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Project Report

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II

ECONOMIC ANALYSIS OF EFFECTS OF BUSINESS CYCLES ON THE ECONOMY OF CITIES

INDUSTRIAL STARTUPS AND CLOSURES DURING THE BUSINESS CYCLE: POLICY GUIDES FOR AMERICA'S CITIES AND SUBURBS

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A severe national recession in 1973-75, followed by a weak expansion from 1975 to 1979 and another recession in 1979-82, has left many local governments with persistent unemployment and budgetary stress. While these problems are especially acute for central cities adversely affected by sectoral shifts in the national economy and a deteriorating employment base, previously healthy suburban areas have not been immune. Communities have responded to these problems with accelerated economic development efforts that center on advertising campaigns, site selection assistance, financial incentives, tax abatements, and employment training programs. The expressed purpose of these programs is to attract new businesses and retain existing ones, increasing or stabilizing the local tax base and providing jobs to unemployed residents.

In many places, however, these efforts are not as effective as they could be because they do not take into account the effects of national business cycles on local employment. This article attempts to analyze those effects and suggest how localities can adapt their economic development strategies to be more successful. One thing we have learned from the experience of the 1970's and 1980's is that swings in the business cycle are a frequent event. Thus an understanding of local responses to national cycles will continue to be relevant for improving and guiding future local development efforts.

This paper begins by considering cyclical changes in metropolitan employment, in total and by components. Employment growth is determined by rates of job creation resulting from births of new establishments; job dissolution resulting from establishment closings; employment changes resulting from expansions or contraction in continuing plants; and employment changes resulting from the net migration of establishments. This kind of analysis is valuable because local development programs are designed around a similar framework: specific development strategies are formulated to generate births of new

firms, to encourage expansions of existing firms, to encourage the in-migration of establishments, to discourage local closings, to discourage contractions of existing firms, and to discourage the out-migration of establishments. A second purpose of this paper is to compare the cyclical behavior of central cities and suburbs to determine whether central city employment is more variable over the business cycle than surburban employment. Finally, this paper will examine the implications of our findings for local development policy.

The availability of Dun and Bradstreet data on annual employment totals and locations for individual establishments permits us to analyze local employment changes on a disaggregated basis. This study combined four years of Dun and Bradstreet data to create employment histories for more than 53,000 establishments in three representative and important manufacturing industries: machine tools, electronic components, and motor vehicles.

The results of the study indicate two findings of immediate interest. One is that cyclical fluctuations in metropolitan employment are explained not by expansions and contractions in employment in continuing establishments, but by fluctuations in births and closings of establishments. Employment in continuing establishments, which was expected to contract during recessions and expand during recoveries, was found to be stable over the cycle or to behave countercyclically. Instead, fluctuations in establishment births and closings explain employment growth and decline over the cycle. During expansions in the national economy, local growth occurs because of a high establishment birth rate and a low establishment failure rate. During downswings in the national economy a rising failure rate and falling birth rate are responsible for employment decline.

Second, each industry's cyclical pattern is different in central cities and in suburbs; an industry experiences greater cyclical variability in the area where it is growing most rapidly. A strong expansion in a healthy region, which is explained primarily by high birth rates, turns into a relatively severe recession when the newly created firms fail at high rates during a downswing in the national economy.

These findings, have important implications for local development planning. A local development agency's portfolio of development strategies should adjust to the phase of the business cycle. During expansions in the national economy, rates of business formation are high, and local development efforts should emphasize creating firms and attracting branches. During periods of national economic decline however, strategies to attract new establishments will be less effective, and a larger share of development efforts should be devoted to helping struggling firms secure a foothold. The results of this study show that many potentially viable businesses created during the expansion fail during the subsequent recession because newly created firms lack adequate capital and established markets to see them through periods of slack demand. (See for example Litvak and Daniels, 1979; U.S. Small Business Administration, 1983). The local development portfolio therefore, should include short-term working capital loans to aid promising businesses threatened with failure, and this focus in the development portfolio should increase during downswings in the national economy. Expansions in continuing firms occur throughout the cycle, during recessions as well as expansions. Thus, programs designed to aid these establishments need not be adjusted over the cycle.

This study is divided into four sections. The first section provides a brief review of studies that have used the Dun and Bradstreet Market Indicators File to analyze employment changes and a review of hypothesis that ex-

plain city/surburb differences in the business cycle. The second section describes the data and methodology. The third section presents findings. The fourth section draws conclusions and discusses policy implications.

