

PNABF-602

67170

The Dynamics
of Small-Scale
Industry in Africa
and the Role
of Policy

GEMINI

GROWTH and EQUITY through MICROENTERPRISE INVESTMENTS and INSTITUTIONS
624 Ninth Street, N.W., Sixth Floor, Washington, D.C. 20001

**DEVELOPMENT ALTERNATIVES, INC. • Michigan State University • ACCION International •
Management Systems International, Inc. • Opportunity International • Technoserve • World Education**

The Dynamics of Small-Scale Industry in Africa and the Role of Policy

by

Carl Liedholm

January 1990

This paper reports on work supported by Employment and Enterprise Policy Analysis contract DAN-5426-C-00-4098-00 at Harvard Institute for International Development, subcontracted with Development Alternatives, Inc. (DAI) and Michigan State University as well as by Growth and Equity through Microenterprise Investments and Institutions (GEMINI) Project, contract DHR-5448-C-00-9080-00, at Development Alternatives, Inc. (DAI), subcontracted with Michigan State University. These contracts are funded by the U.S. Agency for International Development (Employment and Enterprise Development Division, Bureau for Science and Technology) in Washington, D.C.

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
 SECTION ONE 	
AFRICAN SMALL-SCALE INDUSTRIES: THE STATIC CONTEXT	3
MAGNITUDE	3
COMPOSITION	4
LOCATION	6
DEMAND FACTORS	6
SUPPLY FACTORS	8
 SECTION TWO 	
AGGREGATE GROWTH OF FIRMS AND EMPLOYMENT: THE MACRO EVIDENCE	11
SIZE	11
LOCATION	14
SECTOR	15
STANDARD PATTERNS	16
 SECTION THREE 	
BIRTHS, DEATHS, AND GROWTH: THE MICRO EVIDENCE	19
FIRM BIRTHS	19
FIRM DISAPPEARANCE RATES	21
Disappearance and Size	22
Disappearance and Location	22
Disappearance and Sector	24
Disappearance and Age	24
FIRM GROWTH	26
Growth of Surviving (Existing) Small Firms	26
Growth and Survival	29
Growth spurts	29
Graduation Issue: Firm Transformation	30

SECTION FOUR	
POLICY IMPLICATIONS	35
DEMAND SIDE POLICY ISSUES	36
SUPPLY SIDE POLICY ISSUES	37
STRUCTURAL ADJUSTMENT POLICY REFORMS	38
POLICY EFFECTS ON EXPANSION OF EXISTING FIRMS	39
SECTION FIVE	
SUMMARY	45
BIBLIOGRAPHY	47

LIST OF TABLES

<u>Table</u>		<u>Page</u>
1.1	Distribution of Employment in Manufacturing by Firm Size — Africa	4
1.2	Composition of Employment in Small-Scale Manufacturing Establishments — Africa	5
2.1	Annual Growth Rate of Numbers of Manufacturing Firms by Firm Size	12
2.2	Annual Growth of Manufacturing Employment by Firm Size	13
3.1	Annual Manufacturing Firm Birth Rates by Size	20
3.2	Annual Manufacturing Firm Disappearance (Death) Rates, by Original Firm Size	23
3.3	Distribution of Dead Small Firms by Two-Year Age Intervals: India and the United States	25
3.4	Origins of Modern Small and Medium Private Manufacturing Firms	32

INTRODUCTION

This paper examines the dynamics of small-scale manufacturing enterprises in Africa and the role of policy in this process.¹ Topics that fall within the purview of firm dynamics include the creation, evolution, and disappearance of firms and the way the patterns that are discernable in small-firm dynamics vary by country, stage of development, industrial sector, and policy environment.

Studies of small-firm dynamics are important because they provide insight into feasible and desirable patterns of growth in manufacturing output and employment. Since small firms dominate the industrial scene in Africa, a deeper understanding of how these firms evolve may make it possible to pursue an industrialization path that builds on these enterprises, thereby leading to potentially more equitable and efficient development than alternatives stressing large-scale firms. Such studies can also uncover ways that policies and programs can facilitate, or at least not impede, industrialization based on small-firm growth.

Dynamic studies can usefully be subdivided into those that follow a macro approach and those that follow a micro approach. On the macro level, researchers have focused on aggregate changes in the size, location, and sector of small-scale firms captured by data across time periods. On the microeconomic level, studies examine the birth and disappearance (death) of individual firms, as well as dynamic activities within firms, such as innovation, reinvestment, and expansion patterns. Of these studies, relatively few have used time-series data collected from specific firms. Other studies, stymied by a dearth of firm-specific data, have resorted to aggregate data to make judgments about dynamics at the firm level.

¹ "Small scale" is defined in this paper in terms of employment, and refers to those firms with 50 workers or less. The term "microenterprise," which is defined in this paper as a firm with 10 workers or less, is sometimes used to depict the lower end of the size spectrum. "Modern" small-scale firms are then defined to have more than 10 employees. "Medium" and "large firms" are defined as those employing more than 50 workers. The establishments examined in this study include those specifically engaged in the production and repair of manufactured goods (ISIC codes 31-39 and 95). Excluded are establishments engaged in mining, construction, trading, and transport, and in financial, social, and personal services.

Most studies of small enterprises in Africa, however, have been undertaken at a single point in time and thus provide only a cross-section snapshot of the distribution of firms. Consequently, these studies have been able to provide only a limited perspective on changes in these firms over time and the impact of policy on this process.

The findings of these static studies are reviewed in the first section of this paper to provide a context for the examination of dynamic issues. Section Two summarizes macro-level evidence of firm dynamics in Africa and seeks to update the material covered in previous studies. In Section Three, aggregate demographics are broken down into their firm-level components: firm birth, closure, and growth patterns. This section provides new findings and attempts to shed additional light on the evolutionary (and devolutionary) process of individual firms. Finally, the effects of policy on small-firm dynamics in Africa are examined in Section Four.

SECTION ONE

AFRICAN SMALL-SCALE INDUSTRIES: THE STATIC CONTEXT

This section briefly discusses the structure of African small industries and the demand and supply forces operating upon them. The information provides a context for the subsequent examination of the dynamic issues.

MAGNITUDE

A marshalling of the available evidence indicates that small-scale firms are a significant and frequently dominant component of the industrial sector of most African countries. Not only are the overwhelming majority of industrial establishments small, these establishments account for the vast bulk of industrial employment in these countries. As a glance at Table 1.1 will indicate, small-scale firms in the six countries with the required data never account for less than 59 percent of total industrial employment; indeed, in one country with complete and accurate data, Sierra Leone, the figure is 95 percent.

Most of the employment is generated by microenterprises, firms with 10 workers or less, and the vast majority of these firms employ fewer than five persons. Studies in Nigeria (Aluko, 1972), Sierra Leone (Chuta and Liedholm, 1985), Ghana (Ghana, 1965), Egypt (Davies et al., 1984), and Zambia (Milimo and Fisseha, 1985) have found that 95 percent or more of the small-scale firms employ fewer than five individuals. Many are simply one-person enterprises. In rural Burkina Faso (Chuta and Wilcock, 1982), for example, 52 percent of the small-scale firms were one-person activities while in Zambia (Milimo and Fisseha, 1985) the figure was 68 percent. Such findings indicate that most small-scale industrial firms in Africa are tiny. In view of their large numbers and generally low incomes (Liedholm and Mead, 1987), they constitute a potentially important target group for policy makers concerned with the poor.

There are relatively few firms, however, that employ 10 to 50 workers and hence they generate relatively little employment. The paucity of firms in this size category is particularly acute in Africa, with the exception of Nigeria. The causes of the "missing middle" in the distribution of firms in Africa need to be ascertained and addressed by policy makers (Kilby, 1988).

TABLE 1.1
DISTRIBUTION OF EMPLOYMENT IN MANUFACTURING BY FIRM SIZE — AFRICA
(in percent)

Country and Survey Date	Firm Size (number of workers)		
	Large Scale 50 or More Workers	Small Scale	
		10-49 Workers	Below 10 Workers (micro)
Sierra Leone - 1974	5	5	90
Rwanda - 1986	6	1	93
Nigeria - 1972	15	26	59 ^a
Ghana - 1970	15	1	84 ^a
Zambia - 1985	16	1	83
Kenya - 1969	41	10	49 ^a

Sources: Computed from Page (1979) and Liedholm and Chuta (1979), Milimo and Fisseha (1985), and Ngirabatware et al. (1988).

Notes: a Computed as a residual, which is the difference between employment recorded in labor force or population surveys (includes all sources and establishment surveys).

Small-scale firms also generate an important portion of the value added of Africa's industrial sectors, although their relative value added contribution usually is not as great as their relative contribution to employment. Nevertheless, small firms' share of total manufacturing value added ranges from 26 to 64 percent. In terms of the entire economy, small firms' share of total Gross Domestic Product (GDP) varies from 2.9 to 8.3 percent (Liedholm and Mead, 1987).

COMPOSITION

What are the most important types of small-scale industrial activities undertaken in Africa? An examination of the data summarized in Table 1.2 indicates that clothing production, primarily tailoring, predominates in the majority of countries. It is particularly important in West Africa, where

TABLE 1.2
COMPOSITION OF EMPLOYMENT IN SMALL-SCALE MANUFACTURING ESTABLISHMENTS —AFRICA
(in percent)

Item	Sierra Leone Entire Country 1976	Nigeria Mid-Western, Kwara, Western, and Lagos States 1972	Ghana Accra 1972	Cameroon Yaoundé 1978	Burkina Faso Eastern ORD 1980	Tanzania Dar and 20 Major Townships 1966-67	Kenya Central Province Village Centers 1977	Zambia all except Copperbelt Provinces and Lusaka 1985	Egypt Two Rural Governorates 1982
Clothing Products	51	56	46	48	25	26	22	6	38
Food Products	20	11	12	16	1	19	43	32	24
Metal Products	18	4	2	5	8	5	6	4	5
Food/Agricultural Processing	5	2	5	1	55	9	22	55	12
Other	6	27	35	30	21	41	7	3	20

Sources: Sierra Leone: Liedholm and Chuta (1976); firms below 50 persons.
Nigeria: Aluko et al. (1972 and 1973); firms below 50 persons; enterprise, not employment percentages.
Ghana: Steel (1979); firms below 5 full-time wage employees.
Cameroon: Steel (1979); firms below 5 full-time wage employees.
Burkina Faso: Chuta and Wilcock (1982); firms below 50 persons.
Tanzania: Schadler (1960); firms below 10 persons; enterprise.
Kenya: Norcliffe, Freeman, and Miles (1984); firms below 50 persons.
Zambia: Kilimo and Fisseha (1985).
Egypt: Davies et al. (1984).

