



UPDATE

Miles To Go

Arkansas

**Closing the Economic Gap:
Education in the Arkansas Economy**



Southern Education Foundation



Southern Education Foundation

The Southern Education Foundation (SEF) is a regional public charity based in Atlanta, Georgia, that traces its roots back to 1867, when philanthropist George Peabody established a dedicated fund to advance education in the American South. For 135 years, SEF has been at the forefront of efforts to promote excellence and equity in education for the benefit of all through advocacy, research, reporting, convening, technical assistance, and program development. SEF does not make grants or receive unsolicited proposals and relies on donors of diverse types for support of its program activities. SEF's chairman is Dr. Norman Francis, president of Xavier University in New Orleans, Louisiana. Lynn Huntley, Esq. is its president. *Update: Miles to Go Arkansas* is one of a series of reports by SEF and funded by the W.K. Kellogg Foundation, the Entergy Corporation, Winthrop Rockefeller Foundation, Lumina Foundation for Education and the Ford Foundation. In this program, SEF undertakes research, disseminates information and works with policy makers to provide opportunity in education in the South. Prior reports issued by SEF include *Redeeming the American Promise* (1995), a comprehensive set of findings and recommendations about the status of minorities in public higher education in 12 states; *Miles to Go* (1998), which looked at the status of African American students in 19 states that formerly operated race-based dual systems of public higher education; *Miles to Go Maryland* (1999), *Miles to Go South Carolina* (2002), and *Miles to Go Arkansas* (2002). Recent reports are available free at www.southerned.org. Others may be acquired by contacting SEF at 135 Auburn Ave, NE Atlanta, GA 30303; 404-523-0001.

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In August 2002, the Southern Education Foundation (SEF) issued *Miles to Go Arkansas* (available at www.southerned.org), a report on education endorsed by Arkansas' living governors of the last 50 years. Some of the report's key findings were:

- Arkansas' economic development flows directly from education.
- Incomes are strongly related to education.
- Arkansas is near the bottom among the 50 states in producing college graduates and per capita income.
- Arkansas has a near majority of low-income, African American and Latino students who have the most needs and the least educational resources. These students are falling behind throughout Arkansas' educational systems. The entire state population will pay a very high price if Arkansas fails to enlarge educational resources and attainment for these students.
- Only about 15% of 9th graders graduate from college within 10 years – close to the same

percentage of current Arkansas adults who have a college degree. Arkansas is failing to close its education gap with the nation.

Miles To Go Arkansas recommended that the state set a new long-term direction in order to achieve the following necessary goals within 10 years:

1. Close the educational resources gap by income and race in per pupil expenditures, effective teaching, student support, challenging curriculum, and teacher salaries.
2. Reduce the racial and income gaps in average test scores for writing, reading, math, and science.
3. Double the percentage of college graduates in Arkansas from all population groups.

To achieve these goals, SEF's report recom-

mended that the state focus on improving teacher quality and supply, strengthening all students' college readiness, and assisting financially needy students.

Since the release of the SEF report, the Arkansas State Supreme Court has issued the *Lake View* decision¹, which declared the state's educational system unconstitutional and mandated an adequate and equitable education for all public school children in Arkansas. The challenge before the state is to meet the terms of the court order.

In truth, much more than lawful compliance with a court order is at stake in Arkansas today. The challenge facing Arkansas is to provide an adequate, equitable investment in education that fuels the state's economic development and social progress. The late Governor Sid McMath, who enthusiastically endorsed *Miles to Go Arkansas*, understood this fact throughout his public life. Over 50 years ago he observed: "It is... one of our primary responsi-

bilities to provide educational opportunities for all children of Arkansas. This is a direct constitutional obligation of the people of Arkansas. "Our most pressing and demanding State problem, in war or peace, is that of adequate school support. The abilities of your children and mine represent the human wealth of our State. They are the future. A continuing adequate *investment* in these human resources is vital to the survival of civilization and the progress of our State," he added in 1951.

In 2002, former Governor McMath concluded: "The most important thing that came out [of the Second World War] was the GI Bill ... an opportunity to get an education ... the best investment Uncle Sam ever made ... Here in Arkansas the best investment we can make is to provide an adequate education for all the children in our state. We are at a crossroads... The time is now."