Previous Literature

The literature review is divided into two parts. The first part reviews studies that used all industries in the Dun and Bradstreet file to analyze the components of employment change in subnational economies. The second part reviews studies of local business cyles.

Struyk and James (1975) studied employment changes in all manufacturing industries within four Standard Metropolitan Statistical Areas. The study covered the growth period from 1965 to 1968 and concluded that the manufacturing industry was decentralizing. They found that the most important component of metropolitan employment growth was in establishments that remained stationary throughout the observation period and that natural increase, births minus closings, played a secondary role. The spatial pattern of births greatly favored areas outside the central city and closings were, in general, as high in suburbs as in central cities. Our data on all SMSAs and three industries in the growth period 1973 to 1979 are consistent with these finding of the Struyk and James study.

Birch (1979) used the Dun and Bradstreet data to analyze the components of regional employment change. Birch studied the periods 1972 to 1974 and 1974 to 1976. Both periods include one year of economic expansion and one year of economic contraction. Birch's analysis shows that the sequential closing and migration of establishments plays a small role in regional differences in growth rates and, in particular, the growth of the sunbelt. He found high establishment birth rates and on-site expansions to be the most important

components of change and the primary factor in the shift of employment from frostbelt to sunbelt; finally, he noted that plant closing rates are similar in all regions.

A number of studies have explored reasons for differences in local economies' responses to swings in the national economy. Findings from several of these studies identify characteristics of local economies that influence their responsiveness to national recessions.

A local economy's industrial composition has been found to be an important determinant of its response to national cycles (Borts 1969; Browne 1978). Industries vary in their responsiveness to the business cycle, and local economies comprised of a high proportion of cyclically sensitive industries will experience greater exposure to national cycles. In a study of the cyclical variability of central city and suburban economies, Manson (1983) found central city economies to be more stable over the business cycle than suburban economies. The major reason was that both durable goods manufacturing income and construction income are sensitive to the business cycle and a lower proportion of central city income is generated in these industries than is the case for suburbs.

Other authors, such as Borts (1960), Engerman (1965), and Howland (1984) have hypothesized that a local economy's rate of growth influences its cyclical variabilty. Bort correlated manufacturing growth rates in 33 states with states cyclical amplitude and found that strongly growing states were more variable than weakly growing states. The findings from the Engerman study were similiar. In a study using state level data Howland develops a model that holds industrial composition, as well as a number of other variables, constant. She found that employment in states with new capital was more cyclically variable than employment in states with an old capital stock. We

would expect a state's rate of secular growth to be highly and negatively correlated with the age of its capital stock. The study reported here uses data that are disaggregated by industry and establishments and finds results consistent with those reported above.

Another hypothesis holds that employment in headquarters is less vulnerable to economic cycles than employment in branch locations. In this interpretation, cities can be divided into "command and control" centers and "production" centers (Noyelle and Stanback 1983). The former have a high concentration of service and management activities, which should insulate them from cyclical fluctuations. Firms are more reluctant to layoff managerial and administrative employees during recessions than production workers.

All three hypotheses suggest that employment fluctuations in suburbs should be greater than that of central cities. A favorable industrial composition, slow economic growth and a large proportion of employment in administrative rather than productive tasks should mitigate employment swings in central cities.

This study controls for city/suburb differences in industry structure by considering three industries rather than metropolitan economies in total. The results of this study will be able to shed light on the second hypothesis by comparing long run rates of industry growth in metropolitan areas with the local economy's cyclical variability. Unfortunately, the Dun and Bradstreet data will not permit a testing of the third hypothesis, because the data do not distinguish between administrative and production employees by establishment.

Methodology

All establishments in three industries were drawn from the D&B Duns Market Indicators (DMI) files for 1973, 1975, 1979, and 1982. The data set includes 27,014 machine tool establishments, 14,067 electronic component establishments, and 11,909 motor vehicle establishments.[1] Because the sum of employment in each industry is equal to 100 percent of total employment as reported by the Country Business Patterns (1973; 1975; 1979), the data are treated as a census rather than a sample.

These industries represent an average-growth industry, machine tools, which grew at national annual average rate of 2.2 percent from 1973 to 1979; a fast growth industry, electonic components, which grew at a national annual average rate of 4.7 percent over the same period; and a stagnating industry, motor vehicles, which grew at a national annual average rate of 0.9 percent over the period. The long-run growth pattern of machine tools is similar to that of all manufacturing employment, which grew at an annual average rate of 2.5 percent over the period 1979 to 1979. Total employment in the three industries represented 3 percent of all manufacturing employment in 1979 (Employment and Earnings 1983).