25

clothing accounts for one-half of all small enterprise employment. Clothing is much less dominant in East Africa, especially in Zambia. Wood production, primarily charcoal preparation and furniture making, is important, with metalworking (usually blacksmithing), food production (primarily baking and brewing), vehicle, shoe, electrical, and bicycle repairs also found with some frequency. In the rural areas of some countries, such as Burkina Faso, Zambia, and Botswana, beer brewing, which is usually undertaken by women, is a dominant activity. In sum, small-scale firms produce light consumer goods such as clothing, furniture, food, and drink.

LOCATION

Where are most of the small industries located? A surprising yet important finding is that in most countries the vast majority are located in rural areas.² Moreover, employment in small rural manufacturing industries often exceeds that generated by all urban manufacturing firms. In Sierra Leone, for example, 86 percent of the total industrial sector employment and 95 percent of the industrial establishments were located in rural areas (Chuta and Liedholm, 1985). In Zambia, an estimated 64 percent of industrial employment was rural (Milimo and Fisseha, 1985). Similar findings have been reported in other parts of the world (Liedholm and Mead, 1987). Official figures generally understate the true magnitude of rural industry because country censuses often fail to pick up the smallest of the rural industries.³

DEMAND FACTORS

Most of the products made in small-scale firms are simple consumer goods that cater primarily to the needs of relatively low-income urban and rural households. Consequently, a key issue is whether or not the demand for these types of products increases as local income increases. Entrepreneurial surveys in Africa typically indicate that lack of demand is an important constraint facing most small firms. Although some have argued that these types of products are "inferior

² The U.N. definition of rural — localities with fewer than 20,000 inhabitants — is used in this paper. The conclusions do not change markedly if other definitions are used.

³ Detailed surveys conducted in Sierra Leone (Liedholm and Chuta, 1976) and Zambia (Milimo and Fisseha, 1985) discovered that rural manufacturing employment was approximately twice the official estimate.

goods," the few empirical studies indicate that there is a strong, positive relationship between local income and the demand for small-scale industry products. In Sierra Leone, for example, King and Byerlee (1978) report that an income increase of 10 percent would increase the demand for the products of small-scale firms by almost 9 percent. A later study in the Gusau region of Nigeria reports similar results (Hazell and Roell, 1983).⁴ Moreover, Haggblade, Hazell, and Brown (1988) have estimated that these consumption linkages account for 80 percent of the total agricultural growth multipliers in Africa. Consequently, the growth of demand for small-scale industry products would appear to be closely linked to corresponding increases in household incomes, particularly among the rural and low-income segments of the population.

A second source of demand for small-industry products stems from their backward and forward production linkages with other segments of the economy. In general, these sources of demand appear to be less developed in Africa than in other parts of the developing world. In agriculture, for example, the interindustry linkages are weaker in Africa than in Asia due primarily to the lower levels of mechanization and irrigation in Africa (Haggblade, et al., 1988). The forward production linkages from agriculture, however, can be quite important in some areas, such as rice and oil palm processing in West Africa (Spencer et al., 1976 and Miller, 1965). The production linkages with large-scale industry also are weak in Africa; very few subcontracting relationships between large and small industrial firms appear to have been developed as yet. This may be due to the small markets and the tendency of foreign-owned import substitution firms to import a large share of their inputs; it may also be attributable to the rudimentary development of legal systems, making enforcement of contracts uncertain and costly (Mead, 1989).

Government and foreign customers provide the final sources of demand for small-scale industries. Although sometimes important for particular specialty products, such as gara dyed cloth from Sierra Leone (Chuta and Liedholm, 1985) or baskets from Botswana (Haggblade, 1984), these sources of demand are relatively minor in Africa (Liedholm and Mead, 1987).

⁴ The results derived from cross-section studies may differ somewhat from the expenditure patterns that actually develop over time. To the extent that substitute goods — synthetic textiles, plastic utensils — produced by large-scale enterprises replace traditional products, the demand for small-scale manufactured goods will fall. Because this change — along with other shifts in taste and relative prices — occurs over time, it is not picked up in cross-section expenditure surveys, and hence the latter's expenditure coefficients may be somewhat of an overestimate.

SUPPLY FACTORS

With respect to supply, the key issue is whether or not small-scale industrial firms in Africa are efficient users of economic resources, particularly when compared with their larger-scale counterparts. Both partial and comprehensive measures of economic efficiency have been used in attempting to answer this question.

The labor-capital (labor intensity) and the output-capital (capital productivity) ratios are the economic efficiency measures most frequently used in empirical studies. These partial efficiency measures are based on the assumption that labor is abundant and capital is the only scarce resource. All the aggregate and most industry studies in Africa reveal that small-scale industries generate more employment per unit of scarce capital than their larger-scale counterparts. The available evidence on relative capital productivities is somewhat limited and more mixed. Yet, in the majority of African countries where such comparisons have been made, the output per unit of capital among small producers is found to exceed that generated by large industry (Page and Steel, 1984 and Liedholm and Mead, 1987).

Only a few studies have used one of the analytically more correct comprehensive economic efficiency measures, in which all scarce resources are included in the analysis and are evaluated at "shadow" or social prices that reflect their scarcity values in the economy. In Africa, such studies are rare. Liedholm and Mead (1987), however, used a social benefit-cost analysis to compare the relative efficiency of small and large industries in Sierra Leone. A key finding from this analysis was that in all of the individual industrial groups examined, the social benefit-cost ratios of the small firms not only exceed one, but also were greater than the comparable ratios for the large-scale firms. These findings, while not conclusive, provide strong evidence that micro and small-scale industries can be economically efficient in Africa.

The efficiency of individual African firms, however, varies by their production characteristics, particularly their size, input and output composition, and location. A review of various industry surveys (Liedholm and Mead, 1987) reveals some important patterns. The firms most likely to be economically efficient tend to possess a number of characteristics, many of which the visitor can see. Such firms generally use hired workers, operate in workshops away from the home, operate in

localities with more than 2,000 inhabitants, and are involved in selected product lines with better economic prospects, such as tiles, furniture, baking, and repair activities. A particularly striking finding is that the one-person firms are frequently on the margin of economic viability. Judiciously and cautiously applied, such indicators can provide the analyst with useful insights into those types of industries most likely to be economically viable in Africa.

SECTION TWO

AGGREGATE GROWTH OF FIRMS AND EMPLOYMENT: THE MACRO EVIDENCE

What evidence can aggregate data offer on African small-enterprise dynamics? Aggregate data help to identify general patterns of structural change in an economy, without identifying the path followed by particular firms. The evidence to date is reviewed below.

SIZE

The absolute number of micro and small enterprises is increasing in Africa as well as in other regions. Relative growth in number of firms appears to be highest in those firms with 2 to 9 and 10 to 49 workers, and lowest in one-person enterprises (Table 2.1).⁵ In some countries, the number of one-person firms is declining in absolute terms.

Related to changes in the size structure of firms are changes in the employment generated by firms of different size groups. As shown in Table 2.2, employment is rising in the combined micro and small category of firms as well as the medium- and large-size categories. In over one-half of the countries, however, small- and micro-firm employment is growing more slowly than medium- and large-firm employment, shifting the relative balance of employment toward larger enterprises in most countries.

⁵ This finding is consistent with theories of industrialization that hypothesize a declining household enterprise sector, first relatively then absolutely, as an economy develops. For a discussion of the theory and empirical evidence on structural transformation, see Biggs and Oppenheim, 1986, and Anderson, 1982. This subject will be explored further at the end of this section.

TABLE 2.1
ANNUAL GROWTH RATE OF NUMBERS OF MANUFACTURING FIRMS
by Firm Size
(in percent)

Region/Country	Dates	Size of Establishment (# workers)			
		Micro		"Modern" Small	Medium & Large
		(1)	(2-9)	(10-49)	(50+)
Africa					
Sierra Leone	1974-80				
Overall		-4.2	3.5	12.7	1.0
Rural		-9.4	2.6	13.0	-
Other					
Colombia	1970-78	1.8	-	13.4 ^a	7.9 ^a
India	1961-71				
Overall		2.8	4.1	5.9	5.3
Rural		1.9	3.2	7.3	7.7
Philippines	1967-75	0.2	7.0	6.5 ^b	3.7 ^c
Taiwan	1971-81	-1.1 ^d	11.5 ^e	11.9 ^e	9.1 ^e

Sources:

- Colombia - computed from data in Cortes et al., 1987.
- India - computed from data in Little et al., 1987.
- Philippines - computed from data in Anderson and Khambata, 1981.
- Sierra Leone - Liedholm and Mead, 1987.
- Taiwan - computed from data in Taiwan Census of Commerce and Industry, 1984.

Notes:

- a Figures show growth in employment rather than number of firms.
- b Firm size 10-99.
- c Firm size 100+.
- d Data for firms with 1-3 workers (1961-71), from Little et al., 1987.
- e For firm size categories 2-19, 20-99, and 100+.

TABLE 2.2
ANNUAL GROWTH OF MANUFACTURING EMPLOYMENT BY FIRM SIZE
(in percent)

Region/ Country	Dates	Growth in - Employment -	
		Micro/ ^a Small	Medium/ ^b Large
Africa			
Ghana	1960-70	7.1	12.1
Sierra Leone	1974-80	4.6	2.4
Kenya	1978-85	8.2	2.9
Other			
India	1961-71	15.3	9.2
Philippines	1967-75	1.6 ^c	5.0 ^c
Turkey	1970-77	3.6	7.1
Colombia	1970-75	7.1	8.2

Sources:

Colombia - computed from data in Cortes et al., 1987.
 Ghana - computed from data in Steel, 1981.
 Kenya - computed from data in Kilby, 1987.
 Philippines, Turkey, India - Anderson, 1982.
 Sierra Leone - Liedholm and Mead, 1987.

Notes:

- a "Micro/Small" is firms with fewer than 50 employees.
- b "Medium/Large" is firms with 50 or more employees.
- c For the Philippines, "small" is firms with fewer than 100 employees, "large" is firms with 100 or over employees.