To measure the importance of an adequate education and Arkansas' "human wealth," the

¹ Lake View School District No. 25 of Phillips County, Arkansas, et al. v. Governor Mike Huckabee, available at: <http://courts.state.ar.us/opinions/2002b/20021121/01-836.html>

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Southern Education Foundation commissioned independent research using recent advances in social scientific methods of analysis to approximate how important education is to the state's future economic development and for the entire state's quality of life. This *Update* brings together findings from that ongoing research in the context of Arkansas' current conditions of education and the Arkansas economy.

Our findings show unmistakably that Arkansas must go the extra mile *now* in order to assure that the state *tomorrow* moves from the bottom of the nation in education and in personal income. The primary task for Arkansas' leaders is to provide adequate and equitable school support to enable all students to attain higher levels of achievement and graduation. Over time, the primary effect will be to advance the state's economic development and social progress.

It also is important for all Arkansas leaders and all Arkansans to realize that the state not

only must establish a new day by adequately supporting Arkansas education, but also must sustain that support over decades — not merely years. As this *Update* suggests, investing adequately in education is the best, most effective and most important way for Arkansas to catch up with the rest of the nation's economy and personal income. It is a goal that can be reached. But, to do so, new levels of investment in education must be truly adequate, truly accessible to all children in need, and actually sustained from the early years of learning through college over the term of several governors and several legislatures.

Today must be the beginning of a new era for education in Arkansas. Nothing less than the future economic and social progress of the state is at stake.

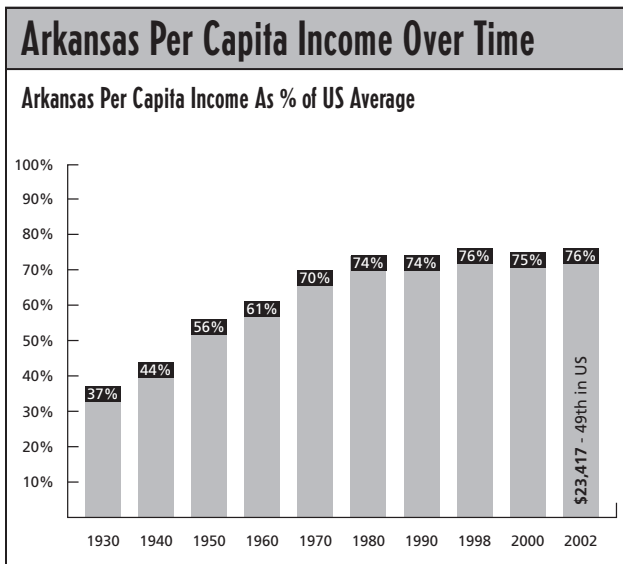
Lynn Jones Huntley

President

Southern Education Foundation

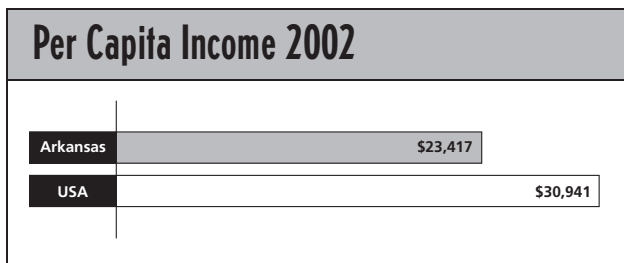
November 2003

Per capita income is the most widely used measure of a state's economic health. It reflects wages, other personal income (such as investments and ownership), and the number of jobs in a state's economy. Per capita income captures in one statistic a wide range of economic measurements that determine an entire state's economic growth and progress.



During the first three quarters of the 20th century, Arkansas steadily increased per capita income and narrowed the gap in economic prosperity between the state and the nation. In 1950, Arkansas' per capita income was 56% of the United States' per capita income. Twenty years later, in 1970, Arkansas' level had risen to 70% of the nation's per capita income.

Yet, beginning in the mid-70s, as the nation began to move towards a human capital economy that required higher, multiple skills, Arkansas' relative gains in per capita income slowed and stopped.