D&B assigns a unique Duns number to each establishment. The four DMI data sets (one for each year) were merged by combining all data for each establishment under one Duns number. The merger of the four DMI files permited an analysis of employment changes in individual establishments for two recessions, 1973-75 and 1979-82 and one expansion, 1975 to 1979. If an establishment existed in the file in an earlier year but not in a later year the establishment was registered as a closing. If the establishment was absent from the file in an earlier year and appeared in a later year, and had a date

1 Includes all establishments in Standard Industrial Codes 354, 367, and 371.

of birth that corresponded to an interim year the establishment was registered as a birth. If the establishment relocated, it was tagged as a mover. The merged data set then was merged again with the U.S. Bureau of the Census City Reference File. This second merger used zip codes to identify each metropolitan establishment as having either central city or suburban location, using 1977 central city and suburban boundaries throughout the period studied.

One adjustment had to be made in the estimation of jobs created as a result of new business formations. Our work with the D&B data suggests that the DMI file accounts for 13.7 percent of all new employment in the machine tool and electronic components industries that results from establishment births in a given year. By comparison, the DMI file appears to account for a much higher proportion of all new activity in the motor vehicles industry primarily because there are fewer new establishments to record. To correct for the underreporting of new establishments in machine tool and electronic components industries, employment gains resulting from births of new firms were extracted from the file, and scaled upward by 1/0.137. Birth rates in motor vehicles are unchanged. Total employment changes in central cities and suburbs reflect this adjustment.[2]

Findings

The central city and suburban growth rates (peak to peak) disaggregated by components of change, are shown in Table 1. Machine tools and motor vehi-

[2] For a detailed discussion of the creation of this data set see Howland. 1982. Using the Dun and Bradstreet Data for the Analysis of Business Cycles, Washington, D.C.: Urban Institute. For a discussion of the birth adjustment see Howland. 1983. Cyclical Effects at the Local Level: A Microeconomic View, Washington, D.C.: Urban Institute.

cles are shown to be decentralizing, whereas the electronic components industry is becoming more centralized. For example, the average annual growth rate for central city machine tool firms was -2.4 percent, whereas the suburban growth rate was 4 percent. Electronic components employment grew at an annual average rate of 2.2 percent in the central cities and only 0.5 percent in the suburbs. Motor vehicles employment declined by 3.7 percent in the suburbs and declined by even more in central cities at 6.5 percent.

Table 1. Peak-to-peak growth rates in central cities and suburbs, subdivided into components of change, for machine tools, electronic components, and motor vehicles (percentages), 1973-79.

Industry and Components of change	Location	
	Central City	Suburbs
Machine Tools		
Births	4.3	7.1
Closings	7.0	5.4
Net Expansion	0.5	1.9
Migration	-0.2	0.4
Total	-2.4	4.0
Electronic Components		
Births	6.9	5.9
Closings	7.3	8.1
Net Expansion	3.5	2.3
Migration	-0.9	0.4
Total	2.2	0.5
Motor Vehicles		
Births	0.3	0.5
Closings	5.7	5.2
Net Expansion	-0.9	0.7
Migration	-0.2	0.3
Total	-6.5	-3.7

Source: Urban Institute Analysis of the Dun and Bradstreet Duns Market Indicator files

Unfortunately data are not yet available on the relative growth rates of central city and suburban manufacturing for all non agricultural employment for the 1970 to 1980 period. Census employment data are available, however, for 100 cities in 1960 and 1970; those data show that central city employment grew 2 percent over the decade. In 90 standard metropolitan statistical areas 1970 employment could be calculated for the part of the area that was within its 1960 boundaries; the growth rate for those SMSAs was 13.7 percent, indicating that suburban employment exceeded that of central cities (Bradbury et al. 1982, 32). While the data are not completely comparable, due to differences in the definition of employmert by place of residence in the census and by place of work in the Dun and Bradstreet file, these data do suggest that the pattern identified for machine tools and motor vehicles is typical for most employment. Data on central counties' share of SMSA income in manufacturing is consistent with these data on the suburbanization trend. Manson (1983, 108) found that, in 1969, 74 percent of SMSAs' manufacturing income was generated in central counties. By 1980 the figure had fallen to 71 percent. The tendency for electronic components to centralize indicates that innovative manufacturing industries still find central cities the most profitable location for new investment but that this is not the general pattern for all manufacturing. It should be noted moreover, that manufacturing employment is not growing in all suburbs and declining in all central cities. There are clear regional variations in these patterns (See Bradbury et. al. 1982).

