SOME POLICY IMPLICATIONS OF LABOR MOBILITY IN THE SOUTH WITH SPECIAL REFERENCE TO THE TENNESSEE VALLEY REGION

Roger A. Matson and Wesley G. Smith*

U.S. Department of Commerce and Tennessee Valley Authority

I. INTRODUCTION

One of the major determinants of a region's ability to respond to investment in production facilities and infrastructure is the quality of its labor force. Importation of labor involves costs and is often in conflict with developmental objectives related to better utilization of the resident labor force. While some importation necessarily accompanies any developmental program, substantial utilization of resident labor is usually desired on both efficiency and equity grounds.

The extent to which the resident labor force of an area can be utilized during the development period is thus a matter of considerable interest. The more employable the resident labor force, the less will be the need to import labor. However, if the resident labor force is relatively unemployable, development will be accompanied by substantial labor importation if development occurs at all.

NATURE OF THE RESEARCH

As a part of its development planning program, the Tennessee Valley Authority has conducted a program of research in labor mobility during the past several years which has sought to identify the major sources of change in the employed labor force of the region. During this period, the region has experienced a marked income growth as a result of rapid industrial development. As a consequence, the experience of the Tennessee Valley in recent years provides an excellent opportunity for the examination of labor force response to economic development. In what follows, we seek to summarise some of our basic research findings to date.

NATURE OF THE DATA

Data for the analysis were obtained from the 1 percent sample of Old Age, Survivors, and Disability Health Insurance (OASDHI) records contained in the Social Security Administration's Continuous Work History Sample (CWHS). CWHS records are of two types: employee-employer or self-employed. The distinction emerges from the nature of the employment, and individuals often have both types of records.

The unique aspect of the CWHS data, which makes it so useful for labor force studies, is that the same individuals are included in the sample for all years of record in which they are in covered employment. It is therefore possible to trace the same individuals over time with respect to location (state and county) and industry of employment. Income earned from each job is available for analysis as are the age, sex, and race characteristics of the individuals included in the sample.

*Certain data used in this paper were derived from computer tapes furnished by the Social Security Administration. The authors did not at any time have access to nor did they receive information relating to specific individuals or reporting units. The views expressed in this paper are those of the authors and do not necessarily represent those of the U.S. Department of Commerce or the Tennessee Valley Authority.

Generally speaking, employee-employer records are available annually beginning in 1957 and self-employed records are available annually beginning in 1960. An exception to the above is found in the case of self-employed agricultural workers (farmers) where some data does exist back through 1955. The choice of a period of analysis is constrained by these data limitations.

Three separate data files were used in the analysis. The first use of the data by TVA was an examination of agricultural labor force mobility based on 1955-59 data processed by Michigan State University (1). Subsequently, TVA obtained 1957-63 data which had been processed by the Office of Business Economics from its file of employee-employer records (2). More recent studies have been based on the TVA file, which contains both employee-employer and self-employed records (3 and 4).

The TVA file provides the most complete picture of the employed labor force since it contains records of both wage and self-employment. This is particularly important in a region such as the Tennessee Valley where a larger than average portion of the labor force is still employed in agriculture. A major limitation of the TVA file is that the data are comparable only for 1960 and later years since self-employment records are not generally available for the earlier years.

In the subsequent discussion, reference will be made to studies based on all three of the above files. Major findings will be summarized under four headings: (1) labor force turnover, (2) contribution of migration to labor force growth, (3) rural-urban migration, and (4) interindustry mobility.

LABOR FORCE TURNOVER

Between 1957 and 1963, covered wage employment of the 125 Tennessee Valley counties increased by 22 percent, from 936,700 in 1957 to 1,142,000 in 1963 (2, page 4). The net change--205,300 workers--represents only the most obvious part of the change that occurred in the labor force employed for wages (employee-employer records) during this period.

A more graphic statement of the change may be found in the fact that of the 1,142,000 individuals employed for wages in the region in 1963, only 538,500 (47.2 percent) were employed in the same region in 1957--only six years earlier. Thus, more than half of the 1963 labor force consisted of "new" labor which was not employed in the region in 1957.

The bulk of the "new" labor consisted of entrants, i.e., persons with no covered wage employment either inside or outside the region in 1957. Entrants accounted for 403,500 (35.3 percent) of the persons employed in the region in 1963. The remainder of the "new" employed wage labor force consisted of some 200,000 immigrants who left covered employment outside the region between 1957 and 1963 and migrated to the area.

