Small Scale Manufacturing Growth in Africa: Initial Evidence

by

Carl Liedholm and Joan Parker

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INTRODUCTION

This paper examines the dynamics of small-scale manufacturing enterprises in developing countries, with emphasis on evidence from Africa.[1] The creation, evolution, and disappearance of firms and how these patterns vary by country, stage of development, industrial sector, and policy environment are topics that fall within the purview of firm dynamics.

Studies of small firm dynamics are important because they provide insights into the feasible and desirable patterns of growth in manufacturing output and employment. Since small firms dominate the industrial scene in most low-income countries, 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 results that are potentially both more equitable and efficient than alternatives stressing large-scale firms. Such studies can also uncover ways that policies and programs can facilitate, or at least not impede, this evolutionary process.

The vast majority of small enterprise studies in Africa have been undertaken at a single point in time and thus provide only a cross-sectional snapshot of the distribution of firms. Consequently, these studies have only been able to provide a limited perspective on the evolution of these firms over time and the impact of policy on this process.

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1. 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, transport, financial, social, and personal services.

Dynamic studies can usefully be sub-divided into those that follow a macro and those that follow a micro approach. On the macro level, researchers have focused on changes in business demographics (size, location, and sector) captured by aggregate data across time periods. On the micro-economic level, studies examine the birth and 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 judgements about dynamics at the firm level.

This paper brings together the relevant information from each approach in order to provide an improved perspective for analyzing manufacturing firm dynamics. Section I summarizes macro-level evidence of firm dynamics and seeks to up-date the material covered in previous studies. In Section II, 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 process of individual firms. Finally, the effects of policy on small firm dynamics are examined in Section III. Data problems confronted in studies of firm dynamics are briefly addressed in Appendix A.

I AGGREGATE GROWTH OF FIRMS AND EMPLOYMENT

What evidence can aggregate data offer of small enterprise dynamics? Aggegate 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.

1.1 Size

What size categories are useful for analysis? Although any classification scheme is by its very nature arbitrary, this paper uses employment to classify firms into the following categories: "micro" - less than 10 workers, "small" - 10-50 workers; "medium and large" - more than 50 workers. Within the micro category, one-person firms have been separately analyzed in some cases.

Worldwide, the absolute number of micro and small enterprises is increasing. Relative growth in numbers of firms appears to be highest in the 2-9 and 10-49 worker firms, and lowest in one-person enterprises (see Table 1.1).[2] In some countries, in fact, 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 1.2, employment is rising in the combined micro and small as well as the medium and large size categories. In two-thirds of the countries, however,

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2. 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 1.1

Annual Growth Rate of Numbers of Manufacturing Firms
By Firm Size
(in percent)

Region/Country	Dates	Size of Establishment (# workers) Micro (1)	Micro (2-9)	Small (10-49)	Medium & Large (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 1.2

Annual Growth of Manufacturing Employment by Firm Size
(in percent)

Region/ Country	Dates	Growth in Employment (%) Micro/Small[a]	Medium/Large[b]
Africa			
Ghana	1960-70	7.1	12.1
Sierra Leone	1974-80	4.6	2.4
Kenya	1974-78	1.6	3.4[c]
Other			
India	1961-71	15.3	9.2
Philippines	1967-75	1.6[d]	5.0[d]
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, 1982.
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 Figure refers to growth in number of firms with over 50 workers, not growth in employment.
d For the Philippines, "small" is firms with fewer than 100 employees, "large" is firms with 100 or over employees.

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.

In absolute terms, however, micro and small firms generate more new jobs than their larger scale counterparts. Given the larger number of small firms, more jobs can be created even at a slower growth rate. As demonstrated in Table 1.3, the number of new jobs created in micro and small firms outweighs the number created in larger firms in every country examined.[3]

1.2 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.[4] 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

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3. 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% (2.4%); Ghana: 62.7% (12.1%); India: 43.5% (9.2%); Colombia: 10.5% (7.9%); Philippines: 5.7% (5.0%); Turkey: 7.6% (7.1%). It appears that the absolute employment gap is shrinking most quickly in the countries with highest per capita incomes. (Figures are calculated from Table 1.3.)

