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ABSTRACT

Community leaders and rural development specialists must decide which economic development strategies will provide the greatest benefit to the local labor force and the community. To aid in the evaluation of the small business approach to rural development, this report analyzes the effects of employer size on wages and employee benefits. A survey of 98 actively employed heads of households was conducted in Putnam County, Georgia, a relatively low-income rural county located 50 miles Southwest of Atlanta. In addition, approximately 1,700 small businesses in 25 rural Georgia counties were contacted and 86% completed surveys concerning employer characteristics, business practices, and purchasing patterns. Results indicate that larger employer size brings wage and benefits advantages to employees. Such individual advantages are important elements in quality of life but are often ignored in discussions of rural development strategies. Communities may increase both local influence and business size by encouraging expansion of existing businesses. A second conclusion is that industrial recruitment of large branch manufacturing plants is still a valid strategy, as indicated by wage and benefits advantages. Third, higher levels of worker education provided a significant wage reward. Fourth, managers with higher levels of education were more likely to provide benefits to their employees. Finally, a caveat: small establishments may offer economic development advantages other than wages and benefits, such as greater local retention of profits and more local purchase of intermediate inputs. Contains 30 references and 7 data tables. (SV)

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The Effects of Employer Size and Human Capital on Rural Wages and Employee Benefits

I. INTRODUCTION

Changes in the world economy during the 1980s signaled the need for new development strategies for rural communities. The increasing integration of rural communities into national and world economies presents both opportunities and threats for local economic growth. While some rural communities have grown through increased exports, others are faced with instability associated with rapid changes in global product and capital markets. As a consequence, community leaders throughout the world have shown a renewed interest in promoting the growth of locally-owned, small businesses.

Community leaders and rural development specialists are faced with deciding what economic development strategies will provide the greatest benefit to the local labor force and the community at large. Because leaders and specialists are accountable to the public, they need to be aware of possible consequences of alternative economic development strategies. There is no ideal employer size to solve all the economic problems of a community, but a careful evaluation can help a community decide whether it should abandon industrial recruitment efforts and focus exclusively on "home-grown" job creation strategies.

To aid in the evaluation of the small business approach to rural development, this report analyzes the effects of employer size on wages and employee benefits. The second section of the report discusses recent rural trends and the emergence of small business development programs as a policy response to these trends. The third section presents an overview of the policy debate concerning employer size and its effects. The fourth section describes the study area and the data samples used in preparing this report. The fifth and sixth sections present the findings of the study regarding wage and benefit effects of employer size. A summary and discussion of policy implications are presented in the seventh section.

II. RURAL TRANSITION AND THE SEARCH FOR NEW SOLUTIONS

Trends in the United States indicate a long-term decline in the relative importance of traditionally rural sectors. For the nation as a whole, farms contributed 6.9, 2.6, and 1.5 percent of gross domestic product (GDP) in 1950, 1970, and 1990, respectively (Council of Economic Advisors). Even in rural and nonmetro areas, farming and other natural-resource sectors have declined as shares of output, employment, and income.

The rural economic restructuring in agriculture and other rural sectors has been associated with an increase in the nonmetro-metro earnings gap. In 1980, real earnings per job in nonmetro areas were 77.1 percent of real earnings per job in metro areas (Economic

Research Service). In 1989, nonmetro real earnings per job were 73.8 percent of metro real earnings. A similar increase in the nonmetro-metro gap occurred with respect to household income during the 1980s.

Throughout the decade of the 1980s, rural communities have experienced higher rates of unemployment, on average, than urban areas. In 1991, the reported rate of unemployment in nonmetropolitan (nonmetro) areas of the U.S. was an average of 7.0 percent compared to 6.6 percent in metropolitan (metro) areas. If the rates are adjusted for part-time employment and discouraged workers who dropped out of the labor force, the unemployment rate averaged 10.8 percent in nonmetro areas and 9.6 percent in metro areas in 1991 (Economic Research Service).

Rural leaders are concerned that nonmetro-metro disparities in average earnings, household income, and unemployment rates may contribute to outmigration of residents and inhibit economic growth. Migration theories suggest that population movement is affected by a large number of factors, including regional differences in income and economic opportunity. Recent trends indicate that rural areas are suffering a loss of human capital. From 1989-91, more young people (ages 18-29) left than moved into nonmetro areas (Economic Research Service). Furthermore, the college-educated population moved away from nonmetro areas at a much higher rate than the less-educated population.

The rapid transition of the economy, both in rural and urban areas, has provided motivation for the current proliferation of small business development programs. Job creation is a dominant concern of the electorate and small business development programs have been a response to this concern. Small business development programs are now sponsored and advocated by a wide range of public and private organizations throughout the country. It is therefore not surprising that rural leaders and rural development specialists have also attempted to create small business programs specifically for rural areas.

Throughout the South, rural communities face adjustment in the agricultural and natural resource sectors similar to that in other regions of the country. In addition, however, many rural communities rely heavily on low skill, low wage manufacturing in nationally declining sectors, such as textiles, apparel, and footwear. During the 1970s and early 1980s, the southern region appeared to gain employment, in part, because manufacturing facilities in other parts of the country moved south in search of lower wages (Nolan). This gain, however, may be short-lived. Footloose manufacturing firms that currently provide employment in rural communities may eventually shift production to lower-cost foreign locations.