The above analysis is limited in that persons leaving self-employment (including farming) for wage employment are indistinguishable from persons obtaining their first wage employment (entrants) because of the lack of self-employment records. However, data from the TVA file for the period 1960-65 which does include self-employment records do not indicate any appreciable difference in the extent of labor force turnover. This data is available for the Tennessee Valley region, which includes 201 counties.

Leoprapai's analysis (5) of the composition of the Tennessee Valley region's employed labor force (including self-employed) indicated that between 11 and 13 percent of the total number of workers employed in any given year between 1961 and 1965 was not employed in the previous year. In absolute terms, between 200,000 and 300,000 new workers were entering the Tennessee Valley region's labor force per year during this period.

This fantastic rate of entry was offset in part by the loss of persons from the employed labor force (retirees) and some small net outmigration. As a consequence, the total employed labor force grew by only about 3.6 percent per year on average even though entry rates were running at 11 to 13 percent per year. Once again, the rate of change in the total labor force does not adequately reflect the actual amount of movement occurring within that labor force.

Between 1960 and 1965 the OASDHI covered labor force in the Tennessee Valley region (here defined to include 201 counties) increased by 325,800 persons or by 18.1 percent. Negro employment increased by 21.5 percent, while non-Negro (white) employment increased by 17.7 percent. The female labor force increased more both relatively and absolutely than did the male labor force. The employed female labor force increased by 169,000 (27.5 percent). while the male employed labor force increased by only 156,800 (13.3 percent). The importance of the female component of growth is illustrated by the following: white male employment increased by 13.3 percent and Negro male employment by 13.5 percent; white female employment increased by 25.9 percent while black female employment increased by 42.2 percent.

CONTRIBUTION OF MIGRATION TO LABOR FORCE GROWTH

As previously noted, some 200,000 persons were employed in the 125 Tennessee Valley counties in 1963 who were elsewhere employed in 1957. These inmigrants accounted for about 17.5 percent of the 1963 employed wage labor force. Balanced against these inmigrants were 160,300 outmigrants who were employed in the Tennessee Valley counties in 1957 but employed elsewhere in 1963. On a net basis, the 125 Tennessee Valley counties thus experienced a net inmigration of about 39,700 workers between 1957 and 1963.

Net inmigration of white males was very significant during the period, whereas there was a slight net outmigration of white females. There was a net outmigration of blacks, both male and female. Migration thus served to increase the white male labor force and to decrease other race-sex components.

On a geographic basis, the Tennessee Valley region lost workers to the remainder of the Southeast and gained workers from the North and West. This net inmigration of workers from the North and West is consistent with the needs of a developing region for trained manpower, which must in part be imported from more industrialized areas. An analysis of the before-and after-move incomes of migrants indicated that they did, in fact, possess relatively high skill levels, as reflected in earning power.

Inmigrants from the North had before-move (1957) incomes higher than the 1957 incomes of the then resident Tennessee Valley labor force (nonmovers). The 1957 incomes of all categories of outmigrants and southern and western inmigrants were lower than those of nonmovers.[1] White male inmigrants from the North earned an average of $4,396 before the move in contrast to an average white male resident income of $3,469. By 1963, resident incomes in real terms (1957 dollars) had increased to the same level as before-move income of inmigrants ($4,397). The average income for northern white male inmigrants, however, had increased to $4,891 by this time. Thus, northern white male inmigrants had higher incomes than resident workers both before and after inmigration. It should be noted, however, that these inmigrants made very small income gains through inmigration.

The presumption is that the Tennessee Valley region imported a sizable number (24,900) of white male workers from the northern states who by their

before-and after-move incomes may be adjudged to possess above-average skills and, more significantly, possessed these skills before their inmigration. White female inmigrants from the North also had higher 1957 and 1963 incomes than white females residing in the Tennessee Valley. This was not true of white inmigrants from either the Southeast or West. Meaningful data on black inmigrants exist only for those coming from elsewhere in the Southeast. For these workers, before-and after-move incomes were lower than those of residents of the same race and sex.

Outmigrants made relatively large income gains from migration, but their before-move incomes were on average lower than those of the resident labor force. To some extent this is a function of the age of outmigrants and their position on the life earnings curve. With the exception of white male outmigrants to the North and black female outmigrants to the Southeast, after-move incomes of outmigrants were still below their counterparts who remained in the Tennessee Valley region.