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

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manufacturing employment.[5] 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).[6] Evidence from the Philippines also suggests that manufacturing employment growth is substantially higher in metropolitan Manila than in the provinces; however, census and survey data conflict on this point.[7]

Locational changes can be disaggregated by sector as well as by size of firm. In Sierra Leone, food procesing and repair work showed the highest overall growth in localities of all sizes, while traditional activities (such as weaving), the slowest growing sector overall, showed negative absolute growth in the smallest localities.[8]

1.3 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-sectional studies show a movement from light manufacturing to intermediate and then to capital good 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.

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5. Liedholm and Mead, 1987.
6. Chuta and Liedholm (1985). It should be noted that Chuta and Liedholm's Sierra Leone study focused solely on micro enterprises, 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 micro enterprises only.
7. Anderson and Khambata, 1981.
8. Chuta and Liedholm, 1985.

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.[9] 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 intra-industry competition between firms.

1.4 "Standard" Patterns

What picture thus emerges of the "standard" evolution of firm size and structure as the level of economic development increases? Although experiences do vary 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

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

in the rural area. As per-capita income rises, the firm is likely to be somewhat larger -- either a non-household micro-enterprise or a small to medium-scale factory -- 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.[10]

These evolutionary patterns are consistent with results emerging from recent studies that have examined how static economic efficiency varies by type of firm.[11] 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 for the micro and small enterprise size categories; 2) operating in workshops away from the home; 3) located in larger localities; 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,

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10. See Staley and Morse, 1965, and Anderson, 1982.
11. Although these studies (see for example, Liedholm and Mead, 1987, 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).

would play a role. Short-run variations in the aggregate level of economic activity may make it difficult to delineate these longer-term patterns.[12] 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.[13] 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 micro-economic evidence must now be examined in an attempt to shed more light on this incomplete picture of firm dynamics.

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12. 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?

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

II BIRTHS, DEATHS, AND GROWTH: THE MICRO-EVIDENCE

The net growth of micro and small enterprises cannot be properly analyzed without examining its three component elements: births, deaths, and expansion.[14] Each will be considered in turn.

2.1 Firm Births

Data on micro and small firm births in developing countries are sparse. Table 2.1 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 eight 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 show in Table 2.1. These results, when combined with the "death" 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.

No evidence has yet been uncovered relating birth rates to firm size in developing countries.[15] However, given a population of new firms, it is

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14. Birth rates are calculated by dividing all new firms appearing in 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.

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 2.1

Annual Manufacturing Firm Birth Rates
by Size of Locality
(in percent)

Region/Country	Dates	-- POPULATION LEVELS -- Under 2,000	2,000-20,000	Over 20,000	Urban 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 Liedhom'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.

possible to define how many of the new firms fall into each size category. Evidence from India and the Philippines suggests that 70 to 83 percent of new firms are micro-enterprises (1-9 workers), while the bulk of the remainder falls into the 10-49 worker category.[16]

What determines birth rates? Excess demand for the goods of small firms and excess supply of labor, capital, or other inputs stimulate firm birth. Some of the smallest firms may act as "sponges" for labor in times when demand for labor in other activities is low. With few productive uses for their labor, people may form small establishments, which they then leave when their labor can be used more profitably elsewhere.

An important question is the relative importance of supply and demand conditions in the formation of new firms. The Colombia study carried out by Cortes et.al., (1987) gives seven supply-side arguments for the dramatic

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15. 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, 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.

16. **PERCENT OF NEW FIRMS BY SIZE OF FIRM**

	-- Number of workers --					
Country	1-9	10-19	20-49	50-99	100+	Total
Philippines	81	7	7	5	<1	100
India	72	15	4	3[a]	--	94[b]

Sources: Philippines - computed from data in Anderson, 1981.
India - computed from data in Little et. al., 1987.

a Includes all firms with 50 or more workers.
b Does not add to 100 due to missing data.

increase in numbers of micro and small firms in the 1970s. They are:

1. a general improvement in academic achievement,
2. an increased pool of skilled workers,
3. declining real wages,
4. a strong extra-bank credit market,
5. the absence of balance of payments problems,
6. an improved second-hand equipment market, and
7. improved equipment repair capacity.

Frischman's (1988) Nigerian study points to two elements:

1. lump-sum payments of wage arrears, and
2. large increases in incomes due to oil money.