In response to changing markets and the threat of local economic decline, southern rural leaders have been counseled to shift from recruitment of large, branch plants to the development of small businesses. A widely-circulated report on rural development criticizes traditional economic strategies, asserting that "the South must reduce its emphasis on the hunt for outside industry and begin to plant the seeds for local business development" (MDC,

Inc.). Traditional economic development efforts attempted to expand the export base of a community. Such efforts assumed that demand links to the national economy, particularly through branch plants, constitute the primary source of local economic growth. Traditional policies attempted to create jobs and generate additional income through public investments that reduce costs to firms locating in nonmetropolitan communities. Highway construction, improvement of rail and air transportation facilities, industrial site preparation, and tax holidays are elements of traditional strategies for encouraging firms to locate in rural communities.

In contrast, small business strategies focus on the human capital and financial capital requirements of small- and medium-sized firms. In many cases, the targeted firms consist of single establishments and are locally owned and operated. While industrial recruitment strategies focus on attraction of large, outside firms, small business strategies focus on the creation of new firms.[1] The means by which communities attempt to assist small businesses include managerial and employee training, technical assistance in the preparation of business plans, technical assistance in product and market development, and access to traditional and nontraditional forms of finance. Some programs also provide temporary physical facilities in business incubators for new firms.

The rationale for small business programs is that they plant seeds within the community for sustained future economic growth and development. Entrepreneurship, defined as the ability to combine labor, capital, and other inputs, is an important part of the local asset base. Investments made today in this asset base produce new income tomorrow. If the entrepreneur is a local resident, much of the income generated is likely to stay within the community. Furthermore, resident entrepreneurs may be more sensitive to community values, more likely to purchase inputs locally, and more inclined to remain in business during turbulent economic conditions in the local economy.

III. THE POLICY DEBATE OVER EFFECTS OF EMPLOYER SIZE

In the United States, the role of small businesses in job creation has received much attention since the publication of a widely-cited report in 1979. In that study, David Birch reported that small businesses contributed 82 percent of net job growth in the U.S. over the period 1969-1976. The Birch report sparked a long and continuing debate about the job-creation potential of small businesses. Critics have pointed out numerous shortcomings of the Birch report that led to over-estimation of the true role of small businesses. Most importantly, Birch failed to distinguish between establishments and firms. This means, for example, that each Walmart store was treated as a small business rather than as a branch of a single large firm. The effect was to inflate the amount of employment attributed to small businesses.

The controversy surrounding the Birch report has led to numerous studies examining the economic impacts of small businesses. A recent study sponsored by the National Science

Foundation and the Small Business Administration concludes that much of the prevailing wisdom about small businesses is wrong (Brown, Hamilton, and Medoff). In general, it is now understood that small businesses, properly defined, contribute a lower share of total new jobs than previously believed. Furthermore, the levels and types of employee remuneration in small businesses appear to differ from employee remuneration in large businesses.

An important theme emerging from small business research is that small businesses pay lower wages and offer fewer employee benefits on average. Researchers have consistently found a strong positive relationship between employer size and wage rates (for example, see Brown and Medoff; Barron, Black, and Loewenstein). However, the existing studies on wage and benefit effects of employer size are based on national averages. None of the available research specifically addresses the effects of employer size in rural areas.

Previous rural wage studies ignore the issue of employer size, focusing rather on workers' human capital characteristics as wage determinants (Smith et al.; Scott, Smith, and Rungeling). In this report, we examine both workers' characteristics and employer size to gain an improved understanding of factors that determine rural wages. Since wages represent only a part of employee remuneration, we also analyze the relationship between employer size and the provision of employee benefits.

IV. HOUSEHOLD AND ESTABLISHMENT SURVEYS USED IN THIS STUDY

Lack of detailed information is a serious impediment to understanding the effects of small businesses. Most previous studies of small businesses have used establishment-level information from databases designed for other purposes. The present study uses detailed survey data gathered from both households and businesses. The household survey is useful for understanding what determines wages, since businesses are generally not able to provide information on characteristics and wages of individual workers. The business survey provides detailed information not generally available in other sources that allows us to assess which types of firms are most likely to provide particular types of benefits.

The Household Survey

Putnam County, Georgia, is a rural community located 50 miles southwest of Atlanta in the north-central part of the state. The county was chosen for this study because of its rural location, its relatively low per capita income, and the rapidly declining relative importance of traditional rural sectors (especially agriculture and forestry) as sources of employment and income in the local economy.

Putnam County had an estimated population of 12,800 in 1988. Income in Putnam County remains well below state and national averages, though the gap has narrowed in

recent years. In 1988, per capita income was 69.5 percent of the U.S. average and 75.1 percent of the Georgia average (Bachtel).

Major changes have occurred in the industrial structure of Putnam County over the past two decades. As shown in Table 1, the relative importance of agriculture, forestry, and manufacturing has declined, while the relative importance of service and government sectors has grown. Between 1969 and 1988, the share of agriculture and forestry in total earnings fell from 14.6 percent to 4.3 percent. Manufacturing income, as a share of total earnings, declined from 46.9 percent to 30.0 percent. In contrast, the earnings share of the service sector increased from 27.4 percent in 1969 to 51.0 percent in 1988. The government sector increased from 11.1 percent of earnings in 1969 to 14.7 percent in 1988.