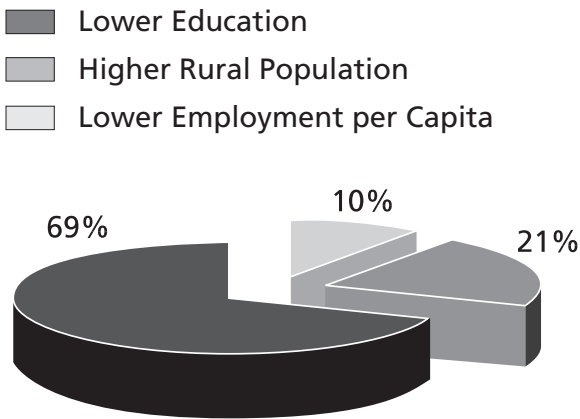
In 1980, Arkansas' per capita income was 74% of the national average, where it remained ten years later in 1990. By 1998, Arkansas' per capita income had inched upward to only 76% of the nation's. Over the last four years, Arkansas' per capita income has remained between 75% and 77% of the nation's per capita income. In 2002, (the latest year of confirmed data), Arkansas' per capita income was \$23,417, which was 76% of the national average.

In other words, relative to the nation, Arkansas' economy as measured by per capita income is very close to where it was over 20 years ago, in 1980. Not surprising, Arkansas' lack of relative progress means that it has fallen further behind other states. Arkansas was ranked 47th in per capita income among the states in 2000. In 2002, Arkansas fell to 49th — barely ahead of Mississippi, which appears to be inching upward.

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Arkansas' Education Gap Explains Arkansas' Economic Gap

Primary Factors Explaining the Difference in Per Capita Income Between Arkansas and the Nation



Why has Arkansas' per capita income stalled? What explains this economic gap between Arkansas and the nation? What primary factors account for the difference of the per capita income between Arkansas and the nation?

The answers to these questions not only can help the state understand why Arkansas' relative economic prosperity has stalled since 1980, but also can assist in developing the means and strategies that lift the state's economic progress towards convergence with the nation.

To find answers, and especially to understand the role that education may play in explaining the gaps in per capita income between individual Southern states and the nation, the Southern Education Foundation commissioned in early 2003 an independent study by the Center for Business and Economic Research (CBER) at the University of Kentucky, where the late Dr. Mark Berger pioneered econometric methods that better analyze and illustrate the relation-

ship of education and per capita income within states.

The CBER study documents with a specific number what most Arkansans already generally believe: *education is the major factor explaining the difference in per capita income between Arkansas and the nation.* Yet the extent of education's importance for Arkansas' economic prosperity is profound. According to CBER findings, Arkansas' lower levels of education explain 69% of the difference between the per capita income of Arkansas and the nation. The other major factors relate to lower levels of employment per capita in Arkansas and to a larger percentage of residents living in rural areas where generally the cost of living and earnings are lower. Generally, studies find that education is a major influence on income in all states. Studies also find that states with higher private sector employment per capita have higher per capita incomes and states with higher public sector employment per capita,

holding all else constant, have lower per capita incomes.

While reliable and accurate, econometric studies of this nature are not exact measurements since there are technical factors such "potential unobserved variable biases" and "reverse causal flows" that can contribute, often in the same measurements, to some understatement and some overstatement of the impact of education on per capita income. To be entirely accurate, therefore, this study determines that something near 69% of the difference between the per capita income of Arkansas and the nation is due to Arkansas' lower levels of education.

The study's results strongly suggest that if Arkansas' education levels were equal to the national levels, approximately 69% of the gap between Arkansas' per capita income and the national average would be eliminated.

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Many Beneficial Impacts From Increased Education

While the per capita income study is very helpful in clarifying education's sizable, direct impact on the state's economic condition, it actually limits the overall impact of increased educational attainment. Over time, there are many other benefits of increased education for both individuals and states as a whole. People with higher levels of education generally earn and save more money, have healthier, longer lives, vote more often, enjoy more leisure time, and become more involved in community and civic life. By the same token, there are significant economic and non-monetary impacts that come with increased education over a sustained period of time.

In an independent study on various impacts of increased education in Arkansas, Walter W. McMahon, professor emeritus of economics and of education at the University of Illinois, estimates that increases in educational attainment over a period of 30 to 40 years in Arkansas — only two generations of students going

from preschool through college — would have a significant impact by enlarging Arkansas' gross state product (GSP), increasing residents' life expectancy, lowering population growth, reducing infant mortality, reducing homicides and property crimes, increasing the preservation of Arkansas' environment, and enlarging worker productivity. Both economic and non-monetary impacts from increased education would improve the quality of life for all of Arkansas, including Arkansans who live in retirement in the state. In turn, over time, the state also would realize notable budgetary savings from reduced costs for Medicaid, prison construction and maintenance, and environmental clean up. Improvements in the state's quality of life that come with rising educational attainment will in the long run help improve the state's budgeting.