In absolute terms, however, the micro and small firms in these countries generate more new jobs than their larger-scale counterparts. Given the larger number of small firms, more jobs are created even at a slower growth rate (Liedholm and Parker, 1989).⁶

LOCATION

The location of small firms may also change as the economy evolves. As population, income, and urbanization grow, greater scale economies can be achieved in production, resulting in the development of larger firms in urban areas.⁷ Has there indeed been a concurrent growth in urban densities and firm size?

For most countries, the majority of small industries are located in rural areas, and rural manufacturing employment generally exceeds urban manufacturing employment.⁸ How has this profile changed over time? Chuta and Liedholm analyzed employment change by locality size in Sierra Leone for the period 1974 to 1980. Overall, they found higher growth in manufacturing employment in the largest localities (population over 20,000).⁹

Locational changes can be disaggregated by sector as well as by size of firm. In Sierra Leone, food processing and repair work showed the highest overall growth in localities of all sizes, while

⁶ By simple algebra, small firms will generate more jobs than large firms as long as the ratio of the number of small to large firms is greater than the inverse of their relative growth rates. For example, in Ghana, small firms outnumber large firms nine to one. To create as many new jobs in large as small firms, large-firm employment would need to grow at nine times the rate found in small firms. The annual employment creation rates necessary for large firms to match small firms' employment creation rates are presented here for six countries (actual growth rates in parentheses): Sierra Leone: 99.9 percent (2.4 percent); Ghana: 62.7 percent (12.1 percent); India: 43.5 percent (9.2 percent); Colombia: 10.5 percent (7.9 percent); Philippines: 5.7 percent (5.0 percent); Turkey: 7.6 percent (7.1 percent). It appears that the absolute employment gap is shrinking most quickly in the countries with highest per capita incomes.

⁷ For a more complete discussion of the locational aspects of firm growth, see Anderson, 1982.

⁸ Liedholm and Mead, 1987.

⁹ Chuta and Liedholm, 1985. It should be noted that Chuta and Liedholm's Sierra Leone study focused solely on microenterprises, so relative rural-urban employment may change somewhat when firms of all sizes are enumerated. Given that larger firms were generally based in larger population centers, however, adding larger firms should only strengthen the results found with microenterprises only.

traditional activities (such as weaving), the slowest growing sector overall, showed negative absolute growth in the smallest localities.¹⁰

SECTOR

The sectoral composition of small manufacturing firms also shifts over time. This is one facet of the structural transformation that accompanies rises in per capita income. Time-series and cross-country studies show a movement from light manufacturing to intermediate and then to capital goods manufacturing as incomes increase (Chenery et al., 1986). Most African countries fall into the lowest income level, and thus light manufacturing activities tend to predominate.

Even within sectors, shifts are occurring, particularly away from traditional toward more modern goods. This is especially the case within the light consumer goods sector, but also occurs within other sectors, such as metal-working and repairs.¹¹ In light manufacturing, for example, small firm activity typically shifts from weaving to tailoring and from traditional mats to modern furniture manufacturing (Anderson and Khambata, 1981, and Liedholm and Mead, 1987). Such an evolution not only affects the composition of employment, but also results in a general shift away from the types of activities dominated by women.

These sectoral shifts are accompanied by changes in firm size. Typically, firm size increases with the movement from traditional light manufacturing to capital good manufacturing. Indeed, the size distribution of firms is closely linked to a country's industrial composition. In exploring the determinants of firm size, Biggs and Oppenheim (1986) found that the sectoral composition of output was a more powerful determinant of the size distribution of firms than was intraindustry competition between firms.

¹⁰ Chuta and Liedholm, 1985.

¹¹ Light manufacturing includes food, beverages, tobacco, textiles, and wood and wood products (ISIC 31-33).

STANDARD PATTERNS

What picture thus emerges of the "standard" evolution of firm size and structure as the level of economic development increases? Although experience varies widely between countries, some general patterns appear to hold. At low levels of per capita income, the representative firm is likely to be a one-person, household-based firm producing traditional goods in the rural area. As per capita income rises, the firm is likely to be somewhat larger — either a nonhousehold microenterprise or a small- to medium-scale factory — and engaged in manufacturing modern consumer or intermediate goods in a small urban locality. Finally, at the highest levels of per capita income, the representative firm is an even larger-scale entity operating in larger urban localities.¹²

These evolutionary patterns are consistent with results emerging from the previously reviewed studies that examined how static economic efficiency varies by type of firm.¹³ These studies indicate that economic efficiency tends to be higher for those firms that are (1) somewhat larger — indeed, there appears to be direct relationship between efficiency and firm size within the micro- and small-enterprise size categories; (2) operating in workshops away from the home; (3) located in larger localities; and (4) involved in more modern product lines, such as baking, tailoring, carpentry, metal-working, and repair (Liedholm and Mead, 1987 and Cortes et al., 1987). It is precisely these types of firms that become relatively more important as per capita incomes rise.

The industrial evolutionary process is an extremely complex one. Attempts to explain it must, of necessity, incorporate both static and dynamic supply and demand factors and how they interact. Demand factors, for example, would include secular changes in the size of markets and demand shifts towards products where scale economies are more important. On the supply side, technological and input supply factors, among others, would play a role. Short-run variations in the aggregate level of

¹² See Staley and Morse, 1965, and Anderson, 1982.

¹³ Although these studies (for example, Liedholm and Mead, 1987 and Cortes et al., 1987) are, unfortunately, static in nature, most do employ comprehensive measures of economic efficiency — such as total factor productivity, or economic rate of return).

economic activity may make it difficult to delineate these longer-term patterns.¹⁴ Government policies, affecting both the demand and supply factors, would also have a crucial influence on this process.

A few attempts have been made recently to explain these evolutionary patterns of firm size, and have generated important new insights into this process.¹⁵ Of necessity, however, these studies have been based on aggregate firm data and thus have been able to provide only a partial picture of this process.

A more complete picture requires micro data on the births, deaths, and growth of individual firms. Do smaller firms generally tend to disappear, to be replaced by new larger firms, or do the smaller firms simply grow? What is the process by which existing firms grow? Are policy or other constraints restraining an inherent tendency for existing firms to grow over time? These questions can only be answered with micro data on the births and deaths, as well as on the growth, of individual firms. Such data are scarce since most studies of individual firms in developing countries are static in nature. The limited microeconomic evidence must now be examined in an attempt to shed more light on this incomplete picture of firm dynamics.

¹⁴ These short-run fluctuations particularly affect the components of growth: firm birth, death, and expansion. Lack of time-series data on annual births, deaths, and expansion figures in developing countries confounds attempts to relate these variable to the levels of economic activity. Were the data available, two questions could be asked: First, do birth, death, and expansion rates of small firms vary depending on the level of economic activity? Second, what is the relative effect of changes in the level of economic activity on small versus large firms?

¹⁵ See, for example, Biggs and Oppenheim, 1986.

SECTION THREE

BIRTHS, DEATHS, AND GROWTH: THE MICRO EVIDENCE

The net growth of micro and small enterprises cannot be properly analyzed without examining the three component elements: births, disappearances (deaths), and expansion.¹⁶ Each will be considered in turn.

FIRM BIRTHS

Data on micro- and small-firm births in developing countries are sparse. Table 3.1 shows evidence from one African country, Sierra Leone, along with figures from Colombia. The data show firm birth rates in Sierra Leone to be quite high, 12.8 percent annually. Birth rates for Colombia are somewhat lower, but still exceed 8 percent annually.

For Sierra Leone, firm birth rates have also been calculated by size of locality. Birth rates were highest in the largest localities at 14.9 percent, and lowest in the most rural localities at 10 percent, as shown in Table 3.1. These results, when combined with the disappearance figures discussed below, confirm the aggregate findings that, over time, the number of firms in urban areas is increasing relative to the number of firms in rural areas.

¹⁶ Birth rates are calculated by dividing all new firms appearing during a given time period by the total number of firms already in existence at the beginning of the time period. The longer the time period, the greater the downward bias in birth rates, as more firms can both appear and disappear within the time period, thereby avoid being counted as new firms.

Disappearance (death) rates are calculated by dividing all firms that can no longer be located at the end of a given time period by the total number of firms in existence at the beginning of the time period. Death rates presented in this paper are simple rather than compound (logarithmic) rates. Simple death rates are lower than compound death rates, since they do not account for an annual decay factor in total number of firms.

TABLE 3.1
ANNUAL MANUFACTURING FIRM BIRTH RATES BY SIZE
(in percent)

- Population Levels -

Region/Country	Dates	Under 2,000	2,000 20,000	Over 20,000	Average
Africa:					
Sierra Leone ^a	1979-80	10.0	10.8	14.9	12.8
Other:					
Colombia ^b	1970-75	-	-	8.1	8.1

Sources:

Sierra Leone - computed from Chuta and Liedholm's 1980 survey.
Colombia - reported in Cortes et al., 1987.

Notes:

- a Data on Sierra Leone cover a one-year period only to avoid the downward bias inherent in using a longer time period (see footnote 12). While a longer time period would improve the accuracy of this figure, annual lists of new firms were not available for Sierra Leone.
- b The Colombia figure presented above, cited in Cortes et al. (1987), covers Bogota and Cali for the time period specified. The specific method of generating this figure is not given. The figure is based on a data set with incomplete coverage of small firms, thus is expected to be biased downward.

No evidence has yet been uncovered relating birth rates to firm size in developing countries.¹⁷ However, given a population of new firms, it is possible to define how many of the new firms fall into each size category.

¹⁷ Recent work in the United States (Phillips, 1988) shows that small firms (fewer than 500 employees) have much higher birth rates than large firms (over 500 employees). Furthermore, year-to-year variations in birth rates appear to be greater for small than large firms. Small-firm birth rates range from 8.9 to 12.1 percent, while large-firm birth rates range from 2.4 to 4.9 percent. Results also show that variations in birth rates are greater than in death rates, suggesting that oscillations in the net number of firms (as seen in business cycles) are driven more by changes in firm birth rates than changes in firm death rates.

FIRM DISAPPEARANCE RATES

The second element determining the net growth rate of firms is firm mortality. To put it in a more optimistic vein, once firms have been created, what is their probability of survival? Data on firm mortality in Africa are available for Sierra Leone and Nigeria, where surveys were carried out in the period 1974-1980. Firm mortality studies have also been carried out in Colombia, the Philippines, India, and the United States.¹⁸

When is a firm considered "dead"? In most surveys, a dead firm is one no longer operating in its listed activity at its previous location.¹⁹ Consequently, a dead firm does not necessarily constitute a business failure, since it may, for example, have voluntarily changed locations or shifted to other lines of activity. Exact figures on what percentage of deaths are closures of viable firms — such as due to retirement or death of the proprietor, or changing location or activity — and what percentage can be attributed to business failure are unfortunately rather scanty. Closure of viable firms, however, may be a significant proportion of total deaths. In Sierra Leone, for example, Chuta and Liedholm (1985) reported that 20 percent of the dead firms simply changed locations.²⁰ This cautionary note must be kept in mind when interpreting the death figures for firms.