The elements listed by Frischman work on both the supply and demand sides, increasing the money available to start small businesses, as well as increasing the general demand for the goods and services of small businesses. While the list of influences presented in the Nigerian and Colombian cases is illustrative, it is far from complete. Furthermore, the Nigerian case makes particularly clear how difficult it is to separate and measure supply and demand determinants of firm birth.

2.2 Firm Mortality (Death) 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 in Colombia, the Philippines, India, and the United States.[17]

When is a firm considered "dead"? In most surveys, a dead or closed firm is one no longer operating in its listed activity at its previous location.[18] 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 skanty. 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.[19] This cautionary note must be kept in mind when interpreting the firm death figures.

Mortality rates range from 1.3 percent to 12.5 percent annually, as shown in Table 2.2. Four hypotheses can be put forward regarding firm mortality:

(1) Smaller firms have a higher mortality rate than larger firms.

(2) Rural firms have a higher mortality rate than urban firms.

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17. 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).
18. In India, it refers to firms non-existant or dead firms not traceable (Nil or Not to be Punched) on the census forms, while in the U.S. it refers to a firm no longer listed on the U.S. Establishment Longitudenal Microdata file of the SBA (Phillips and Kirchhoff, 1988)
19. In the United States, it is alleged that 75 percent of business terminations are voluntary.

TABLE 2.2

Annual Manufacturing Firm Mortality Rates, by Firm Size
(in percent)

Region/ Country	Dates	Micro (1-9)	Small (10-49)	Medium (50-199)	Total
Africa					
Sierra Leone	1974-80	10.3	-	-	-
Nigeria	1974-80	10.4	-	-	-
Other					
Colombia[e]	1965-71	-	7.7[a]	3.1[a]	5.0
Philippines[e]	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.
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 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 firm-specific data. This leads to an underestimation of the mortality rate.

(3) Mortality rates vary by sector of the economy.

(4) Firms have a higher mortality rate in their first few years of existence.

Evidence on these hypotheses is examined in detail below.

2.2.1 Mortality and Size

As shown in Table 2.2, mortality rates are negatively related to firm size, with highest mortality rates in micro-enterprises, and declining as firm size increases. Data from Nigeria and Sierra Leone micro-enterprises show annual mortality rates around 10 percent, a rate slightly lower than for U.S. firms in the same size category, at 12.5 percent.[20] 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 micro enterprises 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 1-9 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.

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20. African micro-enterprise 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.

2.2.2 Mortality and Location

The data show no clear pattern in the relationship between firm location and firm death. Evidence from Sierra Leone (Chuta and Liedholm, 1982) supports the hypothesis that rural firms have a higher mortality rate than urban firms. Firms in Freetown had a mortality rate of 9.5 percent, lower than the 11.1 percent mortality rate of rural firms.

Evidence from the Philippines is inconsistent. A study by Fajardo (Anderson and Khambata, 1981) indicates that mortality rates are higher in Manila than in the rural areas, with a 3.3 percent annual mortality rate in Manila and a 0.5 percent mortality rate in the provinces. On the other hand, a study by Itao (1980) found that Philippine small and medium firm mortality rates were highest in the highly developed regions, and lowest in the least developed regions.

2.2.3 Mortality 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, micro-enterprise 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 micro-enterprises, however, these results may reflect a growth of firms out of the micro-enterprise size category rather than shifts between sectors.

U.S. data provide mortality rates for all firm sizes.[21] Small firm mortality was highest in the construction, manufacturing, and retail trade

sectors; medium-sized firm mortality was highest in the mining and retail trade sectors; and large firm mortality was highest in the finance, insurance, and real estate sectors.[22] Across all size groups, however, the lowest mortality rate was in manufacturing (53.1% over an 8-year period), and the highest in construction (64.7% over an 8-year period).[23]

2.2.4 Mortality 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 2.3. 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 previously enumerated in 1974 were still in existence after six years, but it could not ascertain the specfic years

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21. While the U.S. data is useful to compare mortality between small, medium and large firms, it does not distinguish between industries within manufacturing, which are the units of interest in this section of this paper.
22. The State of Small Business, 1986.
23. Phillips and Kirchhoff, 1988.

TABLE 2.3

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	100.0	100.0

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 eleven-year time period in India and a six-year time period in the United States. The figures cover dead firms only, 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.

in which the non-surviving firms died (Chuta and Liedholm, 1982). By applying, however, 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" micro-enterprise in Sierra Leone surviving during each of its first six years can be obtained. A review of these calculations, which are presented in Table 2.4, reveals that such a firm has only a fifty percent chance of surviving through the fourth year. If it lasts beyond that point, however, its chances of continued survival are quite high.