The household data were collected in telephone interviews in Putnam County with 98 actively employed heads of households who reported current income from employment. This represents a 2.4 percent sampling of the 1985 estimated number of households in the county (U.S. Department of Commerce).

Based on the information gathered in the household survey, small and locally-owned businesses are relatively important in providing employment in Putnam County. Fifty-four percent of the heads of households reported that they are employed by establishments with 29 employees or less. An additional 14 percent of household heads are employed in establishments with 30-99 employees. Thus, 68 percent of household heads work in establishments with less than 100 employees. Sixty-one percent of heads of households work in establishments that are locally owned. Characteristics of heads of households in the survey are presented in Table 2.

The Business Establishment Survey

Approximately 1700 small businesses in 25 rural counties in Georgia were contacted in a detailed survey of employer characteristics, business practices and purchasing patterns. Counties were included in the sample region if they had less than 10,000 in population and were not located in a metropolitan area.[2] A 33 percent random sample of businesses employing 500 or fewer employees was drawn from the population of establishments existing in the survey region in the first week of July, 1990. The response rate to the survey was excellent (86 percent). More details and descriptive results of the survey can be found in a report prepared by the Small Business Development Center at the University of Georgia.

Among the surveyed businesses, 73 percent employ one to five employees (including owner and immediate family members), while only one-and-a-half percent employ more than 100 employees. An average of 9 employees are employed per establishment.

In contrast to popular perceptions regarding rural areas, a large share (87 percent) of the businesses in the sample are in the service sector (including wholesale and retail), while only

6.5 percent are in manufacturing. More than half (54 percent) of the businesses are sole proprietorships. Seventy-eight of the businesses are single establishment firms.

V. WAGE EFFECTS OF EMPLOYER SIZE

To aid in the evaluation of business development strategies, this section of the report analyzes the impact of employer size on rural wage rates.

Economics of Wage Determination

Numerous factors affect wage rates, and when each of these factors is identified conceptually and accounted for statistically, it is possible to isolate the effects of a single factor such as employer size. Measurement of the wage impact of employer size requires a theoretical explanation of the wage determination process. Economists have traditionally relied on the neoclassical and human capital approaches to wage determination. The neoclassical approach to wage rate determination is based on the theory of marginal productivity and on the theory of competitive markets. Firms are assumed to be price takers in labor markets and labor is paid according to its marginal product (the value of the output produced by an additional worker). In its simplest form, neoclassical theory assumes that labor is a homogenous input.

Human capital theory extends the neoclassical wage determination model by recognizing productivity differences among labor inputs (Becker, 1975). Workers invest in education, training, health care, or migration in expectation of increasing their productivity. Firms, motivated by a desire to maximize profits, reward productivity according to the human capital of each worker.

Critics have identified numerous limitations of the human capital approach to labor markets (Fischer and Nijkamp). A central focus of these criticisms is the lack of attention to institutional factors and market imperfections in the basic neoclassical approach. In response to these criticisms, empirical studies of wage rates often incorporate race and gender variables to allow for possible discrimination in labor markets (Joll et al.). For example, human capital theory has been extended to explain the wage effects of race and gender as the expression of employers' taste for discrimination (Becker, 1957). If such tastes exist, employers may systematically offer certain worker groups, such as women and blacks, wages that are lower than the value of the marginal product of labor.

In the empirical literature, wage determination models often adjust for industry and occupation effects (Brown and Medoff). Industry and occupation may capture differences in working conditions that are difficult to measure directly. If capital-labor ratios differ by industry and occupation on average, marginal productivity theory implies that wages will vary across industry and occupational categories.

Recent studies have emphasized the effect of employer size on wage rates (Brown and Medoff; Barron, Black, and Loewenstein). Neoclassical explanations of this effect focus on labor quality differences or working conditions across firms of different sizes. Under the assumption that large firms are at a disadvantage in the monitoring of employees, Oi argues that large firms place a premium on workers who are willing to be trained and to conform to rigid job requirements and hence "monitor themselves." To fill their ranks with highly disciplined workers, large firms are willing to pay higher wages than small firms (Idson and Feaster).

Other explanations of a positive relationship between employer size and wages focus on institutional factors, particularly the desire of employers to avoid unionization of workers. It is argued that large employers attempt to sweeten labor relations by offering higher wages to minimize their workers' interest in unionization (Freeman and Medoff).

Evidence on Wage Determinants

We used ordinary least squares to estimate the effects of the above-mentioned factors on rural wages. The analysis uses detailed information from the household survey described in the previous section. The definitions and summary statistics for the variables used in the wage model are reported in Table 3. The variable to be explained in this analysis is the average hourly earnings of heads of households in the sample. Establishment size is measured by the number of employees at the worker's establishment (SIZ). The human capital variables are the worker's education (ED), years of work experience before current job (PEX), and years at current job (TEN). Other variables include race (RAC), gender (GEN), ownership type of the establishment (SEMP), occupational categories (OCC), and industry categories (IND).

Results of the wage model are reported in Table 4. To gain understanding concerning the interaction between establishment size and the gender and race of the workers, two versions of the model were estimated, one without variables for the interactions (Model 1) and one with variables for the interactions (Model 2). Both models explain around 76 percent of the variation in the wage variable and thus provide a good fit to the data. Significance of the estimated coefficients was evaluated using a two-tailed t-test.