A review of the available evidence, which is presented in Table 3.2, indicates that mortality rates vary widely, ranging from 1.3 percent to 12.5 percent annually. Firm mortality might be expected to vary by the size, location, sector, and age of the enterprise. Each of these relationships will be briefly examined.

¹⁸ Cortes et al., 1987 (Colombia); Chuta and Liedholm, 1982 (Sierra Leone); Frischman, 1988 (Nigeria); Anderson and Khambata, 1981 (Philippines); Nag, 1980 (India); Phillips and Kirchhoff, 1988 (United States).

¹⁹ In India, it refers to firms nonexistent or dead firms not traceable (Nil or Not to be Punched) on the census forms, while in the United States it refers to a firm no longer listed on the U.S. Establishment Longitudinal Microdata file of the SBA (Phillips and Kirchhoff, 1988).

²⁰ In Quito, Ecuador, a recent study has indicated that 68 percent of the micro firms that had disappeared had changed locations, mainly tied to issues of housing; most remained in the same area (Middleton, 1989). In the United States, it is alleged that 75 percent of business terminations are voluntary.

Disappearance and Size

Mortality rates are negatively related to firm size. The highest disappearance rates are to be found in the microenterprise category, with data from Nigeria and Sierra Leone showing annual mortality rates for microenterprises at around 10 percent, a rate slightly lower than for U.S. firms in the same size category, at 12.5 percent.²¹ In Quito, Ecuador, the disappearance rate for micro firms is less, at 9 percent (Middleton, 1989). For modern small and medium firms, mortality rates are lower, ranging from 1.3 to 8.3 percent annually.

The Sierra Leone and Nigeria studies covered microenterprises only, so comparisons with other size groups were not possible. The Nigerian study (Frischman, 1988), however, used another measure of size — initial investment — to distinguish between firms within the 1 to 9 worker size group. Results showed that surviving Nigerian firms had initial investments over twice the size of disappearing firms.

Mortality rates for different firm size categories were available in Colombia, the Philippines, and the United States. In each country, the larger the firm size category, the lower the disappearance rate.

Disappearance and Location

The evidence on this relationship is rather meager. Data from Sierra Leone (Chuta and Liedholm, 1982) indicate that rural firms have a higher mortality rate than urban firms. Firms in Freetown had a mortality rate of 9.5 percent, as compared with the 11.1 percent mortality rate of rural firms.

²¹ African microenterprise mortality rates may include several offsetting effects. First, micro firms acting as a "sponge" for low opportunity cost labor may remain open even in lean times in the face of few and dwindling alternative uses of labor. On the other hand, the smallest businesses may be the most fungible. Repair work, for example, could easily be picked up or dropped depending on demand for services, while larger-scale plants would be more difficult to open or close.

TABLE 3.2
ANNUAL MANUFACTURING FIRM DISAPPEARANCE (DEATH) RATES,
BY ORIGINAL FIRM SIZE
(in percent)

Region/ Country	Dates	Modern			Total
		Micro (1-9)	Small (10-49)	Medium (50-199)	
Africa					
Sierra Leone	1974-80	10.3	-	-	-
Nigeria	1974-80	10.4	-	-	-
Other					
Colombia ^a	1965-71	-	7.7 ^a	3.1 ^a	5.0
Ecuador	1974-82	9.0	-	-	-
Philippines ^a	1975	-	5.1 ^b	-	-
	1972	-	3.5 ^c	1.3 ^c	-
USA	1976-82	12.5 ^d	-	8.3	10.0

Sources:

Colombia - computed from data in Berry and Pinell-Siles, 1979.

Ecuador - computed from data in Middleton, 1989.

Nigeria - computed from data in Frischman, 1988.

Philippines - computed from data in Itao, 1980, and Anderson, 1981.

Sierra Leone - computed from data in Chuta and Liedholm, 1982.

United States - computed from data in *The State of Small Business*, 1983, and Phillips and Kirchhoff, 1988.

Notes:

a Small modern = 10-24 workers, Medium = 25-49 workers.

b Small modern = 5-99 workers.

c Small modern = 5-19 workers; Medium = 20+ workers.

d Micro = 1-19 workers.

e Data from Colombia and the Philippines uses crude rather than age-specific death rates, due to their reliance on aggregate rather than firm-specific data. This leads to an underestimation of the mortality rate.

Disappearance and Sector

Firm mortality may also vary by sector. Unfortunately, analysis of the industry-specific nature of firm mortality is complicated by size characteristics of the samples. For example, in Nigeria, microenterprise mortality rates were highest in car repair, barbering, shoe repair, calabash bowls, and weaving, and lowest in dyeing, printing, hotel-food businesses, mattress making, woodwork, and electrical work (Frischman, 1988). Because the study only examined microenterprises, however, these results may reflect a growth of firms out of the microenterprise size category rather than shifts between sectors.²²

Disappearance and Age

There is an important relationship between firm age and firm mortality. Data from Sierra Leone, India, and the United States all indicate that most deaths occur during the early years of a firm's existence.

Although detailed African data are lacking, some evidence of age-specific deaths of micro firms do exist for India (Nag, 1980) and the United States (Phillips and Kirchhoff, 1988). These are portrayed in Table 3.3. Indian data, in particular, reveal that almost two-thirds of all firm deaths take place during a firm's initial three to four years. A similar pattern emerges from the more limited U.S. data.

What are the survival chances of an African micro firm during the early years of its existence? Unfortunately, age-specific death figures do not exist for any African country. The 1980 Sierra Leone study did reveal that 37 percent of the new firms formed in 1974 were still in existence after six years, but it could not ascertain the specific years in which the nonsurviving firms died (Chuta and Liedholm, 1982). However, by applying the yearly age-specific death rates for India to these Sierra Leone data — a procedure based on the somewhat heroic assumption that the Indian and Sierra Leone death rate profiles would likely be similar — a crude approximation of the chances of a representative

²² While the U.S. data are useful to compare mortality between small, medium and large firms, they do not distinguish between industries within manufacturing, which are the units of interest in this section of the paper.

TABLE 3.3
DISTRIBUTION OF DEAD SMALL FIRMS BY TWO-YEAR AGE INTERVALS:
INDIA AND THE UNITED STATES^a
 (percent closed)

Age at Death	India	United States
1-2	21.0	40.7 ^b
3-4	43.7	45.5
5-6	18.1	13.8
7-8	9.0	-
9-10	5.1	-
11+	3.1	-
Total	<u>100.0</u>	<u>100.0</u>

Sources:

India - Nag, 1980.

United States - Phillips and Kirchhoff, 1988.

Notes:

- a The figures in this table show the distribution of actual establishment deaths over an 11-year time period in India and a six-year time period in the United States. The figures cover dead firms only, and thus indicate nothing about likelihood of firm survival in either country. The U.S. data cover firms that both appeared and died in the period from 1976 to 1986, as recorded in the 1976-1986 U.S. Establishment Longitudinal Microdata files of the U.S. Small Business Administration. The Indian study examined dead firms of all ages over the period 1961-1974.
- b Includes only nongrowth firms.

microenterprise in Sierra Leone surviving during each of its first six years can be obtained (Liedholm and Parker, 1989). On the basis of these calculations, such a firm has a 92 percent chance of surviving through the first year; the firm's survival rate is 81 percent through year two, 64 percent through year three and 50 percent through year four. If it lasts beyond that point, however, the firm's chances of continued survival become somewhat brighter — a survival chance of 42 percent through year five, for example, and 37 percent through year six.

Given age-specific mortality rates, a higher-than-average death rate in a particular time period may, in part, be explainable by a higher-than-average firm birth rate approximately three years

previously. This hypothesis was tested for small business failures in the United States. Swain and Phillips (1985) found that firm failure rates were positively related to the firm birth rates in the three previous years, a relationship that held across all firms and in industry-specific analyses. They concluded that high firm mortality rates are a sign of a surge in the economy in an earlier period: given firm life cycles, a higher death rate will appear shortly after a period of high firm creation. One would expect similar findings in Africa, but lack of data precludes such calculations.

FIRM GROWTH

The final component determining net growth is the expansion of surviving firms. After first examining the available evidence on the growth rates of existing firms in Africa, the information on growth spurts — periods of very fast growth — will be reviewed, followed by an examination of the transformation or graduation of micro into small and medium enterprises.

Growth of Surviving (Existing) Small Firms

The growth rates of surviving (existing) small and micro enterprises in Africa and other developing countries tend to be quite high. In Colombia, employment in the small-scale metalworking industries, for example, increased at an annual rate of 15.4 percent from 1973 to 1977 (Cortes et al.), while in India the annual rate of growth of employment in the six small enterprise subsectors analyzed was 16.1 percent (Little et al., 1987).

Similar high growth rates have been reported in the few African studies that have examined this issue. In northern Nigeria, Chuta (1989) found that the annual growth in employment in existing firms was 15.6 percent. The firms in the clothing and wood subsectors grew the most rapidly, while those in the metalworking subsectors grew the least.

However, although the mean growth rates for existing firms are high, a sizeable group of surviving firms in Africa did not grow at all. In northern Nigeria (Chuta, 1989), for example, 32 percent of the urban micro firms had added no workers. Almost 50 percent of these no-growth firms had been in existence over four years, so it was not just the young firms that had not expanded. Somewhat surprisingly, perhaps, the largest percentage of nongrowth firms were not the smallest (for example, 1

to 2 person firms) but rather were those in the 3 to 5 person category, which also had a larger percentage of older (5 years of age or more) nongrowth firms. Firms in the 1 to 2 person range were thus more likely to either grow or disappear. An even more extreme case of limited expansion of existing firms emerges from Chuta and Liedholm's Sierra Leone study (1985). An analysis of the responses from the 140 manufacturing firms in the 1980 survey that had been previously enumerated in 1974 reveals that 58 percent did not expand at all. Results from this study also indicate that an inverse relationship exists between locality size and the percentage of no-growth firms. In the smallest rural localities in Sierra Leone (less than 2,000 inhabitants), for example, none of the enumerated firms had expanded, while in Freetown, with 100,000 inhabitants, only one-third of the firms failed to expand, a figure similar to that found for northern Nigeria.