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 (1988) found that firm failure rates were positively related to the firm birth rates in the three previous years, a relationship which 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.

2.2.5. Mortality and Growth - The Firm Life Cycle [Grow or Go Under?]

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

TABLE 2.4

Estimate of Age-Specific
"Survival" Rates of a "Representative"
Micro-Enterprise in Sierra Leone
-1974-1980-

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
92%	81%	64%	50%	42%	37%

Note:
The yearly age-specific death rate percentages for India for the first six years (see Table 2.3) were applied to the actual figures for new Sierra Leone firms in 1974 surviving until 1980. (Chuta and Liedholm). The actual first year death rate in Sierra Leone, however, is used to calculate the chance of surviving until year 1.

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 1976-86 U.S. Establishment Longitudinal Microdata files, discovered that the six-year survival rate of micro (1-4 employees) firms experiencing some growth was almost three times that of firms with zero growth. Few firms, however, were found to grow in their first four years; expansion typically occurred after the fourth year. They suggest that the life cycle of a typical firm begins with four years of struggle, followed by a sudden spurt of growth that continues for at least two years. The results indicate that in the United States, firms that survive the first three or four years and/or grow have higher chances of continuing survival.

Evidence from Sierra Leone indicates, however, that relatively few of the surviving manufacturing micro-enterprises grew even slightly, particularly in rural areas. An analysis of the responses from the 128 manufacturing firms in the 1980 survey that had been previously enumerated in 1974 reveals that none of the enterprises in the smallest rural enumeration area expanded at all; in localities with 2000 to 20,000 inhabitants, 13 percent of the surviving firms added workers, while in the larger localities with 20,000 or more inhabitants, the percentage of firms growing was 31 percent. This preliminary finding would indicate that growth within the micro-enterprise size category was rather minimal. It would be instructive to learn if similiar sluggish results hold elsewhere in Africa.

2.3 Graduation Issue - Firm Expansion

What proportion of the growth of modern small and medium enterprises in Africa is due to the expansion of once micro enterprises through the size structure? 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 micro-enterprises 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, in fact, that virtually all larger private enterprises started originally 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 severly restrict this "graduation" process (see, for example, Kilby, 1988, and Biggs et.al., 1987).

Empirical evidence on the "graduation" of enterprises in developing countries has to date been rather sparse and not systematically compiled. Nevertheless, some initial information can now be gleened from a re-analysis of bore-hole type studies of modern small and medium industry conducted in four African countries, - Rwanda (Ngirabatware et.al., 1988), Botswana (Governmental of Botswana, 1984) Sierra Leone (Chuta and Liedholm, 1982), and Nigeria (Harris, 1965) - two Asian countries, - Philippines (Anderson and Khambata, 1981) and India (Little et.al., 1987) - and one Latin American country - Colombia (Cortes et.al., 1987).[24] In each of

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24. Specifically, the required data were obtained from studies of 28 private firms with 30 to 200 employees in Rwanda, 25 private firms from 11 to 200 employees in Botswana, 42 firms with 1 to 200 employees in Sierra Leone, 64 firms with from 11 to 200 employees in Nigeria had traders or 47 firms with 11 to 200 employees in the Philippines, and from 244 firms with

these surveys, information was obtained from the entrepreneurs on their firms' origins and growth, including employment data currently and 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 2.5.

One important finding that emerges from these particular studies is that modern small and medium manufacturing firms did not primarily originate as micro-manufacturing enterprises. Indeed, in four of the five countries, the majority of modern small and medium firms did not "graduate" from the micro "seedbed," but rather started with more than ten employees.[25] 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 American. 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.

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over 11 employees in 6 subsectors in India. The Colombian figures include only metal working firms.

25. The "graduation" rate may be somewhat understated, however, because the figures do not reflect those who might have origins in non-manufacturing micro-enterprise, such as in trading and in agriculture. This relationship needs further study.

TABLE 2.5

Origins of Modern Small and Medium
Private Manufacturing Firms
(with 11 employees or more)

Region/ Country	Year	# 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%
Sierra Leone	1975	42	11-200	30.1	69.9
Rwanda	1987	28	30-200	10.7	89.3
Botswana	1982	20	11-200	20.0	80.0
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.
Rwanda - computed from data compiled by Ngirabatware, Murembya, and Mead, 1988.
Sierra Leone - computed from 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.