The results generally conform to expectations. In Model 1, the estimated base wage rate for workers who are white, male, employed in a managerial or professional job in manufacturing, and not self-employed, is $4.44. Education has a positive and significant effect on wages with an estimated rate of return of 2.62 percent. This estimate lies between a previous rate of return estimate of 4.27 percent for U.S. workers in all industries and 2.6 percent for hired farm labor in Georgia (Mellow; Gunter).

The positive effect of experience (PEX) and the negative effect of experience squared (PEXSQ) are each statistically significant. The estimated rate of return of 2.9 percent for a

year of work experience is greater than the rate of return of 2.6 for an additional year of education. This comparison suggests that workers who are already employed and wish to remain in Putnam County have relatively little monetary incentive to leave their jobs and invest in additional education. A further statistical test (a joint F-test on PEX and PEXSQ) indicates that the wage reward for additional years of previous experience is positive but diminishing in magnitude.

Current-job tenure (TEN) and its square (TENSQ) are not significantly related to wages. The significance of previous experience and the lack of significance of tenure in the current job suggest that workers in Putnam County acquire primarily general skills on the job. Work experience acquired in the current job apparently adds little to the worker's productivity as perceived by employers. Average job tenure is 10.2 years, a period long enough for workers to acquire job-specific training and for it to yield returns if such investment occurs. The absence of additional wage benefits for years of current-job tenure suggest that little investment in job-specific training occurs in Putnam County. In contrast, Mellow's (1982) analysis of a sample drawn from all U.S. workers indicates that the rate of return for an additional year at the current job is three times higher than for a year of previous experience.

The effect of employer size (SIZ) is positive and significant, as anticipated. The estimated value of the employer size coefficient in Model 1 indicates that, in a cross-employer comparison, doubling employer size is associated with a 12 percent wage increase. Controlling for other wage determinants, the predicted wage of a worker currently earning $8.00 per hour in an establishment employing 50 workers rises to $8.96 per hour in an establishment employing 100 workers.

Occupation (OCC) was found to have a significant effect on wages. For example, individuals in the managerial and professional category earn higher wages than the other categories. Industrial sector also affects wages. Three of the five industry categories (IND) have wages that are significantly higher than manufacturing. These categories are transportation and public utilities (TPU), wholesale and retail trade (WRT), and finance, insurance, and real estate (FIRE).

The results indicate that blacks receive wages that are 14.4 percent lower, on average, than wages of whites. Also, women receive wages that are lower than men's wages. When calculated as a proportionate impact, average wages of women are 45.8 percent less than average wages of men. Because this study focuses on the employer size-wage relationship, no attempt is made to explain the race and gender-related differentials. It is possible that a portion of these differentials is related to labor market discrimination. Testing for discrimination requires more detailed specification of productivity differences among workers than permitted by the data in this study. For example, previous studies (e.g., Fuchs) suggest that time spent out of the labor force for family duties explains part of the gender wage differential, but information for this variable was not available in the present study.

Contrary to expectations, wages are not significantly related to self-employment status. Thus, there is no evidence that self-employed workers in Putnam County accept wages that are systematically lower than wages of hired workers.

Except for variables included in interaction terms, the estimated effects in Model 2 change little in magnitude from the estimated effects in Model 1. Model 2 shows that there is significant interaction between employer size and employee race (RAC x SIZ). As shown in Table 5, the proportionate wage impact of employer size is considerably larger for blacks than for whites. In a cross-employer comparison, a doubling of employer size is associated with a 21.9 percent wage increase for blacks and a 9.50 percent increase for whites. However, the racial wage gap disappears in establishments with 30 or more employees.

The proportionate wage impact of employer size is slightly larger for females than for males. Table 5 shows that, on average, a doubling of employer size is associated with a wage increase of 16.4 percent for women and an increase of 14.0 percent for men. Because the rate of increase in wages with respect to employer size is only slightly higher for women than for men, the gender wage gap does not disappear as establishment size increases.

VI. FRINGE BENEFITS AND ESTABLISHMENT SIZE

Besides wages, a major concern of researchers and policy makers dealing with small business development programs is the extent of disparity in non-wage benefits provided by small and large firms. There is some evidence that the employer size-wage relationship extends to non-wage fringe benefits as well. Brown, Hamilton and Medoff argue that small businesses often fail to offer fringe benefits almost universally available in large firms. For example, a 1986 study conducted for the Small Business Administration found that every firm sampled with more than 500 employees offered a health insurance plan, compared to 55 percent of firms with fewer than 500 workers.

A potential difficulty with such studies is that they usually ignore very small firms which often employ only the family of the small business owner and, as such, consider provision of benefits to be a personal, rather than a business, responsibility. Other studies have shown that compensation also differs because of employee sorting with skilled and better educated workers employed by larger firms (Evans and Leighton).

Interest in fringe benefits is also increasing following evidence that non-wage compensation has been growing faster than wages and salaries in recent years. A major reason why most previous studies have neglected fringe benefits has been the paucity of data on this important component of total compensation. To better understand these issues in a rural setting, we analyzed the pattern of fringe-benefits provision among a sample of small business in 25 non-metropolitan counties in Georgia.