Do these growth rates of existing firms vary by age? Studies of the life-cycle aspects of firm growth are rare in any country; yet the age of firms may be an important determinant of firm dynamics. Evans (1987), for example, has found in the United States that firm growth, as well as firm failure and the variability of growth, declines as firms age. The negative relationship between growth and age held for 76 percent of the U.S. industries examined.

Similar evidence from Africa and the other developing areas is sparse. In India, employment growth rates of existing firms and age in the six industry groups studied were inversely related. A similar result was found in the small-scale metalworking industry in Colombia. The drop in growth rates became particularly acute once the firms reached the age of 10. An exception to this generally inverse relationship sometimes occurs in the 5 to 10 year age category.

A similar pattern emerges from Chuta's study of northern Nigerian firm dynamics, one of the few that has examined this relationship in Africa. A strongly inverse relationship between growth rate of employment and age of existing firms was found in all the industry subsectors studied (Chuta, 1989). These and the previously described results point to the importance of age as a factor in determining industry dynamics.

Do these growth rates of existing firms also vary by size of firm? This particular relationship has been the subject of much attention because of its implications for the size distribution of firms and market concentration. Specifically, analysts have been attempting to verify empirically Gibrat's Law,

which states that firm growth is independent of firm size. If this Law holds, it implies an increasing concentration of output in the hands of the largest firms.²³

Until recently, most empirical studies in developed countries could find little or no correlation between growth rates and size. These studies, however, focused primarily on the larger firms. More recent analyses that have included the smaller firms have found severe departures from Gibrat's Law (Evans, 1987 and Hall, 1987), with firm growth inversely related to firm size.²⁴ Evans found the negative relationship held for 89 percent of the industries he examined in the United States. This inverse relationship held even after controlling for sample censoring, which arises because of the exit (death) of slow-growing firms from the sample.

Studies of this relationship in developing countries have been rare. In Colombia, however, Cortes et al. (1987) found a strongly negative relationship between the growth rate of employment and initial size of existing metalworking firms. For firms with 1 to 5 workers, the annual employment growth rate was 38.3 percent, while for similar firms with 31 workers or more, the annual growth rate was only 10 percent.

Recent evidence from northern Nigeria paints a similar picture. For firms that begin with 1 to 2 workers, the annual employment growth rate was 35 percent, while for firms that begin with 10 workers or more, the annual growth rate was negative (Chuta, 1989).

These initial studies from developing countries, along with the recent small-firm research in the United States, indicate that firm growth is inversely related to firm size. Gibrat's Law is thus not a reasonable assumption, particularly in developing countries where small firms account for the vast majority of firms in most industries. If small firms do indeed grow more rapidly on the average than their larger-scale counterparts, the tendency towards increasing inequality of firm size over time implied by Gibrat's Law would tend to be moderated and in certain cases could be checked entirely.

²³ Stochastic growth processes adhering to Gibrat's Law generate a log-normal size-distribution (in other words, a bell shaped curve skewed to the right when relating size and percentage of sales [or workers] of firms, in which a few large firms ultimately dominate the market). See Scherer, 1970.

²⁴ The departures from Gibrat's Law are severe for small firms, but become less severe when only larger firms are analyzed (Evans, 1987).

Growth and Survival

Are the survival probabilities of new small firms enhanced if they grow? Evidence in Africa and other developing countries is nonexistent on this issue.

Recent research in the United States, however, offers tantalizing evidence that the survival probability of small firms increases with growth. Phillips and Kirchhoff (1988), using the 1976-1986 U.S. Establishment Longitudinal Microdata files, discovered that the six-year survival rate of micro (1 to 4 employees) firms experiencing some growth was almost three times that of firms with zero growth.

Growth spurts

Much of this growth of surviving firms does not occur gradually, but rather takes place rapidly for a limited period. These periods of very fast growth can frequently be critical junctures in the evolution of the firm, but are unfortunately rarely studied.

One of the few studies to examine these growth spurts, Chuta's survey of micro and small-scale enterprises in northern Nigeria (1989), found that over two-thirds of the interviewed firms had experienced limited periods of "very fast growth."²⁵ What was the size of the firm when the biggest growth spurts occurred? In northern Nigeria, it was the smallest firms (1 to 2 employees), and small and medium firms (10 or more employees) that experienced the greatest number of growth spurts, while the 6 to 9 employee firm experienced the least. When did these growth spurts most likely occur? Although firms of all ages experienced growth spurts, the majority (51 percent) took place when the firm was between five and 10 years old.²⁶

The picture of the life cycle of a typical microenterprise thus begins to emerge. The firm originates as a tiny enterprise, typically a one-person operation, with four years of initial struggling and

²⁵ Approximately 55 percent of the northern Nigerian firms also indicated that they had experienced a "contraction" at some point in their evolution. These "contractions" occurred most frequently when these firms had one to two workers and were under five years of age (Chuta, 1989).

²⁶ Similar results are reported for the United States by Phillips and Kirchhoff (1988). Few firms grew during their first four years; expansion typically occurred after the fourth year.

a high probability of failure. If it survives these first four years, however, it is likely to experience a sudden spurt of growth, which will likely propel it into one of the larger-size categories of microenterprises.

Graduation Issue: Firm Transformation

The next issue is how many of these growing microenterprises ultimately transform themselves into more modern small and medium enterprises. And what proportion of the growth of modern small and medium enterprises in Africa is due to the expansion of microenterprises? Does this proportion in Africa differ significantly from that found in other parts of the world?

One of the dynamic arguments frequently espoused for encouraging microenterprises is that they serve as a breeding ground or seedbed from which larger firms emerge (see Marshall, 1920 or Bolton Committee, 1971). It is often argued that all larger private enterprises started as very small entities (Anderson, 1982). Yet others contend that this pattern of graduation of firms from one size category to another is not ubiquitous, and that entrepreneurial and policy bottlenecks often severely restrict this graduation process (see, for example, Kilby, 1988 and Biggs et al., 1986).

Empirical evidence on the graduation of enterprises in developing countries has been sparse and not systematically compiled. Nevertheless, some initial information can now be gleaned from a reanalysis of bore-hole-type studies of modern small and medium industry conducted in four African countries, two Asian countries, and one Latin American country.²⁷ In each of these surveys, information was obtained from the entrepreneurs on their firms' origins and growth, including current employment data as well as employment data at start-up. By calculating the percentage of these firms that started with fewer than 11 employees, graduation rates were determined. The results are summarized in Table 3.4.

²⁷ Specifically, the required data were obtained from studies of 28 private firms with 30 to 200 employees in Rwanda (Ngirabatware et al., 1988); 25 private firms from 11 to 200 employees in Botswana (Government of Botswana, 1984); 42 firms with 1 to 200 employees in Sierra Leone (Chuta and Liedholm, 1982); 64 firms with from 11 to 870 employees in Nigeria (Harris, 1965 and Chuta, 1989); 47 firms with 11 to 200 employees in the Philippines (Anderson and Khambata, 1981); and from 244 firms with over 11 employees in 6 subsectors in India (Little et al., 1987). The Colombian figures include only metalworking firms (Cortes et al., 1987).

One important finding that emerges from these studies is that modern small and medium manufacturing firms did not primarily originate as micromanufacturing enterprises. Indeed, in six of the seven countries, the majority of modern small and medium firms did not graduate from the micro seedbed, but rather started with more than 10 employees.²⁸ The percentage of such firms with micro origins varied widely, however, ranging from 10.7 percent in Rwanda to 65.6 percent in India.

The graduation rates in the African countries are substantially smaller than those found in Asia and Latin America. In Asia and Latin America, roughly one-half to two-thirds of the modern small and medium firms had expanded through the size structure, while in no African country did even half graduate. There does appear to be, however, a significant difference in these rates between East/Central and West Africa. In both Sierra Leone and Nigeria, the graduation rate exceeded 30 percent, while in Rwanda and Botswana, 20 percent or fewer of the firms graduated from the micro ranks.

What accounts for these differences between Latin America, Asia, and Africa, and even within Africa? Policy and entrepreneurial bottlenecks are among the possible causes for these variances in graduation performance. The role of the policy bottleneck will be discussed in more detail below. The entrepreneurial bottleneck, as persuasively articulated by Peter Kilby (1988), refers to a crucial deficiency in indigenous entrepreneurial performance as firms grow beyond 10 employees. It is, Kilby argues, a deficiency not in the "innovation" but rather in the "mere management" — coordination and control — functions of the entrepreneur. He argues that this deficiency is much more of a problem in Africa, particularly in the East/Central Regions, than elsewhere. Preliminary support for this view is provided in Chuta's (1989) recent study of small enterprises in northern Nigeria, which finds that locating a good manager was the most frequently cited constraint (after policy) facing firms expanding with more than six workers. More testing is required to verify the importance of this possible bottleneck.

²⁸ The graduation rate may be somewhat understated, however, because the figures do not reflect those who might have origins in nonmanufacturing microenterprise, such as in trading and in agriculture. This relationship needs further study.

TABLE 3.4
ORIGINS OF MODERN SMALL AND MEDIUM PRIVATE MANUFACTURING FIRMS
 (with 11 employees or more)

Region/ Country	Year	No. of Firms	Firm Size: # of Workers	Percent w/Micro Origin—Graduated ^a	Percent w/No Micro Origins ^b
Africa					
Nigeria	1965	64	11-200	43.7	56.3
Northern Nigeria	1989	59	11-200	42.0	58.0
Sierra Leone	1975	42	11-200	30.1	69.9
Botswana	1982	20	11-200	20.0	80.0
Rwanda	1987	28	30-870	10.7	89.3
Asia					
India	1979	244	11-200	65.6	34.4
Philippines	1978	47	11-200	48.9	51.1
Latin America					
Colombia ^c	1978	76	11-200	50.0	50.0

Sources:

Botswana - computed from data compiled by Government of Botswana, 1984.
 Nigeria - computed from data generated by Harris, 1967.
 Northern Nigeria - computed from data generated by Chuta, 1989.
 Rwanda - computed from data compiled by Ngirabatware, Murembya, and Mead, 1988.
 Sierra Leone - computed data compiled by Chuta and Liedholm, 1982.
 India - computed from data in Little et al., 1987.
 Philippines - computed from data in Anderson and Khambata, 1981.
 Colombia - computed from data generated by Cortes et al., 1987.