As expected, the data indicate that uneven metropolitan growth is explained by uneven birth and expansion rates. For example, suburban machine tool employment grew faster than central city employment because suburban areas experienced higher birth rates of new establishments and greater expansion rates in continuing firms (See Table 1). There is some tendency for

closings to be higher in the slow-growth area. For example, for employment losses in machine tools due to closings were 7.0 percent in central cities and only 5.4 percent in the suburbs. The net migration of establishments in and out of central cities and suburbs plays a small but positive role in the decentralization of employment.[3] For example, the net outmigration of plants from central cities explains only 8 percent of the 2.4 percent employment loss in the machine tool industry during the period 1973-79. Net inmigration of establishments to suburbs explains only 10 percent of the 4.0 percent employment growth in the machine tool industry.

These data indicate that central city and suburban differences in growth result primarily from uneven birth and expansion rates. Local areas capture a disproportionate share of aggregate employment growth through high rates of new business formations and expansions in continuing establishments. Spatial differences in closing rates and the net migration of establishments also appear to also play a role in the suburbanization of metropolitan employment in the long run.

It was expected that this general pattern also would explain employment fluctuations over the business cycle. Employment declines during recessions were expected to be caused by contractions in existing establishments, rising establishment closing rates, and falling rates of establishment formations. Expansions in existing establishments, falling establishment closing rates,

[3] Suburban migration figures include all moves in and out of suburbs from central cities and non metropolitan areas. Central city migration figures include all moves in and out of central cities from suburbs and non metropolitan areas.

and rising rates of new business formations were expected to explain employment growth during the economic recovery. This pattern was not found.

Table 2 shows the annual average employment rates over the business cycle in the three industries. These rates are presented for both central cities and suburbs. Table 2 further disaggregates the growth rates into components of employment change resulting from births, closings, net expansions, and migration.

Aggregate growth rates show the expected cyclical pattern; that is, growth rates rise during the expansions and fall during the recessions. This cyclical employment pattern appears to be explained primarily by fluctuations in establishment births and deaths rather than by expansions and contractions in employment at existing plants. Establishment birth rates rise during expansions and fall during recessions. (See Table 2.) Closing rates also show the expected pattern of rising during the recessions and falling during the expansion. However, employment in continuing establishments rarely coincides with the cycle and frequently it behaves countercyclically. For example, growth in central city machine tool employment in continuing establishments was positive during both recessions as well as the expansion. Employment growth in these establishments was greater during the 1979-1982 recession (1.5) than during the expansion (0.5). That pattern is exhibited in several cases for machine tools, electronic components, and motor vehicles. One explanation for this countercyclical employment pattern in ongoing operations is that these establishments are hardy survivors that not only maintain established markets and contracts during recessions, but also pick up contracts and production from establishments that fail during slack periods in the national economy. Another explanation is that work subcontracted during good economic times must be conducted in-house when subcontractors fail during the

Table 2. Annual average rates of central city and suburban employment change over the business cycle, by component of change (percentages)

Industry and location	1973-1975	1975-1979	1979-1982
Machine Tools			
Central City			
Births	2.36	4.59	3.82
Closings	7.96	5.60	9.14
Net Expansion	0.39	0.53	1.54
Net Migration	-0.32	-0.16	-0.42
Total	-5.53	-0.64	-4.19
Suburbs			
Births	4.92	7.82	5.34
Closings	8.27	4.18	7.05
Net Expansion	3.17	1.38	1.19
Net Migration	0.43	0.36	0.54
Total	0.25	5.38	0.02
Electronic Components			
Central City			
Births	2.95	8.43	4.91
Closings	9.74	6.16	7.09
Net Expansion	3.26	3.52	1.65
Net Migration	-0.42	-0.04	0.09
Total	-3.95	5.75	-0.44
Suburbs			
Births	3.71	6.57	6.85
Closings	10.85	6.45	6.65
Net Expansion	3.24	1.71	2.34
Net Migration	0.52	0.34	0.01
Total	-3.33	2.17	2.55
Motor Vehicles			
Central Cities			
Births	0.11	0.32	0.28
Closings	3.67	5.41	5.50
Net Expansion	3.62	-2.94	4.62
Net Migration	-0.23	-0.13	-0.06
Total	-.17	-8.16	-9.90
Suburbs			
Births	0.28	0.66	0.76
Closings	4.60	5.48	8.94
Net Expansion	-7.15	4.72	-0.37
Net Migration	0.46	0.25	0.23
Total	-11.01	0.15	-8.32

Source: Urban Institute Analysis of the Dun and Bradstreet Duns Market Indicators File

recession. A clear exception to this countercyclical pattern is suburban motor vehicles employment, where employment in continuing establishments fell during the two recessions and rose during the expansion.