Fringe Benefits

The list of fringe benefits and the number of establishments providing these benefits to their employees is given in Table 6. The responses have been categorized by different establishment size classes based on the number of workers employed by the firm. Of the 1252 establishments that provided complete information on employment and benefits provision, 827 (66 percent) responded with a 'Not Applicable' response. Almost all (99.5 percent) of the 'Not Applicable' responses were from establishments in the 1-10 size class.

The response pattern in Table 6 indicates a clear link between establishment size and benefits provision. Except for bonuses and flex-hours, establishments with 26 or more employees provide fringe benefits at a higher rate than firms with fewer than 25 employees. The distribution of health and life insurance benefits reflects the general pattern of fringe benefits coverage. Among establishments employing 26 or more workers, 92 percent provide health insurance and 88 percent provide life insurance. Comparable figures for establishments employing between one and ten workers are 55 percent for health insurance and 44 percent for life insurance. For some benefits, differences based on establishment size are not so drastic. For instance, 58 percent of establishments in the 1-10 size class provide sick leave while establishments in the 26-plus class provide sick leave at a slightly higher rate of 64 percent. Interestingly, smaller establishments provide flex-hours arrangement for their employees at a higher rate than larger establishments; 50 percent of establishments in the 1-10 size class allow flex-hours compared to 34 percent in the 26-plus size class. Table 6 also indicates child care as the type of benefit least likely to be provided by establishments. Only between two and four percent of establishments provide child care assistance in the three size classes.

Factors Influencing Benefits Provision

The simple classification in Table 6 does not control for various firm and ownership characteristics besides firm size that affect fringe benefits provision. As noted earlier, larger firms may attract more skilled workers who receive better benefits. Similarly, firms with particular ownership characteristics such as sole proprietorship may lack the resources necessary to make benefits provision affordable. To get a full picture of factors influencing fringe benefits, we analyzed the provision of selected benefits using regression analysis.

Since fringe benefits are a part of the "total wage package," the factors affecting provision of fringe benefits are expected to be similar to those affecting wages. We therefore anticipate that firms employing a higher proportion of skilled workers in their work force will provide benefits at a higher rate compared to firms with a lower level of skilled workers. It is the total compensation and not just wages or fringe benefits alone that enter into the employment decisions of workers and firms.

The definitions of establishment and owner/manager variables used in the analysis are reported in Table 7. In the 351 establishments for which we had complete responses, 19 workers are employed on average with a standard deviation of 27 workers. The average ratio of part-time workers to total number of workers is 0.22. An average of 29 percent of workers are unskilled. The establishments in our sample have been in operation for 18 years on average, and the owners or managers have had average schooling of 14 years.

Sixty-seven percent of the establishments are independent, while the remaining 33 percent are branch establishments. Thirty-three percent are sole proprietorships and 67 percent are partnerships or corporations. Five percent of the establishments are minority owned or managed and 12 percent are owned or managed by women.

Table 8 presents results from statistical analyses undertaken to gain an understanding of factors influencing the provision of six fringe benefits.[3] The statistical significance of the estimated coefficients was evaluated using a two-tailed t-test. The results show that the effect of establishment size on benefits provision is by no means uniform. Establishment size has a significant and positive effect on parental leave and health insurance but no effect on paid vacation, sick leave, and flex-hours. Establishment size has a negative effect on bonuses. Smaller establishments are more likely to provide bonuses than larger establishments. This finding has important policy implications given the recent trend toward profit sharing to improve business productivity. The profit sharing arrangement ties employee wages to firm performance in the form of bonuses. The bonuses are cut when sales are down and raised when sales are up. This way firms are better able to absorb demand fluctuations without laying off workers. The aggregate effect on the economy is beneficial in the form of lower unemployment. Further research is needed to study this aspect of small business behavior.

Not surprisingly, flex-hours and parental leave are more likely to be offered by establishments with a higher proportion of part-time employees (EMPR). However, the higher the proportion of part-time employees, the lower the chance that the establishment will pay bonuses.

The proportion of unskilled workers (UNSKR) has a consistently negative effect on the benefits provision. Establishments with a higher proportion of unskilled workers are less likely to provide sick leave, parental leave, health insurance, and flex-hours compared to establishments with a lower proportion of unskilled workers. This result suggests that establishments have to provide more benefits to attract and keep better skilled workers on their payrolls.

Another result with potentially important policy implications is the consistently positive effect of education level (EDN) of the owner/manager on benefits provision. Educational level of the owner/manager has a significant and positive effect on sick leave, health insurance, paid vacation, and bonuses. This result adds to an emerging picture of the key role entrepreneurial human capital plays in various aspects of small business performance. Previous studies have given ample evidence that firms with better educated managers are

more likely to grow and survive compared to firms with poorly educated managers (Bates). Education also has significant and positive impacts on selection of growth-promoting business strategies such as planning and use of new technology (Variyam and Kraybill).

The effect of industrial sector on the provision of fringe benefits is varied. Establishments in the mining, construction and manufacturing sectors are significantly less likely to provide sick leave compared to establiishments in the sales (wholesale and retail) sector. Service establishments are more likely to provide health insurance compared to sales establishments. However, service establishments are less likely to provide bonuses compared to sales establishments. For the remaining benefits, industrial sector does not make a significant difference in benefits provision.