Necessary Steps To Increase Arkansas' Educational Attainment

"Beyond High School" State Ranking	
Arkansas State Ranking	Indicator of Performance
46th	College Continuation at 19
49th	College Going at 18-24
49th	College Associate Degrees
49th	College BA Degrees among adults
49th	College Advanced Degrees among adults

In measuring the impact of education on the state's economic well being, SEF's studies use two commonly accepted standards for educational attainment: high school graduation rates and rates of college bachelor's degrees (BA). Arkansas' rate of public high school graduates ranks well above the nation as a whole. Almost $\frac{3}{4}$ of Arkansas' 9th grade students in 1996 received a high school diploma in 1999. (The national average was approximately 67%.) Yet Arkansas has failed in preparing and supporting students to attain a college degree.

The state ranks 36th in the percentage of high school graduates who are enrolled in college the next year. The percentage of 18- to 24-year-olds in Arkansas enrolled in college remains well below the national average and behind most other Southern states. Also, retention and graduation rates are low in Arkansas.

As a result, Arkansas is at the bottom among states in producing college graduates. The state ranks 49th in the percent of high school gradu-

ates receiving two-year degrees, 49th in the percent of adults over 25 with bachelor's degrees, and 49th in the percent of adults with advanced degrees. In 2000, only 18% of Arkansas adults had a bachelor's degree.

To increase college attainment in Arkansas, the state must focus on three current, critical areas:

1. Pre-Kindergarten (Pre-K)
2. College-Ready Curriculum and Teaching
3. Access to College

Pre-Kindergarten

Preparing future generations of Arkansas students to attain a college degree begins by assuring that small children are ready for school.

Pre-K programs are vital for the success of all students in elementary and secondary schooling. National and state studies are virtually unanimous on one central finding: pre-K gives children an early start that often helps keep them from falling behind in the primary grades

and beyond.

By the 4th grade in Arkansas, substantial gaps in achievement stand between Arkansas students and the higher-achieving students across the nation. For example, average students across the nation are about twice as likely to be proficient in math in the 4th grade as are Arkansas students. The gaps between white and African American students and between low-income and wealthier students within Arkansas are also very large by the 4th grade. These gaps rarely close by the 8th and 12th grades. Too often they widen. Therefore, in order to increase educational attainment, Arkansas must provide pre-K programs to all children. Assuring this future educational attainment will fuel the growth of Arkansas' per capita income over time.

College-Ready Curriculum and Teaching

Arkansas also must assure that the state's educational system from kindergarten through the

12th grade prepares and supports students to go to college. Almost 60% of all Arkansas freshmen students require “remediation courses” to supplement the knowledge and skills they bring from high school. In the fall of 2002, 67% of entering freshmen to two-year colleges required remediation in at least one course; 51% of entering freshmen at four-year colleges required remediation in at least one course; the remediation percentage for four- and two-year colleges was 58%. The shortfall is even greater — nearly 90% — for African American freshmen.

Much of this problem can be addressed by providing a college-going curriculum, with adequate facilities and equipment, and developing effective teaching from elementary through high school. Proposals such as Smart Core can move the state in the right direction in providing a challenging curriculum so long as the state also provides adequate student support.

Access to College

To increase substantially the numbers of students who attain a college degree, Arkansas must assist more low-income students to pay for the costs of college. According to a recent national study, the college participation rate for students from low-income families in Arkansas has been among the worst in the nation. On average, only 16% of Arkansans between the ages of 18 and 24 from low-income families participated in college during the 1990s. Only five other states had worse records in assuring that students from poor families continue their education into college.