We suspected that the migration of establishments would slow during recessions and rise during expansions. Establishments were expected to delay relocation plans during periods of uncertain demand and unused capacity at existing plants, and to proceed with plans to relocate when the economy recovered. That does not appear, however, to be the case. There is no evidence that relocation patterns are influenced by national business cycles. Central City employment losses resulting from the net outmigration of establishments are as likely to increase during recessions as they are to fall.

A second set of results compares cyclical fluctuations in central city employment with fluctuations in suburban employment. Because of the absence of a quarterly or monthly employment series for central cities and suburbs, the amplitude of local business cycles is measured as the annual average growth rate during the expansion minus the growth rate during the recession. The larger the difference in annual growth rate between the recessions and the expansion the larger the swings in local employment. A negative value signifies a growth rate rose during the recession and fell during the expansion, in other words, the local economy behaved countercyclically. This method of measuring the amplitude of local cycles is similar to that of Friedenberg and Bretzfelder (1980).

The differences betwen average annual growth rates during expansions and recession are displayed in Table 3. These results indicate that, for all industries, employment levels are most volatile where jobs are growing most rapidly. Machine tool and motor vehicle employment is more variable in

suburbs and electronic components employment is more variable in central cities.

To determine which of the components of employment change are responsible for an industry's greater cyclical variablity where it grows most rapidly, differences in central city and suburb establishment birth and closing rates during the recession and the expansion were calculated. Establishment birth rates during the expansion minus establishment birth rates during the recessions and establishment closing rates during expansion minus establishment closing rates during the recession indicate the amplitude of swings in establishment formations and dissolutions over the business cycle. The results, shown in Table 4, generally show that both establishment birth rates and closing rates are more variable where the industry is growing most rapidly. For machine tools and motor vehicles, establishment births and closings are

Table 3 . Average annual growth rate during the expansion minus the average annual growth rate during the recession

Industry and period	Location	
	Central City	Suburbs
Machine Tools		
1973-1979	4.89	5.13
1975-1982	3.55	5.36
Electronic Components		
1973-1979	9.70	5.49
1975-1982	6.19	-0.38
Motor Vehicles		
1973-1979	-8.0	11.16
1979-1982	1.84	8.47

Source: Calculated from the data presented in Table 2.

more cyclically variable in suburbs. For electronic components, establishment births are more cyclically variable in central cities, whereas fluctuations in closing rates for this industry are similar in both central cities and suburbs. This pattern indicates that the greater cyclical variability of both establishment birth and closing rates explain the greater employment variability of fast growth local economies.

Closing rates are more variable in fast growth areas because employment in new firms are a higher proportion of total employment in fast growth areas and these new firms are susceptible to failure during recession. Our analysis of the Dun and Bradstreet data confirms the view that new firms close at higher rates than well-established firms. For example, machine tool firms aged 0-4 years represented 32 percent of all closings in the United States between 1979 and 1982 and only 24 percent of all machine tool firms. Firms aged 20-29 years comprised only 12 percent of all closings in the United States from 1979 to 1982 and yet represented 15 percent of all firms. This pattern for machine tools holds for electronic components and motor vehicles as well as for all firms in general. The U.S. Small Business Administration found that 53.6 percent of all business failures in 1980 were firms aged 0 to 5 years old. Only 18.3 percent of failures were in firms aged 11 years and older (U.S. Small Business Administration 1983, 238). Thus fast-growth economies experience high rates of plant closings during recessions, because these economies have a concentration of new firms, which fail at high rates during the downturn in the economy.

Variability in establishment birth rates also contribute to the cyclical sensitivity of fast-growth areas. One reason why a locality experiences strong economic growth is because new firms and branches find it an attractive location. Establishment birth rates have further to fall in these fast-growth

areas than they do in slow-growth areas where the establishment birth rate is already low.

Table 4 Annual average growth rate during the expansion minus the annual average growth rate during the recession for central city and suburban establishment births and closings

	Central City		Suburbs	
	Births	Closings	Births	Closings
Machine Tools				
1973-1979	2.2	-2.4	2.9	-4.1
1975-1982	-0.8	-3.5	2.5	-2.9
Electronic Components				
1973-1979	5.5	-3.5	2.9	-4.4
1975-1982	3.6	-0.9	-0.3	-0.1
Motor Vehicles				
1973-1979	0.2	1.7	0.4	0.9
1975-1982	0.0	-0.1	-0.1	-3.5

Source: Calculated from the data presented in Table 2.