Ownership-related variables, such as whether the establishment is a single, independent establishment (INDEP), sole proprietorship (PROP), owned by member of a minority group (MINORITY) , or owned by a woman (GENDER), tend to affect the provision of benefits. Independent firms are significantly less likely than multiple-establishment firms to provide sick leave, health insurance, and paid vacation to employees. Sole proprietorships are significantly less likely than partnerships and corporations to provide all the benefits considered in this analysis except flex-hours. Establishments owned or managed by women are less likely than establishments owned or operated by men to provide sick leave. Minority-owned or managed establishments are less likely than white-owned establishments to provide bonuses.

VII. SUMMARY AND CONCLUSIONS

This report examines wage and benefit effects of employer size in the rural economy. Based on surveys of households and firms in rural Georgia, we tested the hypothesis that small employers remunerate workers at lower levels than large employers.

Wages are the main, and often only, source of income for the income-earning rural population. For many workers, employee benefits are an important supplement to their wages. We suggest, therefore, that the wage and benefit effects of employer size should be taken into consideration in the choice of rural development strategies. At the same time, realism concerning available "policy handles" at the local level is essential. Communities cannot easily or quickly influence the size of firms and the appropriate policy response to wage and benefit considerations related to employer size requires careful planning over a considerable period of time.

Our first conclusion is that largeness of employer size brings wage and benefit advantages to individuals employed in those establishments. Though community advantages cannot readily be calculated by summing individual advantages, we believe the latter are important and often ignored in discussions of rural development strategies. Wages and benefits are

important (though not the only) elements in quality of life and affect many household decisions regarding employment, purchasing of goods and services, and migration.

In addition to individual-level effects, community-level effects should also be considered. For the community's perspective, it is desirable to have local control (or at least influence) regarding employment decisions. One way for communities to increase local influence, while obtaining the benefits of larger-size firms, is to encourage the expansion of existing businesses. Economic development programs focused on retention and expansion (R&E) of existing businesses are now underway in many states (Morse). While R&E programs usually include both locally-owned and outside-owned firms, they provide a formal channel for the local community to influence employment decisions. In successful R&E programs, employment expansion occurs in at least some of the existing business establishments. The expansions are facilitated by new and improved community inputs." These inputs include a spectrum that ranges from the demonstration of a pro-business attitude to the provision of infrastructure (e.g., construction of a short-line rail or a parking lot).

A second conclusion is that the current disdain on the part of some economic development experts for industrial recruitment (generally, of large branch manufacturing plants) may lead communities to overlook a strategy that still has value, at least in some communities. Several years ago, Thomas Till provided evidence that the attraction of branch manufacturing plants had contributed importantly to the growth of employment in some southern counties. Our results concerning *wages and benefits* complement Till's result concerning *employment*.

The remaining conclusions are not directly related to employer size. Our third conclusion is that raising the level of educational attainment is important for improving rural wages. Our results indicate a significant wage reward for higher levels of education of workers even in a rural community located at a considerable distance from a major metropolitan area.

Our fourth conclusion is that higher levels of managerial human capital bring income-related advantages to rural workers. Our results show that managers with higher levels of education are more likely to provide employment benefits to their employees. There are undoubtedly many reasons why this effect occurs. It is likely that firms with better educated managers are more efficient and therefore more able to offer employee benefits. However, we cannot rule out the possibility that highly educated managers simply select industries using more highly-skilled and better-remunerated employees.

Finally, it is our duty to offer a caveat. Wage rates and employee benefits are important criteria for evaluating economic development strategies but other criteria are also valid. In comparison to large establishments, small establishments may offer other advantages, such as greater local retention of business profits and more local purchase of intermediate inputs (Kraybill).

Table 1. Earnings by Sector as a Share of Total Personal Income, Putnam County, Georgia.

Sector	1969	1988
	Percent	
Agriculture and Forestry	14.6	4.3
Manufacturing	46.9	30.0
Services	27.4	51.0
Government	11.1	14.7

Source: Georgia County Data Base, Selig Center for Economic Growth, University of Georgia

Table 2. Characteristics of Heads of Households, Putnam County, Georgia, 1990.

Race	Male	Female	Married	Single	Mean Years Educ.	Mean Hourly Earnings
	----- (Numbers of Household Heads) -----				(Years)	(Dollars)
Black	24 (30%)	15 (83%)	21 (30%)	18 (67%)	12.1	$ 7.74
White	56 (70%)	3 (17%)	50 (70%)	9 (33%)	13.4	$12.60
Total	80 (100%)	18 (100%)	71 (100%)	27 (100%)	12.7	$ 9.14

Source: Survey of 98 households, conducted by University of Georgia, March, 1990.

Table 3. Definitions, Means, and Standard Deviations of Wage Model Variables.

Variable	Definition	Mean	Std. Dev.
ln W	Average hourly earnings of heads of households	2.21	0.61
ED	Years of schooling	12.71	3.07
PEX	Years of work experience before current job. Calculated as AGE-ED-TEN-6, where AGE is worker's age.	24.20	11.60
TEN	Years at current job	10.20	8.29
SIZ	Number of employees at establishment of employment	239.69	305.65
RAC	Race of respondent (0 = white, 1 = nonwhite)	0.39	0.49
GEN	Gender of respondent (0 = male, 1 = female)	0.18	0.39
SEMP	Ownership of establishment (0 = not self-employed, 1 = self-employed)	0.17	0.38
OCC[a]	Technical, sales, admin. (TSA)	0.08	0.28
	Service (SVC)	0.12	0.33
	Precision prod., craft, repair (PCR)	0.11	0.32
	Oper., fabricators, laborers (OFL)	0.27	0.44
	Farming and forestry (FF)	0.02	0.14
IND[b]	Ag., forestry, construction (AFC)	0.09	0.29
	Transp. and public utilities (TPU)	0.16	0.37
	Wholesale and retail trade (WRT)	0.10	0.30
	Fin., ins., and real estate (FIRE)	0.02	0.14
	Services and government (SVG)	0.29	0.45

[a]Binary variables for occupation. The base category is managerial and professional.
[b]Binary variables for industry. The base category is manufacturing.