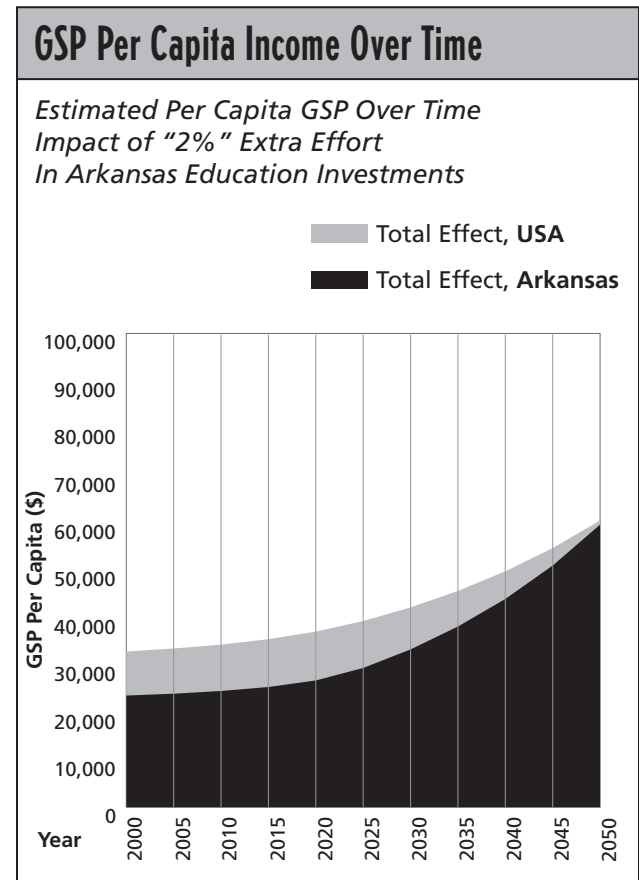
A major obstacle is money. When measured against the income of most Arkansans, tuition costs and fees for attending the state’s four-year public colleges and universities are very high — far above the national and regional averages. In addition, the state’s financial aid is meager when compared with most states and compared to need. Recently, Arkansas ranked

7th in the nation in the percent of college students in need of financial aid. When a state is ranked 7th in student need for financial aid and 45th in college participation for low-income students, the message is clear: Arkansas must provide more financial aid to increase overall educational attainment in college.

Money Matters In Education

While increased funding for education in Arkansas is not the only change that must occur, there is no way to avoid the simple truth: money matters in education.

Economist Walter McMahon has developed an econometric model that simulates the economic and non-monetary impacts of investments in education.



Using historical state data, McMahon is developing a model for Southern states, including Arkansas, which estimates the impacts over time created by an “extra effort” made by the state in financing education. In effect, his model asks: if Arkansas were to make an “extra effort” by increasing investments in education by 2% of its GSP, while the nation as a whole continued to increase educational investments at the current rate of increase, what would the impacts in Arkansas be over time?

The answers are encouraging. Within two generations of students – by the time the grandchildren of today’s young adults graduate from college – Arkansas could come close to catching up with the nation in per capita income.

In the same scenario, Arkansas would come close to catching up with the nation or would exceed the nation in several “non-market” impacts such as increased life expectancy and declining infant mortality rates.

Currently, a 2% increase in the Arkansas GSP per capita would equal a little more than \$474. In gross numbers, the amount equals a total of \$1.268 billion. In McMahon’s simulation, this level of extra investment in education would translate into a sharp rise in per capita GSP and put Arkansas within reach of the national average within 40 to 50 years. Of course, if other developments and efforts also enlarged job creation and earnings, the timetable could be even shorter. This model assumes only the influence and interactions of increased education investments.

Another way to understand the model is to assume that Arkansas leaders established a policy of maintaining a 2% increase above the nation’s per capita rate of investments in education. The results would be a narrowing of the economic gap over two generations of students, especially in the later decades.

As McMahon’s model illuminates, while there is no quick fix, money matters in educa-

tion as an investment for economic growth and social progress. Arkansas can virtually close the economic gap that has existed since the state's beginning over 165 years ago within two or three generations of students, perhaps in a shorter time, if the state will begin its extra effort now.

Conclusion

Arkansas is at a historic crossroads in education. The state has the opportunity to take the high road — to comply fully with the court order, to provide all Arkansas children with adequate, equitable resources for educational advancement, and to begin a pattern of investments in education that can enable Arkansas to close the economic gap that has existed since the beginning of its statehood.

As *Miles to Go Arkansas* noted and this *Update* specifically quantifies, education is the primary engine for Arkansas' economic growth. For this reason, Arkansas leaders must use this moment in history to make adequate investments in education. There is no better investment for the state's future economic and social progress than providing "adequate school support." If Arkansas leaders today will go the extra mile and make extra investments in education, the state can finally go the distance. It won't be easy, and it won't be done quickly, but Arkansas can become as prosperous as the nation with a quality of life second to none.

Sources, Methodologies, and Credits

The data for this report come from public sources. The analysis is based primarily on *Miles To Go Arkansas*, the sources cited in that report, and two independent studies commissioned by the Southern Education Foundation. To be published by SEF, the studies are current working papers:

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- Jonathan M. Roenker and Eric C. Thompson, *Education's Role in Explaining the Per Capita Income Gap*, Center for Business and Economic Research, Department of Economics, University of Kentucky, 2003.
- Walter W. McMahon and Elizabeth Appiah, "Simulations of Education Impacts in Deep South States," 2003.