During the 1960-65 period, the Tennessee Valley region experienced a net loss of 8,600 workers as a result of migration. There was a net inmigration of 2,700 white males and a net outmigration of 2,200 white females, In contrast, there was a net outmigration of 8,300 black males and a net outmigration of 800 black females.

Annual migration data are available for the total labor force (including self-employed) between 1960 and 1965. During this period, gross inmigration (including former military personnel) averaged slightly above 7 percent annually, with some variation due to cyclical changes in the employment situation. Returning members of the military contributed about one-half of one percent to labor force growth annually during this period. On an annual basis, gross inmigration (civilian and military) accounted for slightly less of the growth in total labor force than did entry.

The average annual rate of inmigration was about one percentage point higher for white males than Negro males--8.23 versus 7.29 percent--while the rate of outmigration was only slightly higher for black males than white males--8.36 as opposed to 8.18 percent.

Thus, migration served to reduce the proportion of females and black males in the labor force and to increase the proportion of white males. From the gross migration data, it is clear that there was a decided difference in the attractiveness of the region for employment as between males of different races. The results for females are somewhat more complex and appear to warrant further analysis.

Geographically, the Southeast accounted for more than 60 percent of inmigrants to the Tennessee Valley between 1960 and 1965, with the Great Lakes states accounting for another 15 percent. The Northeast was the third largest source of inmigrants, accounting for between 7 and 10 percent of all migrants during the several years of the period. Other regions contributed appreciably smaller percentages.

Outmigrants exhibited much the same pattern and generally tended to offset inmigrants so as to leave very little net change due to migration. As Leoprapai observes:

> 'For every major migration stream, a counterstream develops,' (Lee 1965). This hypothesis seems to be supported by the outflows and inflows of migrants to and from the Region during this period. It is also interesting to note that ratios of all major streams to all major counterstreams for the entire period were very close to 1,

> i.e., not higher than 1.13 and not lower than 0.87, although ratios of some major streams in any particular year were as high as 1.50 or as low as 0.46.' (5, p. 81)

On balance, however, it is clear that the Tennessee Valley region has been experiencing a net gain through migration, importing workers with more experience and skills than those it exported. In gross terms, inmigrants have accounted for between 30 and 40 percent of the labor requirements of the region.

RURAL-URBAN MIGRATION

For purposes of analysis of rural-urban migration, a series of matrices of intermetropolitan migration was constructed for the years 1960-61 through 1964-65, which included the 33 largest SMSA's in the Southeast (4). These matrices permit analysis of gross flows among the SMSA's as well as between the SMSA's and the remainder of the Southeast and areas outside the Southeast. Each matrix also records entrees and retirees from the labor force by area.

Our analysis of the matrices indicated that net intermetropolitan migration was only a moderately significant factor in the change of the labor forces of southeastern SMSA's during the period 1960-65.

> Although each of the SMSA's under study had a large amount of gross inmigration or outmigration, the net gain or loss in the labor force for a given SMSA was small since the number of inmigrants tended to be cancelled out by outmigration. This pattern was also evident within migration patterns between any given SMSA and each of the other SMSA's. On the whole, principal migration streams for a given SMSA were from nearby SMSA's. Smaller SMSA's tended to draw most of their migrants from the nearest large SMSA, while the largest SMSA's drew their migrants from smaller cities. Atlanta and Miami were the two most important regional centers within the Southeast. (4, p. 25).

Traditional rural-urban movement was still of greater importance than movement among SMSA's. Gross migration flows to and from nonmetropolitan areas were about twice as large as gross flows between such areas. On a net basis, however, the metropolitan area's gain in experienced workers from rural areas was quite small.

The data indicated a net loss of about 140,700 workers from Southeastern SMSA's to areas outside the Southeast during this period. This far exceeded the SMSA's net gain from the rural areas of the Southeast during the same period. Net entry (entrees less retirees) exceeded the net growth of the SMSA's. This suggests that southeastern SMSA's perform a sizable training function: losing workers with job experience to areas outside the Southeast which must then be replaced by workers without previous job experience.

INTERINDUSTRY MOBILITY

Examination of interindustry mobility with social security data began with an examination of labor movements between farm and nonfarm sectors (1). Initial research covering the period 1955-59 revealed that nonfarm to farm movements exceeded off-farm movements in the employed labor force during this period. This was largely attributable to substantial movements of persons aged 55 and over who moved from the nonfarm sector to become farm operators.