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 argued by Peter Kilby (1988), refers to a crucial deficiency in indigenious entreprenurial performance as firms grow beyond ten employees. It is a deficiency, not in the "innovation", but rather in the "mere management" - coordination and control - functions of the entrepreneur and is, Kilby argues, much more of a problem in Africa, particularly in the East/Central Regions, than elsewhere. More testing is required to verify the importance of this possible bottleneck.

Variations in "graduation" rates appear by sector. The Indian data are sufficiently detailed to provide some insight on this issue and are presented in Table 2.6. In the machine tools, printing, and shoes industries, over 70 percent of the modern small and medium firms emerged from the micro "seedbed", while in the power loom, iron-castings and soap industries, the balance between "graduating" and already existing firms was approximately equal. 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 6-10 workers that "graduated" was higher

TABLE 2.6

India: Origins of Modern
Small and Medium Firms

Industry	# of Firms	Percent with Micro Origin - "graduated"	Percent with no Micro Origin
Shoes	32	75.0%	25.0%
Printing	47	74.5	25.5
Machine Tool	74	73.0	27.0
Soap	19	57.9	42.1
Power Looms	29	55.2	44.8
Iron Casting	43	46.5	53.5
TOTAL		65.6	34.4

Sources:
computed - from Little et.al., 1987.

than those in the 1-5 initial worker size group. 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.[26] 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 micro enterprises 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 somewhat more indirect evidence. In that country in 1974, there were 9760 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 micro enterprises did so each year. In the Philippines, if one makes similar computations, the annual rate of micro manufacturing firms growing into small or medium firms is 0.7

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26. These results are consistent with recent research on small businesses in the U.S. that has found that firm growth decreases with age as well as with firm size (Evans, 1987). This research, which controls for the exit of slow growth firms, and tests for the age and size effects on growth separately, thus also casts some doubt on the empirical relevance of Gibrat's Law, (i.e. firm growth is independent of firm size), particularly when a complete size distribution of firms is examined.

percent.[27] Although the Philippine rate is still miniscule, it is two and one-half times larger than the African rates.

27. Between 1967 and 1975, the number of establishments with from 10-200 workers increased by 316; in 1967, there were 41,000 micro establishments (Anderson and Khambata, 1981).

III POLICY AND PROJECT ISSUES

The preceding discussion highlighted several findings that have important implications for micro and small-scale enterprise policy and projects. These policy and project issues must each be examined.

One key policy issue is what effect government policies have on the growth of dynamically efficient micro and small-scale enterprises in Africa. Are they primarly responsible for the meagre "graduation" rate and the "missing middle" in the size distribution of firms?

It is frequently argued (see, for example, Little et.al., 1988, 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 fall subject to these various governmental policies, many of which fall proportionately more heavily upon them. Consequently, there is a disincentive 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).

Comparable evidence unfortunately does not exist for Africa. One key issue to be illuminated is how regulations and taxes affect firms by size, both de jure and de facto. Often those that formally apply (de jure) are not enforced or, if so, are applied unevenly, subjecting the firm to harassment or pressures for side payments. A second key issue is how policies "beneficial" to smaller enterprises (such as access to goverment

finance, import quotas, training assistance, or foreign exchange) differentially affect firms of different sizes, both de jure and de facto. Do these positive policies outweigh the negative ones at varying size levels? Finally, it is important to ascertain whether these governmental policies, both negative and positive, arise all at once when a firm reaches a certain size or whether they phase in gradually, or in discrete steps, as a firm expands and evolves?

Preliminary evidence, most of it antecdotal and episodic, indicates that the effects of governmental policy do change as the firm grows, even within the micro-enterprise size category. These policies, however, do not all appear to affect the firm at the same time as, for example, when the firm reaches the "visible" size. Even the smallest micro firm cannot avoid the effects of import duties, quota, or an overvalued currency. As the 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 (see Ngirabatware et.al., 1988) and licensing and registration fees in Sierra Leone, all of which per unit of output fall heavily on the micro or small firm when applied. There is thus a strong discontinuity when the firm reaches this size (or becomes "visible") as its marginal tax rate jumps precipitously. If other policies also were to come into effect at the same time as these taxes, this discontinuity could be exacerbated. These various regulations and taxes, however, are typically imposed by different governmental units so it is unlikely that they would all be actually applied at the same size level. Clearly, however, careful attention needs to be paid to identifying and avoiding sharply net negative policy discontinuties that would act as a disincentive to firm expansion.