The econometric study by Roenker and Thompson follows and improves upon the methodology established in an earlier study by their colleague, the late Dr. Mark Berger. (Mark C. Berger, "Kentucky's Per Capita Income: Catching Up to the Rest of the Country," *Kentucky Annual Economic Report 1997*. 1-8.) For example, Roenker and Thompson factor in cost-of-living variations and use an innovative proxy for considering physical capital. Berger's article and methodology are available at: <http://gatton.uky.edu/CBER/Downloads/annrpt97.pdf> In explaining the overarching framework of his study, Berger noted in his original work:

On the most basic level, factors that affect per capita income are those which raise or lower the amount of income a person receives in a state. One such set include factors which raise or lower the productivity of the labor force. Most obvious among these is the level of education. Workers in states with higher levels of education among their residents will earn more in the labor market and thus increase those states' per capita income. Not only productivity, but employment of workers in general will be a very important factor affecting per capita income across states. States with a higher percentage of their population working will have more people earning wages and salaries

and thus are likely to have a higher per capita income. In addition, whether the state is primarily urban or rural will have an impact on the model. Rural states will have a disproportionate number of individuals working in agriculture, where wages and incomes will tend to be lower. Thus, the very nature of the jobs in rural states will tend to hold down per capita incomes.

I have constructed an econometric model of per capita income that explains variation in income across states in 1995. After experimenting with several different combinations of variables which account for the factors discussed in the previous paragraph, I have specified five variables that do a good job in explaining differences in per capita income across states.

McMahon and Appiah follow the econometric models set out in McMahon's path-breaking work, *Education and Development* (Oxford University Press, paperback edition, 2002), which estimates education's net direct effects and externalities on growth and development in 12 East Asian Countries including Indonesia, 26 African, 18 Latin American, and 28 OECD Countries. In adapting his international model for use among Southern states, McMahon noted:

The empirical estimates that result are not predictions; they are simulations estimating net outcomes under the controlled conditions that all other policies and external shocks remain the same, which of course they never do. This is typical of comparative dynamics. The empirical basis for the regressions is worldwide international data. This is best for estimating long run coefficients reflecting a sufficiently wide scope of variation that they are meaningful and relatively stable. It is widely accepted that this is a far better basis than for example using interstate data among the Southern states where the time span is of necessity shorter, the variation more limited, the overall national environment uni-

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form, and the resulting coefficients much more unstable and unclear in what they reflect. So even if a much more extensive 5-7 year project were undertaken to collect all of the necessary data for the 10 Deep South states and to re-run the many regressions, the end result is likely to be far less meaningful than what is captured in the regression estimates being used.

A somewhat different situation exists with respect to the production function (i.e. growth equation) and the investment function. Here the regression estimates for the coefficients used are based on panel data for 1960-1995 for the OECD (industrialized) nations. It would be desirable if these could be updated and re-estimated by three stage least squares simultaneous equation methods. But the size of the task is such that this is beyond the scope of this preliminary paper. Again it will be asked if it would not be desirable to do the same thing but use panel data for the 10 Deep South states, say 1950 through 2000. Using 5-year growth rate intervals to smooth out most cyclical variation this would result in 100 observations. Although this approach may be somewhat promising, there is the major substantive question about whether or not the relatively small interstate variation that this permits, and the relatively short dynamic time frame, will allow for the most meaningful coefficients to be estimated. (i.e. after this is done, the wider range of variation in the OECD data may still have greater merit). There is the second problem that Gross Private Domestic Investment data by state do not exist. An extensive search has been conducted, including for suitable proxies. The conclusion is that hard data on physical capital investment flows or for clearly defensible proxies representing this crucial element in the view of economists in all growth equations measuring the economic growth process simply do not exist. Therefore, all of the simulations for any particular state, such as Arkansas, will use data for all of the 25 initial conditions that are specific only to Arkansas. But regression coefficients estimated from the wider data bases will be used. They are considerably more likely to be accurate than estimates based on data where the range of variation is too limited.

Steve Suitts, SEF program coordinator, prepared this report with the technical and editorial assistance of SEF consultant Robert Johnston. Frank Taylor designed the report for publication.