Notes:

- a Started with fewer than 11 employees.
- b Started with 11 employees or more.
- c Includes metal working establishments only.

Variations in graduation rates appear by sector. Only northern Nigerian data are sufficiently detailed to provide some insight on this issue (Chuta 1989). In the clothing, carpentry, welding, and metal industries, over 50 percent of the modern small and medium firms emerged from the micro seedbed, while in the baking, printing, and brick-making industries, less than one-third arose from that source. These results point to the need for future sector-specific research to define which growth patterns are sectorally determined and to identify the characteristics of specific sectors that stimulate or stifle growth.

Evidence also indicates that firms starting at the upper end of the micro size range were more likely to graduate than those that initially were smaller. In India (Little et al., 1987), for example, the proportion of firms with an initial size of 6 to 10 workers that graduated was higher than those in the group with 1 to 5 workers initially. This result was not due to differences in age between the two size groups. Indeed, both in India and Colombia (Cortes et al., 1987), an inverse relationship was found between the age of the firm and the firm's rate of growth. The majority of the smallest micro firms in their samples had been in existence for six years or more.

This finding should reinforce the basic fact that the overwhelming majority of microenterprises remain within that size category, and very few grow into small-, let alone medium- or large-scale, firms. In northern Nigeria, Frischman (1988) reports that only four of the 214 sampled micro firms jumped to the small- and medium-size category over an eight-year period, implying that only 0.2 percent of the micro firms did so annually. Similarly low rates also appear to hold for Kenya on the basis of more indirect evidence. In that country, in 1974, there were 9,760 manufacturing firms employing less than 10 persons; between 1974 and 1984, an average of only 20 new firms with from 10 to 100 workers appeared each year (Kilby, 1987). Even under the heroic assumption that all firms with 10 to 100 workers had emerged from the micro category, this would imply that less than 0.2 percent of the microenterprises did so each year. In the Philippines, if one makes similar computations, the annual rate of micromanufacturing firms growing into small or medium firms is 0.7 percent. Although the Philippine rate is still minuscule, it is three-and-one-half times the African rates.

SECTION FOUR

POLICY IMPLICATIONS

Government policies play a key role in facilitating, or at least not impeding, the expansion of dynamically efficient micro and small enterprises in developing countries. Earlier studies (Haggblade et al., 1988 and Liedholm and Mead, 1987) have revealed that a wide panoply of policies affect this process.

What is the policy mix that would be most appropriate for facilitating the expansion of efficient small-scale industries in Africa? There is not just one single set of policies or one industrial strategy that can be blindly fitted to all developing countries. Rather, the policy mix must reflect the economic and social characteristics of the country or region as well as the country's ability to effectively administer these policies. Consequently, the policy array most appropriate for stimulating small enterprise growth in much of Africa will likely differ from the policy priorities relevant in other more developed regions, particularly in those countries characterized as semi-industrialized.

Which are the most relevant characteristics of African countries that might importantly affect the policy priorities in that region? First, agricultural activities dominate these economies and are the major source of income for the rural majority. Second, under the shadow of a slowly growing agriculture, total income and the corresponding demand for nonfarm products are growing, at best, slowly. Third, African economies are more involved in international trade than their counterparts elsewhere. Fourth, the levels of human and physical capital tend to be lower in Africa. Fifth, the institutional infrastructure in the areas of marketing, finance, technical and market information; quality control; and the legal system are relatively less well-developed in Africa. Sixth, the relative magnitude of the existing policy distortion appear to be somewhat higher in Africa than in Asia (Meier and Steel, 1989). Seventh, most of the African countries could be classified in terms of their political and administrative structure as relatively "soft" states, which are more vulnerable to socially costly rent-seeking behavior on the part of government officials or powerful private individuals (Biggs and Levy, 1988). Finally, reflecting the low level of per capita income, the majority of the enterprises and employment in them are microenterprises, producing consumer goods in rural areas.

These particular characteristics of African countries point to somewhat different policy priorities than might be appropriate elsewhere. The relevant African policy priorities can be usefully examined by categorizing the policies into those that affect the demand side (usually via the product market) and those that affect the supply side (usually via the resource market) of small-scale enterprises.

DEMAND SIDE POLICY ISSUES

Demand constraints are particularly severe in most African countries. Consequently, a key role must be assigned to those policies that stimulate the demand for the products of efficient small enterprises. This suggests that an important element of a small enterprise strategy should be aimed at identifying dynamic areas of the economy and then maximizing the capacity of small firms to respond to these "growth engines." In Africa, these leading sectors are likely to be initially in the agricultural and foreign trade areas.

Agricultural policies must play a larger role in the overall policy mix in most countries of Africa than elsewhere. Not only is agriculture the largest employer, it is also the major source of income and ultimately the primary source of demand for products of small and medium enterprises, particularly for those located in rural areas. This close relationship, operating primarily through income but also through production linkages, has been previously mentioned. Efforts to promote structural transformation in the industrial sector without corresponding increases in agricultural productivity may lead instead to slower overall growth and an increasing share of agriculture in total national income (Liedholm and Kilby, 1989). Although agricultural policies designed to increase agricultural production in Africa are crucial, the nature and composition of these policies must also be considered, since they can vary substantially in their effects on the demand for products of small and medium enterprises. Preliminary evidence from Africa indicates, for example, that the nonfarm linkages from policies focusing on estate farmers (bimodel) are lower than those focusing on small- and medium-scale farmers (unimodel) (Kaggblade and Hazell, 1989).

Trade policies, particularly those that affect the product market, must also play an important role in most African countries. The significance of trade looms particularly large due to the small market size and the greater relative role of trade in most of the African economies. Growing exports can constitute a key way of overcoming small national markets, but progressive small and medium firms are frequently

thwarted by overvalued exchange rates and/or non-size-neutral export incentives (Haggblade et al. 1986). Moreover, tariff protection (to compensate partially for overvalued exchange rates) tends to be highest in those product lines in which the largest (and frequently most inefficient) enterprise dominate (Liedholm and Mead, 1987). Consequently, a refocused trade policy could lead to a pattern of improved import substitution through an expansion of dynamically efficient small enterprises. The possibility of small enterprises gaining customers by displacing inefficient and import-dependent larger enterprises (in other words, increasing the share of small enterprises in existing markets) becomes particularly crucial in countries where overall domestic demand is growing slowly.

SUPPLY SIDE POLICY ISSUES

Policies to strengthen the ability of productive small and medium enterprises to respond to this demand are also of great importance in African economies. In addition to the policies on the supply side that work directly through the labor, capital, and other input markets, one must also include policies relating to the infrastructure, education, regulatory, and institutional environment.

A wide array of policies have introduced distortions into the capital and labor markets and these have differentially affected firms by size. The net effect of these factor price distortion has been measured for several low income African and Asian countries (Haggblade et al., 1987). Subsidized credit, interest rate ceilings, import duties, quotas, exchange rates, and tax incentives have, on balance, tended to make capital substantially cheaper for larger producers than for their small competitors. Conversely, minimum wage legislation, mandated fringe benefits, and public sector wage policies have tended to make labor relatively more expensive for larger producers. Although the net effect of these policy distortion on the competitiveness of small firms compared with their larger-scale counterparts is not clear in all cases, in most instances, the net overall impact has been to subsidize the larger firms and penalize the small firms (Liedholm and Mead, 1987). There is also some indication, although limited, that the magnitude of the distortions in Africa are greater than elsewhere (Meier and Steel, 1989). Consequently, attempts to introduce a more neutral policy environment may have a greater initial impact on small enterprises in low income African countries than elsewhere.

Expansion of infrastructure, particularly in rural towns, is another potent intervention that may be relatively more crucial in African countries than elsewhere. Given the dispersed settlement patterns

in Africa, the emergence of rural towns as a focal point enables policy makers to provide the needed infrastructure for productive small and medium enterprises at relatively lower costs. In addition to roads or railroads, electricity, and water, one must not forget needed improvements in the institutional infrastructure such as the development of legal and information systems. These market-completing interventions to improve transactional efficiencies are particularly important in "soft" states, which may not have the capacity to devise, implement, and sustain the more government-directed interventions such as those practiced by Korea. The related need for collateral investment in human capital should also not be overlooked, and is of crucial importance in facilitating the future evolution of the dynamically efficient enterprises. These infrastructure-type improvements are much more important in low income countries than elsewhere.

STRUCTURAL ADJUSTMENT POLICY REFORMS

Many of these policies discussed above have been included in the package of policy reforms found in the structural adjustment loans and the more specific sectoral adjustment loans of the World Bank. In Africa, at least 18 countries have undertaken structural adjustment loans, and an additional 14 had initiated sectoral adjustment operations by 1988 (Meier and Steel, 1989). Although the mix of policies incorporated in these agreements has varied from country to country, some preliminary patterns have emerged. After reviewing a sample of 32 Bank loans for structural and industrial adjustment in Africa, Jayawickrama, Morin, and Steel (1989) reported that more than half contained policy reforms relating to the exchange rate, agriculture, and tax policy. Trade policy (particularly reduction and compression of tariff rates, export incentives, and liberalization of quantitative restrictions) and easing of price regulations were included in almost half of the measures, while removal of interest rate control and minimum wage restraint were less often incorporated.

What has been the effect of these structural and industrial adjustment programs on small and medium industries? The differing policy mixes, economic structures, and levels of development combined with the paucity of time-series micro data make it impossible to answer the question with great precision.

On the basis of the empirical evidence reviewed above, however, one can tentatively hypothesize that policy reforms incorporated in these structural adjustment loans should facilitate the expansion of

efficient small industries. On the demand side, the agricultural reforms, particularly those that benefit the small- and medium-scale farmers, should generate crucial increases in the demand for smaller-enterprise products. Reductions in and compression of the tariff schedules should also enhance the demand for small-enterprise products, because the elimination of the relatively higher effective protection rates of the larger firms will now make their products relatively more expensive compared to their smaller-scale counterparts. On the supply side, the policy reforms that remove the distortions in the capital and labor markets, such as those in the areas of trade, finance, and labor market, are likely to increase the relative competitiveness of the smaller firms. In addition, small firms are likely to benefit greatly from the removal or reduction of the quantitative restrictions or controls that have tended to bring "rents" primarily to the larger firms. There is empirical evidence suggesting that both the short- and long-run supply elasticities of firms within the microenterprise category in Africa are quite high; consequently, an expansion of output from these firms would be predicted to occur from these particular reform (Liedholm and Kilby, 1989).