As yet, there are no studies to indicate whether these policy disincentives are any greater in Africa than in Asia.

At the project level several additional issues arise from these findings. First, do the types of direct assistance needed vary as a firm grows? Initially, working capital may be the crucial need for micro firms, but as firms evolve, managerial, technical, and marketing assistance may become more central. Indeed, an initial "single" missing component may become "multiple" as the firm expands.

Second, 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 three years of a firm's existence - when the learning pitfalls are at a maximum - a three year old firm is more likely to be economically viable than a new firm. Consequently, project managers wanting to minimize their own risks might choose to focus their interventions on existing firms rather than on new ones.

Although these preliminary findings have provided an initial glimpse of how general policy and specific projects might influence 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 partially filling this knowledge-gap.

IV SUMMARY

Small manufacturing firms in developing countries are evolving over time. There is a secular shift toward larger firms, based in larger localities, producing more modern products. How is this transformation taking place? Firm-level data provide the following insights into the patterns of firm birth, expansion, and deaths.

The vast majority of new firms are micro-enterprises which, as per capita income grows, are born increasingly in larger localities. Mortality rates are highest for the smallest firms, and lowest for the largest firms. Mortality rates are also highest in the initial three to four years, after which firms have a substantially higher chance of survival.

In terms of firm expansion, firm-level data suggests that the overwhelming majority of African micro-enterprises remain in that size category; relatively few "graduate" through the size structure. Similarly, the majority of African small and medium-sized firms do not originate as micro firms, but rather begin at the larger size level. Furthermore, the number of small firms that originate as micro firms is higher in West than in East Africa. The effects of policy on the growth pattern of firms is unclear, and must be further explored in the context of both de facto and de jure regulations.

APPENDIX A

Data Problems

Data presented in this paper are drawn from many different studies, each with a unique intent, method of collection, and method of analysis. While the data are not completely comparable, they have been examined for consistency[1], and can therefore be used in a broad-brush analysis such as that presented in this paper.

Three recurrent problems appear in the data used: quality of data, coverage, and lack of firm level data. These are examined briefly below.

The difficulties in obtaining high quality firm-level data in developing countries are well documented and do not require full enumeration here. Problems arise in defining a representative sample of firms, minimizing recall errors and purposeful untruths, and avoiding errors due to seasonality. Given that these problems inevitably exist, one can only examine the methods used by the investigators to minimize these problems.

Coverage is another general problem in developing country data, given the lack of national sampling frames and the relative invisibility of the smallest, most rural enterprises. Since the smallest firms are most difficult to identify and they have the highest birth rate, birth rates are biased downward. Firms that disappear are difficult to trace, therefore death rates and graduation rates may be biased upward. Coverage problems are compounded by difficulties in defining what constitutes an enterprise,

1. For example, if net growth in number of firms is known to be positive, firm birth rates must be higher than mortality rates for a given time period.

particularly for activities involving women and children. These problems are further exacerbated by sampling methods used. For example, several of the studies cited purposefully excluded the smallest firms from their population of interest.

The use of aggregate data in studies of firm level dynamics presents a series of difficulties. First, this method prohibits examination of firm-specific growth and mortality patterns, including analysis of age, size, location, and sector of firms. Attempts to define such patterns with aggregate data have generated incorrect estimates. Second, aggregate data fail to identify firms that are created and then disappear within the period under study, leading to the exclusion of the shortest-lived firms from dynamics studies. This also results in the use of net births rather than total births per time period.

When these problems appear to seriously bias the figures presented in this paper, an attempt is made to note the direction and magnitude of the bias. Further work is required on how to analyze data with these biases, and how to minimize these problems in future research on firm dynamics.

BIBLIOGRAPHY

Anderson, Dennis, "Small Industry in Development Countries: A Discussion of the Issues." World Development. Vol. 10, #11, 1982, pp. 913-948.

_____ and Farida Khambata, Small Enterprises and Development Policy in the Philippines: A Case Study. World Bank Working Paper No. 468, July 1981.