To some extent this back movement undoubtedly reflects a move prior to retirement, but to some extent it may also reflect on the inability or unwillingness to adjust to nonfarm employment following some previous move. In other cases, the nonfarm move may have been of a temporary nature from the beginning. Many individuals who changed sectors did not remain in the same sector even during the period of study.

Since interindustry mobility contributed adversely to the reduction of the size of the farm sector during this period, it is obvious that entry and retirement tended to determine the net change in the size of the farm sector during this period. The relatively high age of the in-farm moving operators tends to reinforce retirement rates, while the high average age of operators discourages off-farm movement.

Our subsequent analysis covering the period 1960-65 confirmed these conclusions:

> Between 1960 and 1965, off-farm movement of OASDHI-covered farm operators that occurred in the Tennessee Valley region was largely offset by a countermovement of persons from nonfarm employment to farming. Transfers between the two sectors by farm operators followed the business cycle. The net contribution by farm operators to the growth of the nonfarm labor force was essentially zero. Retirement rather than off-farm transfers was a far more important factor in the decline in the number of farm operators. (3, p. 24)

Patterns for farm workers are quite different. In contrast to farm operators, the number of farm workers increased between 1960 and 1965. During the same period, the number of hired farm workers changing to the nonfarm sector substantially exceeded the number of individuals transferring to the hired farm sector. Entry rates were very high; in some years more than one out of every four hired farm workers had no job experience in the previous year.

> The result is that farm work draws labor from outside the work force and releases persons with work experience who then enter the nonfarm labor sector. Thus it may be presumed that hired farm work constitutes a kind of training ground for rural young people entering the labor force without pervious job experience. (3, p. 25)

A detailed analysis of interindustry mobility is now in progress. This analysis utilizes a 14 by 14 industry matrix, which may be used to trace labor flows between industries on an annual basis. Race and sex distinctions are maintained throughout the analysis so that interindustry flows can be traced for the various race-sex groups.

Between 1960 and 1965, the number of persons employed as farm operators and in mining, government, and unknown industries in the Tennessee Valley region declined, while employment in all other industries increased. Employment in manufacturing accounted for the largest proportion of the increase in total employment--accounting for 40.5 percent of the increase.

Even more striking was the fact that low-wage manufacturing industries[2] accounted for one-half of the increase in manufacturing employment. One out of every five new jobs created during this period was in low-wage manufacturing. Male employment in low-wage industries increased by 24,800, while female employment increased by 41,800. The total increase in low-wage manufacturing was 66,600.

Medium-wage manufacturing employment[3] increased by 34,400 during the same period and high-wage manufacturing[4] increased by 31,100. Males accounted for 85 percent of the increase in high-wage manufacturing and for almost half the increase in medium-wage manufacturing. In contrast, males accounted for only 37 percent of the increase in low-wage manufacturing, while females accounted for the remaining 63 percent. White females accounted for 94 percent of the increase in total female employment in low-wage manufacturing.

New entrants were the most important source of new manufacturing workers. Net entry (entrants less retirees) accounted for 59.4 percent of the increase. Net transfers from nonmanufacturing industries accounted for 35.5 percent of the increase. The remainder is accounted for by persons entering or returning to manufacturing from the military plus purely geographic transfers of manufacturing workers.

Within the manufacturing sector itself, there was a net loss of 1,600 workers from the region during this period; i.e., more workers left manufacturing jobs in the region for manufacturing jobs outside the region than made the reverse move. When one examines this on a more detailed basis, however, a somewhat more complex pattern emerges.

Within the region's high-wage manufacturing sector, there was a net inmigration of 6,000 experienced manufacturing workers. The region's medium and low-wage manufacturing sectors lost more workers with manufacturing experience to other regions than they gained from inmigration. The net outmigration was 7,000 for medium-wage and 600 for low-wage industries. Thus, a net importation of experienced manufacturing workers into the high-wage industries was more than offset by a corresponding loss from the medium and low-wage sectors. It is significant to note that it was the medium-wage sector which experienced the largest net loss.

In addition to the net inmigration of high-wage manufacturing workers, there was a sizable interindustry transfer of persons from the nonmanufacturing sector to the high-wage manufacturing sector. The net gain from interindustry transfers into high-wage manufacturing was equivalent to 73 percent of the net increase in high-wage manufacturing employment during the period. Net interindustry transfers accounted for 38.6 percent of the net increase in medium-wage manufacturing and only 16.0 percent of the increase in low-wage manufacturing.