Table 4. Regression Estimates of Effects of Wage Determinants on Log of Wages of Household Heads, Putnam County, Georgia, 1990.

Variable[a]	Model 1		Model 2	
	Coeff.	t-stat[b]	Coeff.	t-stat[b]
INTERCEPT	1.4900	5.56***	1.5063	5.60***
ED	0.0263	2.23**	0.0309	2.54**
PEX	0.0288	2.66***	0.0272	2.50**
PEXSQ	-0.0007	3.45***	-0.0006	3.18***
TEN	-0.0087	0.62	-0.0016	0.11
TENSQ	0.0004	0.93	0.0003	0.59
ln SIZ	0.1200	5.01***	0.0911	3.32***
OCC[b]				
TSA	-0.2245	1.80*	-0.2305	1.87*
SVC	-0.1571	1.27	-0.0993	0.79
PCR	-0.1642	1.52	-0.1398	1.30
OFL	-0.3016	2.83***	-0.2821	2.67***
FFF	-0.6876	2.66***	-0.5900	2.28**
IND[b]				
AFC	-0.1073	0.70	-0.1489	0.99
TPU	0.2833	2.74***	0.2751	2.69***
WRT	0.3890	2.74***	0.3610	2.57**
FIRE	0.6614	2.75***	0.5955	2.49**
SVG	-0.0319	0.27	-0.0387	0.34
RAC[b]	-0.1559	2.01**	-0.4161	2.73***
GEN[b]	-0.6119	5.87***	-0.6546	3.81***
SEMP[b]	-0.1448	1.30	-0.1716	1.55
RAC x ln SIZ			0.0618	1.85*
GEN x ln SIZ			0.0118	0.29
R^2	0.808		0.819	
Adjusted R^2	0.761		0.769	
F Value	17.295		16.344	
N	98		98	

[a] Variables are defined in Table 3.

[b] Two tailed test. Reported t-statistics are absolute values. Single asterisk indicates significance at the 0.10 alpha level; double asterisk indicates significance at the 0.05 alpha level; triple asterisk indicates significance at the 0.01 alpha level.

Table 5. Wage Impact of Employer Size by Race and Gender, Putnam County, Georgia, 1990.

	Proportionate Wage Impact[a]		
	Females	Males	Average
Blacks	0.238	0.215	0.219
Whites	0.115	0.091	0.095
Average	0.164	0.140	

[a] Indicates percent change in wages associated with a one percent increase in employer size, measured by number of employees.

Table 6. Provision of Fringe Benefits by Establishments of Various Sizes[a,b].

	Size Class by Number of Employees					
	1-10		11-25		26+	
Fringe Benefit	Yes	No	Yes	No	Yes	No
Paid Vacation	166 (77.9)	47 (22.1)	143 (88.3)	19 (11.7)	48 (96.0)	2 (4.0)
Paid Sick Leave	123 (57.7)	90 (42.3)	86 (53.1)	76 (46.9)	32 (64.0)	18 (36.0)
Parental Leave	71 (33.3)	142 (66.7)	54 (33.3)	108 (66.7)	23 (46.0)	27 (54.0)
Health Insurance	117 (54.9)	96 (45.1)	127 (78.4)	35 (21.6)	46 (92.0)	4 (8.0)
Dental Insurance	32 (15.0)	181 (85.0)	26 (16.0)	136 (84.0)	12 (24.0)	38 (76.0)
Life Insurance	94 (44.1)	119 (55.9)	112 (69.1)	50 (30.9)	44 (88.0)	6 (12.0)
Retirement Plan	48 (22.5)	165 (77.5)	42 (25.9)	120 (74.1)	25 (50.0)	25 (50.0)
Child Care	4 (1.9)	209 (98.1)	4 (2.5)	158 (97.5)	2 (4.0)	48 (96.0)
Tuition Reimbursement	38 (17.8)	175 (82.2)	36 (22.2)	126 (77.8)	21 (42.0)	29 (58.0)
Bonuses	143 (67.1)	70 (32.9)	117 (72.2)	45 (27.8)	30 (60.0)	20 (40.0)
Stock Ownership Plan	16 (7.5)	197 (92.5)	19 (11.7)	143 (88.3)	7 (14.0)	43 (86.0)
Flex-Hours	106 (49.8)	107 (50.2)	79 (48.8)	83 (51.2)	17 (34.0)	33 (66.0)
Credit Union	11 (5.2)	202 (94.8)	18 (11.1)	144 (88.9)	12 (24.0)	38 (76.0)

[a] Based on responses of 425 establishments. Of the 1252 establishments that provided complete information on employment and benefits provision, 827 (66 percent) responded with a 'Not Applicable' response to benefits questions. Over 99 percent of the 'Not Applicable' responses were from establishments in the 1-10 size class.