Berry, Albert and Armando Pinell-Siles, "Small-Scale Enterprises in Colombia: A Case Study." World Bank Studies on Employment and Rural Development #56, Washington D.C., 1979.

Biggs, Tyler and Jermey Oppenheim, "What Drives the Size Distribution of Firms in Developing Countries." EEPA Discussion Paper No. 6, HIID, Harvard University, 1986.

Bolton J.E., Small Firms; Report of the Committee of Inquiry on Small Firms. London Her Majistry's Stationary Office, 1971.

Botswana, Government of, Report on Evaluation of FAP. Gaberone: Minstry of Finance and Development Planning, 1984.

Chenery, Hollis, Sherman Robinson, and Moshe Syrquin, Industrialization and Growth: A Comparative Study. Oxford University Press, 1986.

Chuta, Enyinna and Carl Liedholm, Employment and Growth in Small-Scale Industry: Empirical Evidence and Policy Assessment from Sierra Leone. St. Martin's Press, 1985.

_____ and Carl Liedholm, "Employment Growth and Change in Sierra Leone Small Scale Industry: 1974-1980." International Labour Review, Volume 121, #1, Jan-Feb., 1982, pp. 101-112.

Cortes, Mariluz, Albert Berry, and Ashfaq Ishaq, Success in Small and Medium-Scale Enterprises: The Evidence from Colombia. Oxford University Press, 1987.

Evans, David, "Test of Altenative Theories of Firm Growth," Journal of Political Economy, Volume 95, #4 (August, 1987), pp. 657-674.

Fisseha, Yacob and Omar Davies, "The Small-Scale Manufacturing Enterprises in Jamaica: Socioeconomic Characteristics and Constraints." MSU Rural Development Series Working Paper No. 16, Michigan State University, 1981.

Frischman, Alan, "The Survival and Disappearance of Small Scale Enterprises in Urban Kano, 1973-1980." Draft paper, 1988.

Haggblade, Steven, Peter B. Hazell and James Brown, "Farm-Nonfarm Linkages in Sub-Saharan Africa." Policy, Planning, and Research Working Paper No. 6, ARD/World Bank, April 1988.

Itao, Arnulfo, "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 1980.

Kallon, Kelfala, "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, 1986, Philadelphia.

Kilby, Peter, "Breaking the Entrepreneurship Bottleneck in the Late-Developing Countries: Is There a Useful Role for Government?" Draft paper, Wesleyan University, March, 1988.

_____, "Small Scale Industry in Kenya." Working Paper No. 20, MSU Rural Development Series, Michigan State University, 1982.

Liedholm, Carl and Donald Mead, "Small Scale Industries in Developing Countries: Empirical Evidence and Policy Implications." MSU International Development Paper No. 9, Michigan State University, 1987.

Little, Ian M. D., Dipak Mazumdar, and John M. Page, Jr., Small Manufacturing Enterprises: A comparative Analysis of India and Other Economies. Oxford University Press, 1987.

Marshall, Alfred, Principles of Economics. 8th edition, London: Macmillan, 1920.

Nag, A., "Small Industries: Aspects of their mortality." The Economic Times, Oct. 6, 1980, Delhi, India.

Ngirabatware, Augustin, Leonidas Murembya and Donald Mead, "Large Private Manufacturing Firms in Rwanda: Current Situation and Policy Impact." Draft paper, July, 1988.

Phillips, Bruce D. and Bruce A. Kirchhoff, "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, 1988.

Staley, Eugene, and Richard Morse, Modern Small Scale Industry For Developing Countries. New York: McGraw-Hill, 1965.

Steel, William F., "Female and Small-Scale Employment under Modernization in Ghana." Economic Development and Cultural Change, Vol.30, #1, Oct. 1981, pp. 151-167.

Swain, Frank and Bruce Phillips, "The Relationship Between Business Failures and Economic Growth: 1978-1984." Mimeo, Office of Advocacy, U.S. Small Business Administration, Washington, D.C., September 1985.

Timberg, Tom, "Report on the Survey of Small-Scale Industry Units in Bombay." World Bank Development Economic Development; Washington, D.C., 1978.

U.S. Small Business Administration, The State of Small Business-1983. Washington D.C.; U.S. Government Printing Office, 1983.

_____, The State of Small Business-1986. Washington D.C., U.S. Government Printing Office, 1986.

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