Nevertheless, the methods used to implement these structural adjustment reforms may sometimes prevent these reforms from actually benefiting small producers. Zambia, for example, introduced as part of its policy reform program a foreign exchange auction for all imports in 1985. Although theoretically small firms should have benefitted from this devaluation and the elimination of import controls, they were still unable to obtain foreign exchange, because the administrative requirements including the owning of a commercial bank account were unduly restrictive for them (Ncube 1987).

POLICY EFFECTS ON EXPANSION OF EXISTING FIRMS

The vast majority of the African firms are microenterprises (employing less than 10 persons), located in rural areas and producing simple consumer goods. Helping the dynamically efficient enterprises among this existing group to expand and evolve may provide a less risky path to development than one focusing mainly on the formation of new, larger firms. Yet even the growth of existing micro firms can often prove to be difficult, particularly when it involves not just their marginal expansion within the microenterprise size category but rather their graduation or transformation into more complex small- or medium-scale enterprises (Boomgard, 1989 and Liedholm and Mead, 1987).

A key policy issue is what effect government policies have on the expansion of dynamically efficient micro and small enterprises in Africa. More specifically, are they primarily responsible for the meager micro graduation rate and the "missing middle" in the size distribution of firms?

It is frequently argued (see, for example, Little et al., 1988 and Biggs and Oppenheim, 1986) that most government taxes and regulations, such as those governing minimum wage, working conditions, registration, and zoning, fail to reach the micro firms in most developing countries. As firms increase in size, however, they also become more visible and become subject to these government policies, many of which fall proportionately more heavily upon them. Consequently, there is a disincentive for them to evolve organically into modern small and medium-sized firms. Empirical support for this view is provided by an Indian survey that discovered an unusually large number of firms just below the size required for registration as a factory (Timberg, 1978).²⁹

Although the African evidence on this subject is meager, preliminary findings indicate the degree to which government policy acts as a significant constraint to expansion varies by country. In northern Nigeria (Chuta, 1989), for example, government policies and regulations were the most frequently cited of the difficulties encountered by micro and small firms during the period of their most rapid expansion. Overall, it was mentioned as a constraint by over 50 percent of the firms. Yet, in Ghana (Steel and Webster, 1990), such policies were not generally perceived to be a significant constraint for expanding firms. Only 15 percent of the micro and small firms, for example, listed taxes or regulations as one of the top four problems for expansion.

The perceived importance of policy difficulties also appeared to vary depending on the size of the firm at the time of its growth spurt. In northern Nigeria, only 30 percent of the firms with 1 to 2 workers during the growth spurt mentioned policy difficulties, but this percentage increased to over two-thirds for firms with over ten workers. Thus, although policy and regulatory constraints were important for firms of all sizes, these became relatively more significant the larger the firm at the time of the growth spurt.

²⁹ There is also similar evidence from Vietnam (Barton, 1977) — the "Barton Gap" — as well as the Philippines (Biggs et al., 1987).

Which of the government policies and regulations have the largest negative impact on micro- and small-enterprise expansion? A wide array of government interventions can negatively affect this process, ranging from labor laws, taxes (both national and local), and business regulations to foreign trade and exchange restrictions. Many of these policies and regulations may formally or legally apply to micro or small firms, but may not be enforced, or, if so, are applied unevenly, subjecting these enterprises to harassment or pressures for side payments. Thus, it is also important to determine the extent to which these government interventions actually reach the individual firms.

Recent evidence from northern Nigeria (Chuta, 1989) also provides some initial glimmerings of the perceived relative importance of various government policies and regulation on firm expansion. The greatest perceived negative policy impact on expansion in that country was the income tax (37 percent), followed by licensing and registration regulations (21 percent), and foreign exchange restrictions (10 percent), which together accounted for 69 percent of the perceived policy difficulties. Other possible policy constraints, such as other national taxes (such as sales or excise), local taxes (such as license and registration fees), and labor laws (such as minimum wage or social security) were infrequently mentioned.

Did the relative importance of these various government policies and regulations vary by the firm's size at the time of its growth spurt? The northern Nigeria study (Chuta, 1989) found that the ranking of negative policies did not vary between micro and small-scale enterprises and the individual percentage figures changed only marginally. The small number of observations, however, limit the generalizations one might make from these particular results.

Some government policies, however, can also have a potentially positive affect on microenterprise growth. As a firm expands, it may at that point have improved access to finance or subsidized credit, government purchases, technical assistance, foreign exchange, and tax incentives, and these may offset some of the more negative effects of other governmental policies. Chuta's (1989) northern Nigerian study again provides the first glimpse of this aspect of governmental policy in Africa. Substantially fewer enterprises (only 39 percent of those firms that reported negative policy effects) indicated that governmental policies also had some positive impact on their expansion. A larger percentage of small-scale firms (47 percent of total reporting negative policy effects) reported positive effects than did microenterprises (37 percent). The one beneficial policy cited by the majority of responding firms of all size classes was governmental purchases (51 percent), followed by marketing assistance (14 percent), and

access to finance (13 percent). Tax incentives, subsidized finance, and technical assistance were rarely mentioned by either micro or small-scale firms in northern Nigeria.

A final, but important dynamic policy issue is whether or not these governmental policies, both negative and positive, arise all at once when a firm reaches a certain "visible" size, or do they phase in gradually, perhaps in discrete steps, as a firm grows. The only explicit evidence on this issue from Africa, Chuta's (1989) Nigeria study, indicates that these policies affect firms at different points in their life cycle. In response to the question, "Did these policies begin to affect your business at the same time?" 90 percent answered no. It is also evident from more episodic and anecdotal information from other African countries that these policies do not all affect the firm at the same time — for example, when the firm reaches the "visible" size. Even the smallest micro firm cannot avoid the effects of import duties, quotas, or an overvalued currency.

As a firm grows, however, it may become subject to additional taxes, rules, and regulations. Many of these are in the nature of lump sum levies, such as the *patente* tax in Rwanda (Ngirabatware et al., 1988) and licensing and registration fees in Sierra Leone (Chuta and Liedholm, 1985), all of which, at per unit of output, fall heavily on the micro or small firm when applied. Another example is the surtax and withholding system in Malawi, which imposes a significant tax hurdle on unregistered micro or small firms that seek to sell to large, registered enterprises (Mead et al., 1989). There is thus a strong discontinuity when the firm reaches this size (or becomes "visible" or must register), as its marginal tax rate jumps precipitously and regulatory and legal constraints become more serious. If other negative policies also were to come into effect at the same time this discontinuity could be exacerbated. These various regulations and taxes, however, are typically imposed by different governmental units in most African countries so it is unlikely that they would all be actually applied at the same size level. Nonetheless, careful attention needs to be paid to identifying and avoiding sharply net negative policy discontinuities that would act as a disincentive to firm expansion. As yet, there are no studies to indicate whether these net policy disincentives are any greater in Africa than in Asia.

At the project level, the initial evidence on African enterprise dynamics also provides some insights. First, there is some indication that the constraints faced by microenterprises and the implied

project assistance needs vary with the size and life-cycle of the individual enterprise.³⁰ Chuta's northern Nigeria (1989) study, for example, reveals that working capital is the most frequently cited difficulty facing expanding firms with 1 to 2 workers, but that finding a good manager and managing firm activities, which is not mentioned at all by firms with 1 to 2 workers, becomes the most frequently cited (after policy) constraint for those firms expanding with six or more workers.

Second, there is also some evidence that the number of perceived difficulties facing expanding firms increase with firm size. Once again, Chuta's study indicates the average expanding firm in Maiduguri with 1 to 2 workers lists 1.1 difficulties while the average expanding modern small and medium firm lists over 3 difficulties. The smallest micro firms expanding marginally within the microenterprise size category may thus have fewer "missing components" and face a less risky growth path than larger expanding micro firms, which must confront a more complex array of multiple missing components, particularly when attempting to transform themselves into small-scale enterprises.

Third, the evidence on the age life-cycle profile of business survival provides some grist for the decision mill on what firms to target for assistance. Since the risks of failure are immense during the first four years of a firm's existence — when the learning pitfalls are at a maximum — a four-year-old firm has a much greater chance of success than a new firm. Consequently, project assistance managers wanting to maximize their own impact might choose to focus their interventions on older firms rather than on forming new ones.

Although these preliminary findings have provided an initial glimpse of how general policies and specific projects might encourage dynamically efficient firm growth in Africa, much more information is needed. Additional bore-hole studies of the past growth performance of existing African micro, small, and medium enterprises would be useful in helping to fill this knowledge gap.

³⁰ For details and further elaboration of the evolution of the finance constraint and the role of informal finance in this process, see Liedholm (1989).

SECTION FIVE

SUMMARY

This paper has examined the dynamics of small-scale manufacturing enterprises in Africa. The rather limited number of existing dynamic analyses are classified as either **macro** studies, which examine aggregate changes in the size, location, and sector of such firms, or **micro** studies, which focus on the birth, growth, and disappearance of individual firms.

The macro studies indicate that small-scale firms in Africa are evolving over time; this is one facet of the worldwide structural transformation that accompanies rises in per capita income. In particular, there is a secular shift toward somewhat larger firms, based in larger localities, and producing more modern products.

The micro studies provide important insights into how this transformation is taking place. The vast majority of new firms formed are microenterprises (less than 10 workers), which, as per capita income grows, appear increasingly in larger localities. Disappearance rates are highest for micro firms and lowest for the largest firms. Death rates are found to be highest during the firms' initial four years. If they survive these initial difficult years, the prospects of the micro firms typically brighten, and they are then likely to experience a sudden spurt of growth that propels them into one of the larger-sized categories of microenterprises.

Relatively few of these firms, however, grow beyond the confines of the micro-size category and transform themselves into modern small and medium-sized firms. Indeed, the majority of African small and medium-sized firms do not emerge out of the huge pool of microenterprises, but originate as larger firms. The percentage of small and medium firms that originate as micro firms, however, is significantly higher in West than in East/Central Africa.

The degree to which government policies and regulations act as a constraint to firm expansion appears to vary by country. Preliminary evidence indicates, for example, that policies and regulations are a more significant problem for expanding firms in Nigeria than in Ghana. The policy and regulatory constraints also appear to be more significant the larger the firm at the time of its growth. There is

Previous Page Blank

evidence that individual regulations and policies, both positive and negative, do not appear at the same time, but rather are introduced at different points in the firm's life cycle. Nevertheless, careful attention must be paid to avoiding sharply negative policy discontinuities that would act as a disincentive to firm expansion. More studies are needed to ascertain exactly how these policies influence the development of dynamically efficient firms in Africa.

