contiguous counties, were run for the 1950 and 1960 data. Four areas were selected as the optimal set for predicting and analyzing group labor force participation rates. Growth regions, as previously defined, and the areas selected did not usually coincide. One area extended along the northern border of Alabama and centered on the missile and space industries in Huntsville and the chemical, tire, and metalworking industries in Decatur and Florance. Another area had a relatively mature, industrial economy centered on the iron and steel related industries of the Birmingham and Anniston-Gadsden areas. A third area followed the Tombigbee/Black Warrior River systems down the western side of the State and ended at Mobile and the State port facilities. The last area was the southeastern portion of the State centered on Montgomery and the Fort Rucker Military Base/Dothan areas. This area had large number of State and Federal employees. All but one area had extensive rural and agricultural segments with many small, labor intensive mills and factories.

Another possible research alternative would have been to release the contiguity constraint upon area selection, but this approach would not have been as applicable for analysis of the areal effects of State economic development policy. This alternative is planned for future research. Results of area regressions gave a much more complete picture of what factors influenced labor force participation by various population groups.

The results showed males lost by every quantitative measure used. They experienced a mean decline in county employment, except for the nonwhite male in the northern section of the State, and faced an unfavorable new employment composition in all areas of the State. Extremely unfavorable county employment conditions appeared to produce a high sensitivity to county labor market tightness in white males from agricultural areas. Lower white outmigration rates apparently had heightened the job competition more in these areas. Urban white males appeared to react to the statewide new employment situation more favorably. Also, as groups lost less relative to the county situation, the most important factor in group LFPR moved from county group labor supply to a very sensitive response to county labor market tightness.

Nonwhite males had a downward transition that was most extreme in the more agricultural areas. Their county group employment opportunity decline and unfavorable county employment composition were the more significant in these areas. In less agricultural areas the relative influences of variables changed to indicate that participation was most affected by county labor market tightness in the most urban area and by influx of peers in the only area offering rising group opportunities, the most northern area.

Females apparently experienced the only relative county gains during the transition. White females appeared to dominate any developing opportunities to a fantastic extent, especially in the more rural areas. In the more agriculturally oriented rural areas, white females appeared to respond to perceived statewide opportunities and to react more to the expanding county group labor supply. Expansion of white female employment at progressively lesser rates and with compositions offering somewhat lesser advantages relative to other groups again appeared to bring the group labor supply variable into the picture and to progressively diminish the influence of the statewide opportunity variable.

Nonwhite females experienced the smallest transition at county levels and were the least influenced of any group by the variables selected. This group gained more opportunities in the most urban area and lost more in the northern section of the State. Their county gains and losses seemed to run counter to those of the nonwhite male in the upper two-thirds of the State. Overall, their expanding opportunities failed to keep pace with their population growth. At the point of most extreme employment opportunity loss, the most northern area, the adverse influence of the group labor supply was significant. Areas of lesser transition showed that the agricultural decline and composition of the change were the only significant variables for nonwhite females.

SUMMARY AND RECOMMENDATIONS FOR FUTURE STATE DEVELOPMENT POLICIES

Alabama's 1950-1960 transition from an agricultural to an advanced non-agricultural society appeared extensive on the surface. However, the actual structural changes that occurred were far more extensive and, therefore, far more important in terms of drastic changes in the employment structure, of effects upon migration of different population groups, and of economic costs to the State. The age and sex-specific results of the employment mismatch were that nonsingle women provided the only regular income to maintain family expenditure levels in many families. Outmigration of all population groups and social acceptance of nonsingle women's employment was probably accelerated by the net loss of male employment opportunities. Most drastically influenced was outmigration of younger males.

A point basic to state planning during such a transition is that states or areas experiencing rapid change require development of unique policy options to channel the ebb and flow of the various social and economic cross-currents in desired directions. The regression results showed that Alabama's development efforts during this period should have been focused on more specific groups at a more local level in the more rural areas as the magnitude of the transition increased. People's perceptions apparently became more parochial under these conditions. The appropriate employment goal during the more extreme periods in more rural areas should have been to bring the right people to the right jobs. As the transition slowed and the areas of investigation became more urban, the goal should have been to bring the right jobs to the right people.

Thus, Alabama's informal policy of encouraging local development in the early 1950's was probably, unintentionally, a divergence from one of the better possible policies in terms of reaching the people most affected. However, local development of the magnitude and type required to absorb the labor surplus was not economically feasible. Failure to realize the scope of the transition combined with lack of sufficient local capital, lack of local retraining capability for the unskilled laborers, and movement into the State

of certain industries with high concentrations of female employment to cause a large scale employment mismatch. When State policy in the late 1950's changed to encourage development of imported, capital-intensive industry, the problem was still not solved. Locally available training and education facilities in declining areas were not geared to the developing employment opportunities in growth areas or to the scope of the retraining problem. Even if they had been, the number of jobs furnished were too low to absorb a still unrecognized, large scale labor surplus. The effects of the resulting employment mismatch cannot be completely measured.

In terms of future state planning efforts, these results suggest that transitional states should move their retraining and new employment assistance efforts to the local rural areas and focus upon groups most affected by the transition. As the transition slows, or areas become more urban, emphasis can be shifted to moving general employment opportunities to these local areas. Concurrently, development efforts in employment growth areas must also, of necessity, depend upon an accurate analysis of who needs help the most. Bringing in the wrong type of industry at the wrong time in the wrong place can destabilize the situation even further because desired population movements will be discouraged. Employment development plans must consider the structure of the demand for, and the supply of, labor. States with transitional economies should give much thought to their future development to avoid the situation portrayed in this paper.

FOOTNOTES

[1]Bureau of Public Administration, The University of Alabama, A Handbook of Alabama State Agencies, pp. 62-63.

[2]This is the working-age population by census definition. All Employment and labor force data in this paper fit this definition. An excellent discussion of the comparability of census and other data can be found in Bowen and Finegan, Economics of Labor Force Participation, 1969, pp. 7-15.

[3]Alabama Business Research Council, Transition in Alabama, 1962, pp. 15-30.

[4]Tabular data supporting this analysis will be furnished by the Center For Business and Economic Research, University of Alabama, upon request.

[5]Bowen and Finegan, Economics of Labor Force Participation, 1969, pp. 222-231.

[6]Comments of Dr. John F. Vallery, Associate Professor of Economics, The University of Alabama, on this aspect are deeply appreciated.

[7]Comments and suggestions of Edward P. Rutledge, Research Associate, Center for Business and Economic Research. The University of Alabama, on the statistical aspect of this paper are deeply appreciated.

[8]Goldberger, Econometric Theory, pp. 255-265.

[9]Most research for this was performed under separate CBER contracts to develop a dynamic economic simulation model for the State and to prepare the Appalachian Alabama Development Plan, 1970 for the Alabama Development Office.