The importance of experience in high-wage manufacturing is emphasized by the fact that net entry was negative; i.e., the number of retirees exceeded the number of new entrants. In contrast, net entrants accounted for 81 percent of the net growth in low-wage manufacturing and almost 73 percent of the increase in medium-wage manufacturing.

The sources of experienced labor for manufacturing are much the same for the high-, medium-, and low-wage sectors. In addition to manufacturing itself, wholesale and retail trade and "unknown and other" industries were the only significant sources of experienced workers. About half of all inmigrants who came into manufacturing in the region left manufacturing jobs elsewhere. Wholesale and retail trade was the major source of nonmigrants entering high- and medium-wage manufacturing.

There was a significant movement of workers between low- and medium-wage to high-wage manufacturing. In total, some 18,300 workers transferred from medium- and 9,000 from low-wage to high-wage manufacturing during the period, while 39,700 workers transferred from nonmanufacturing to high wage. Counterbalancing this were some 14,700 workers who transferred from high- to medium- or low-wage manufacturing and 27,100 who transferred to

nonmanufacturing. There was a net gain to high-wage manufacturing to 12,600 workers from medium- and low-wage manufacturing plus 12,600 workers who transferred from nonmanufacturing industries.

High-wage manufacturing workers were found to be much more stable than other manufacturing workers. The incidence of multiple jobholding was particularly high in low- and medium-wage manufacturing; in 1960, 12 percent of all white male high-wage manufacturing workers held more than one job, while the comparable figures were 19 and 20 percent for medium- and low-wage manufacturing. By 1955, 22 percent of high-wage manufacturing workers held more than one job compared with 25 and 28 percent for medium- and low-wage workers.

Multiple jobholders earned lower incomes than holders of single jobs. Multiple jobholders in low-wage manufacturing had incomes well below poverty levels; 1965 incomes averaged $2,832 for white males and $2,160 for black males. The average income of all multiple jobholding workers in low-wage manufacturing was $2,407 in 1965.

SUMMARY

The amount of change occurring in the labor force in the Tennessee Valley region during the period under analysis far exceeded what was anticipated by the authors. Large gross changes underlie the smaller net changes found in summary statistics. The continual entry and exit of workers means that the labor force is capable of rather marked change in a relatively short period of time.

There is little doubt that the Tennessee Valley region has been importing skilled workers from the North and West, particularly into high-wage manufacturing industries. At the same time, it has been exporting less-skilled workers and unknown numbers of workers without previous job experience who were not covered by social security because they obtained their first job outside the region. Many of the latter may have left for adjacent metropolitan areas where replacements must be sought for the experienced workers departing for other regions.

In contrast to high-wage manufacturing, low- and medium-wage industries appear to draw more directly upon entering workers for their labor. In other words, they tend to draw more heavily on the resident labor force. In fact, there is some evidence of outmigration of medium-wage industry workers who may have sufficient skills to migrate to similar industries in higher wage areas.

Between 1960 and 1965 there was a gain to high-wage manufacturing from the transfer of workers from medium- and low-wage industries within the region, but at the same time the region exported medium-wage manufacturing workers while it needed to import high-wage manufacturing workers. This suggests that either the market mechanism for the transfer of workers between medium- and high-wage manufacturing is inadequate or that the skills required in high-wage manufacturing are different from those possessed by resident medium-wage manufacturing workers. The apparent inability of the region to meet the needs of high-wage industry for skilled workers suggests the need for training and placement programs which will provide the skilled workers the region now imports in sizable numbers and to replace imported workers who retire. This replacement market for workers may in the long run be one of the major impacts of the current industrial development. Fortunately, the need for such replacements can be anticipated and appropriate training programmed well in advance.

Thus, the importation of skilled workers could be viewed as a necessary first step in the development process which will in time lead to better opportunities for the resident labor force. Such migration permits more rapid development, but the full impact on the regional labor force will require the passage of more time.

FOOTNOTES

[1]Data for the West are somewhat misleading since they were combined with military workers who are as a general rule younger and earn lower incomes.

[2]Tobacco, textiles, apparel, lumber and wood, furniture, leather, and miscellaneous.

[3]Food; paper; printing; rubber and plastic; stone, clay, glass; fabricated metal; and electric machinery.

[4]Ordnance, chemicals, petroleum, primary metal, nonelectric machinery, transportation equipment, and instruments.

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