[b] The figures below without parentheses are numbers of establishments. The figures in parentheses are percentages of establishments in each size class.

Table 7. Definitions of Establishment and Owner/Manager Variables and Summary Statistics

Variable Name	Definition	Mean	Standard Deviation
EMP	Number of employees	19.173	26.945
EMPR	Ratio of part-time employees to total	0.223	0.237
UNSKR	Ratio of unskilled employees to total	0.293	0.311
AGE	Years the establishment has been in operation	17.673	15.269
EDN	Years of schooling of owner or manager	13.818	2.567
INDEP	Independent, single establishment firm (multi-establishment firm, or franchise dropped)	0.670	
MINORITY	1 if minority-owned business; 0 otherwise	0.048	
GENDER	1 if woman-owned business; 0 otherwise	0.122	
Sectoral Dummies (Wholesale & Retail Trade dropped):			
MCM	Mining, Construction, or Manufacturing	0.210	
SER	Services	0.244	
FIRE	Finance, Insurance, or Real-Estate	0.048	
Ownership Dummy (Partnership/Corporation dropped):			
PROP	Sole proprietorship	0.330	

Estimates are based on 351 observations.

* For continuous variables, EMP, AGE, and EDN, the statistics reported in this table are for levels. In the regression analysis, logarithms are used for these variables.

Table 8. Effects of Establishment and Owner/Manager Characteristics on Fringe Benefit Provision by Small Establishments in 25 Rural Georgia Counties.

	Fringe Benefits											
	Sick Leave		Parental Leave		Health Insurance		Paid Vacation		Bonuses		Flex-Hours	
	Coeff.	t-ratio	Coeff.	t-ratio	Coeff.	t-ratio	Coeff.	t-ratio	Coeff.	t-ratio	Coeff.	t-ratio
Constant	-3.414*	-3.143	-2.267*	-2.002	-1.810*	-1.623	-3.231*	-2.076	0.687	0.628	-0.887	-0.918
EMP	0.174	1.307	0.289*	2.491	0.481*	3.011	0.186	0.956	-0.217*	-1.719	-0.066	-0.519
EMPR	0.041	0.126	0.623*	1.944	-0.210	-0.581	-0.618	-1.483	-0.947*	-2.409	1.011*	3.063
UNSKR	-0.753*	-2.826	-0.486*	-1.934	-0.851*	-3.284	-0.071	-0.210	-0.222	-0.818	-0.825*	-3.298
AGE	0.067	0.834	-0.009	-0.113	0.091	1.030	0.116	1.009	-0.186*	-2.290	0.012	0.156
EDN	1.411*	4.356	0.473	1.150	0.732*	1.795	1.363*	2.767	0.653*	2.016	0.413	1.572
MCM	-0.924*	-4.559	-0.140	-0.709	-0.081	-0.372	-0.415	-1.584	-0.247	-1.124	-0.294	-1.442
SER	0.191	1.011	0.056	0.317	0.458*	2.249	0.215	0.844	-0.740*	-3.894	-0.208	-1.246
FIRE	-0.197	-0.577	0.484	1.508	-0.505	-1.470	-0.814*	-1.804	0.186	0.469	-0.012	-0.034
INDEP	-0.560*	-3.044	-0.155	-0.943	-0.673*	-3.394	-0.534*	-1.865	-0.259	-1.363	0.123	0.754
PROP	-0.325*	-1.909	-0.298*	-1.911	-0.392*	-2.382	-0.580*	-2.664	-0.319*	-1.777	0.077	0.485
MINORITY	-0.373	-1.011	-0.261	-0.758	-0.454	-1.183	-0.602	-1.529	-0.783*	-2.212	-0.055	-0.151
GENDER	-0.490*	-1.868	0.061	0.281	-0.341	-1.446	-0.422	-1.314	0.152	0.526	0.073	0.33

*Significant at 0.10 level based on two-tailed t-test.

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Endnotes

1. Retention and expansion, another currently popular strategy, focuses on existing establishments regardless of size and age. Surveys of business managers and owners are conducted to improve communications between businesses and local public officials and to identify public programs to assist in expansion or retention of existing businesses.

2. A total of 25 counties were included in the survey: Bacon, Brooks, Calhoun, Candler, Chattooga, Clay, Crawford, Dodge, Elbert, Emanuel, Grady, Greene, Haralson, Lumpkin, Macon, McIntosh, Meriwether, Murray, Pickens, Polk, Putnam, Tattnall, Union, Wilkes, and Worth.

3. Since the responses are "Yes"or "No," the appropriate statistical regression procedure is binary probit (Greene, 1991). The regressions we estimate correct for possible selectivity bias in the results due to the large number of "Not Applicable" responses. See Greene (1991), Chapter 20 for details of this procedure.

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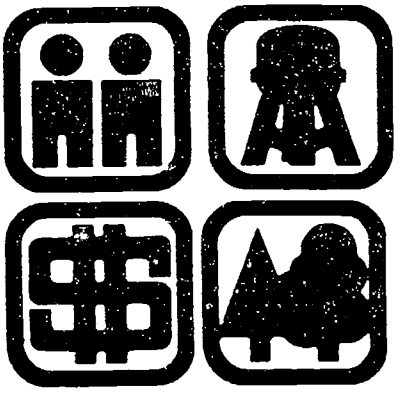

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