BIBLIOGRAPHY

- Aluko, S. A., O. A. Oguntoye and Y. A. O. Afonja. 1972. *Small-scale Industries: Western State of Nigeria, Ile-Ife*: Industrial Research Unit, University of Ife.
- Anderson, Dennis, "Small Industry in Development Countries: A Discussion of the Issues." 1982. *World Development*. Vol. 10, #11, pp. 913-948.
- _____ and Farida Khambata. 1981. *Small Enterprises and Development Policy in the Philippines: A Case Study*. World Bank Working Paper No. 468, July.
- Barton, Clifton. 1977. "Credit and Commercial Control: Strategies and Methods of Chinese Business in South Vietnam," Ph.D. dissertation Cornell University.
- Berry, Albert and Armando Pinell-Siles. 1979. "Small-Scale Enterprises in Colombia: A Case Study." World Bank Studies on Employment and Rural Development #56, Washington D.C..
- Biggs, Tyler and Jeremy Oppenheim. 1986. "What Drives the Size Distribution of Firms in Developing Countries." EEPA Discussion Paper No. 6, HIID, Harvard University.
- Biggs, T., et al. 1987. "Small Business Policy Direction Study: The Philippines," Ministry of Trade and Industry, the Philippines, and USAID. (Employment and Enterprise Analysis Project).
- Bolton, J. E.. 1971. *Small Firms: Report of the Committee of Inquiry on Small Firms*. Her Majesty's Stationary Office, London.
- Boomgard, James. 1989. "A.I.D. Microenterprise Stock-taking: Synthesis Report," Washington: USAID.
- Botswana, Government of. 1984. *Report on Evaluation of FAP*. Gaborone: Ministry of Finance and Development Planning.
- Chenery, Hollis, Sherman Robinson, and Moshe Syrquin. 1986. *Industrialization and Growth: A Comparative Study*. Oxford University Press.
- Chuta, Enyinna. 1989. "A Nigerian Study of Firm Dynamics," Draft Paper, Michigan State University. Michigan State University.
- _____ and Carl Liedholm. 1985. *Employment and Growth in Small Scale Industry: Empirical Evidence and Policy Assessment from Sierra Leone*. St. Martin's Press.
- _____ and Carl Liedholm. 1982. "Employment Growth and Change in Sierra Leone Small Scale Industry: 1974-1980." *International Labour Review*, Volume 121, #1, Jan-Feb., pp. 101-112.
- _____ and David Wilcock. 1982. "Employment in Rural Industries in Eastern Upper Volta," *International Labour Review*, 121, 1 (July-August), pp. 455-468.

- Cortes, Mariluz, Albert Berry, and Ashfaq Ishaq. 1987. *Success in Small and Medium-Scale Enterprises: The Evidence from Colombia*. Oxford University Press.
- Davies, Stephen et al. 1984. "Small Enterprises in Egypt: A Study of Two Governorates," MSU International Development Working Paper No. 16, East Lansing: Michigan State University.
- Evans, David. 1987. "Test of Alternative Theories of Firm Growth," *Journal of Political Economy*, Volume 95, #4 (August), pp. 657-674.
- Fisseha, Yacob and Omar Davies. 1981. "The Small-Scale Manufacturing Enterprises in Jamaica: Socioeconomic Characteristics and Constraints." MSU Rural Development Series Working Paper No. 16, Michigan State University.
- Frischman, Alan. 1988. "The Survival and Disappearance of Small Scale Enterprises in Urban Kano, 1973-1980." Draft paper.
- Haggblade, Steven. 1984. "The Shabeen Queen," Ph.D. dissertation, Department of Economics, Michigan State University, East Lansing, Michigan.
- _____, Peter B. Hazell and James Brown. 1988. "Farm-Nonfarm Linkages in Sub-Saharan Africa." Policy, Planning, and Research Working Paper No. 6, ARD/World Bank. April.
- Hazell, Peter and Ailsa Roell. 1983. "Rural Growth Linkages: Household Expenditure Patterns in Malaysia and Nigeria," *International Food Policy Institute Research Report #41*, Washington, D.C..
- Itao, Arnulfo. 1980. "A Study on Mortality Rates and Causes of Failure of Small-Scale Industries in the Philippines." Research Department, Institute for Small-Scale Industries, University of the Philippines, Quezon City, Manila, March.
- Jayawickrama, M., B. Morin, and W. Steel. 1989. "World Bank Lending in Support of Adjustment in Sub-Saharan Africa-1980-88." in *Industrial Adjustment in Sub-Saharan Africa*. Meier and Steel ed., New York: Oxford University Press.
- Kallon, Kelfala. 1986. "The Effects of the Extended-Family System on Entrepreneurial Activity: Some Evidence from Sierra Leone." Paper presented at the 13th Annual Convention of the Eastern Economic Association, April 9-12, Philadelphia.
- Kilby, Peter. 1988. "Breaking the Entrepreneurship Bottleneck in the Late -Developing Countries: Is There a Useful Role for Government?" Draft paper, Wesleyan University, March.
- _____. 1987. "Small Scale Manufacturing in Kenya." in *Kenya: Industrial Sector Policies for Investment in Export Growth*, Volume II. Washington D.C.: World Bank.
- _____. 1982. "Small Scale Industry in Kenya." Working Paper No. 20, MSU Rural Development Series, Michigan State University.

- King, Robert and D. Byerlee. 1978. "Factor Intensities and Locational Linkages of Rural Consumption Patterns in Sierra Leone," *American Journal of Agricultural Economics*, 60, #2, pp. 197-201.
- Liedholm, Carl. 1989. "Small Enterprise Dynamics and the Evolving Role of Informal Finance," Paper Prepared for Conference on Informal Financial Markets in Development, Washington DC, October, 1989.
- _____ and Donald Mead. 1987. "Small Scale Industries in Developing Countries: Empirical Evidence and Policy Implications." MSU International Development Paper No. 9, Michigan State University.
- _____ and Joan Parker. 1989. "Small Scale Manufacturing Growth in Africa: Initial Evidence" MSU International Development Working Paper #33, East Lansing: Michigan State University.
- _____ and Peter Kilby. 1989. "Nonfarm Activities in the Rural Economy" in *The Balance Between Industry and Agriculture in Economic Development*, Volume II. J. Williamsies and V. Panchamukhi; editors. New York: St. Martin Press.
- Little, Ian M. D., Dipak Mazumdar, and John M. Page, Jr. 1987. *Small Manufacturing Enterprises: A comparative Analysis of India and Other Economies*. Oxford University Press.
- Marshall, Alfred. 1920. *Principles of Economics*. 8th edition, London: Macmillan. Mead, Donald, B.R. Bolnick, and R.C. Young. 1989. "Strategies for Small and Medium Enterprises in Malawi," Report Submitted to USAID/Malawi, August, 1989.
- Mead, Donald. 1989. "Policy Reform and the Informal Sector in Africa," Paper prepared for Conference on the Informal Sector: Issues in Policy Reform and Programs, Abidjan, April, 1989.
- _____, B.R. Bolnick, and R.C. Young. 1989. "Strategies for Small and Medium Enterprises in Malawi," Report Submitted to USAID/Malawi, August, 1989.
- Meier, G. and W.F. Steel. 1989. *Industrial Adjustment in Sub-Saharan Africa*. New York: Oxford University Press.
- Middleton, Alan. 1989. "The Changing Structure of Petty Production in Ecuador," *World Development*, Volume 17, #1, pp 139-155.
- Milimo, John and Yacob Fisseha. 1985. "Rural Small Enterprises In Zambia: Results of a Country-wide Survey," *Rural Development Studies Bureau Report #25*, Lusaka, Zambia.
- Miller, W.L.. 1965. "An Economic Analysis of Oil Palm Fruit Processing in Eastern Nigeria," Ph.D. dissertation, Michigan State University.
- Nag, A.. 1980. "Small Industries: Aspects of their mortality." *The Economic Times*, Oct. 6, Delhi, India.

- Ncube, P.D. 1987. "The International Monetary Fund and the Zambian Economy, in K.J. Havenik (ed.). *The IMF and the World Bank in Africa*. Uppsala; Scandinavian Institute of African Studies.
- Ngirabatware, Augustin, Leonidas Murembya, and Donald Mead. 1988. "Large Private Manufacturing Firms in Rwanda: Current Situation and Policy Impact." Draft paper, July.
- Page J. and W. Steel. 1984. *Small Enterprise Development: Economic Issues from African Experience*, World Bank Technical Paper #26, Washington, D.C.: World Bank.
- Phillips, Bruce D. and Bruce A. Kirchhoff. 1988. "Analysis of New Firm Survival and Growth." Paper presented at the Babson Entrepreneurship Research Conference, Calgary, Canada, May.
- _____. 1988. "Birth and Death Rates of Small and Large Firms: 1976-1986." Mimeo.
- Spencer, Dunstan, I. May Parker, and Frank Rose. 1976. "Employment Efficiency and Income in the rice Processing Industry in Sierra Leone," African Rural Employment Paper #15, East Lansing: Michigan State University.
- Staley, Eugene and Richard Morse. 1965. *Modern Small Scale Industry For Developing Countries*. New York: McGraw-Hill, 1965.
- Steel, William F. 1981. "Female and Small-Scale Employment under Modernization in Ghana." *Economic Development and Cultural Change*, Vol.30, #1, Oct., pp. 151-167.
- _____ and Leila Webster. 1990. "Ghana's Small Enterprise Sector Survey of Adjustment Response and Constraints," Industry and Energy Department. Working Paper (forthcoming). Washington D.C.: The World Bank.
- Swain, Frank and Bruce Phillips. 1985. "The Relationship Between Business Failures and Economic Growth: 1978-1984." Mimeo, Office of Advocacy, U.S. Small Business Administration, Washington, D.C., September.
- Timberg, Tom. 1978. "Report on the Survey of Small-Scale Industry Units in Bombay." World Bank Development Economic Department; Washington, D.C..
- U.S. Small Business Administration. 1983. *The State of Small Business-1983*. Washington D.C.; U.S. Government Printing Office.
- _____. 1986. *The State of Small Business-1986*. Washington, D.C., U.S. Government Printing Office.