Summary of Findings and Implications for Economic Development

The data indicate that the pattern of long-run growth differs from that of short-run fluctuations. Metropolitan areas exhibiting strong long-run growth do so because of high rates of new business formations, high net expansions and low closing rates. The net migration of establishments from central cities to suburbs plays a positive but minor role in the suburbanization of manufacturing employment.

That pattern of long-run growth does not, however, hold for short-run fluctuations in local employment. Fluctuations in birth and death rates (rather than fluctuations in employment in continuing firms or migration patterns) explain growth and decline in local employment over the business cycle. One implication is that fast-growth economies also tend to be more cyclically variable than slow-growth economies. The high proportion of mature firms in the area where establishment birth rates are low promotes cyclical stability since mature firms are more likely than new firms to have the retained earnings, established credit ratings, and/or secure markets to survive recessions (U.S. Small Business Administration 1983, 160-163).

This pattern of short-run employment growth and decline shown by the research reported here suggests new possibilities for increasing the effectiveness of local economic development strategies, especially in fast growth economies. Local development programs include a package or portfolio of tools and techniques. Some of these tools and techniques are loan guarantees, grants, capital subsidies, industrial revenue bonds, equity financing, tax abatements, site selection assistance, streamlining of regulations, advertising campaigns, labor force training programs, and public infrastructure development. The relative emphasis on many of these tools, within the development portfolio, should shift with the business cycle.

During periods of national economic expansion, when new business formations are high and branches are being established at high rates, local development strategies should emphasize the attraction of branch plants and incubation of new firms. Site selection assistance, acceleration of the permit approval process, use of loan guarantees and industrial revenue bonds for plant and equipment for small firms, and customized training for potential employees are especially appropriate strategies during this phase of the

cycle. Human and financial resources should be shifted toward these strategies. During periods of rapid national growth and high rates of establishment formations development strategies designed to compete for and encourage new firms are more likely to yield success. As the national and local economy move into a period of economic decline, however, the locale's portfolio of development strategies should shift emphasis from the attraction of branches and new firms and incubation of new firms to the retention of potentially failing firms.

A large proportion of the establishment failures in the recessionary phase of the business cycle are firms created in the most recent expansion. Many of these firms are viable in the long run but have had the misfortune to be hit by a recession before sufficient profits are generated to provide retained earnings, before a credit rating with lenders and suppliers is established, and before markets are secured. During periods of cutbacks, purchasers are more likely to continue agreements with long-term trading partners. To maximize local job growth or to minimize job loss, the development portfolio should be shifted to emphasize the retention of jobs. Financial resources and personnel should focus on the identification and evaluation of viable establishments with financial problems and the negotiation and provision of short-term working capital loans or loan guarantees to carry fledgling firms through the recession.

A pool of working capital funds could be generated through general tax revenues, general obligation bonds repaid through tax revenues, co-operative agreements among private banks to pool funds and diversify the risk, or loan guarantees. Loans do not necessarily need to be provided at below the market rate for this type of "risky" firm. Earlier work has shown that it is access to capital, not the cost of capital, that is the most severe constraint and

cause of failure for small firms (Litvak and Daniels 1979). Therefore a job retention strategy, such as that proposed here, need not be a costly addition to local development programs. Moreover, offering loans at market rates of interest would discourage firms who are adequately served by private capital markets from applying for government assistance and would weed out marginal applicants for loans.

For most localities, this business cycle responsive strategy would require few alterations in current programs. One policy change would have to be the provision of working capital loans or loan guarantees. Most local governments that provide capital to private businesses do so only for the acquisition of plant and capital equipment. The strategy suggested here requires the release of funds for working capital as well.

In addition, the strategy proposed here would require a less specialized staff. Economic development officials would have to be able to shift functions with changes in external economic conditions.

Local development efforts to attract new firms and branches should not completely halt during recessions. Rather, scarce economic development resources should be reallocated so the relative importance of job creation strategies declines during recessions when the number of new business formations is low and the competition and cost of attracting these establishments rises.

Development tools and techniques designed to promote business expansions in ongoing establishments or to court firms considering relocation do not require adjustment over the cycle. The data in Table 2 show that expansion and relocation plans for many establishments continue throughout recessions as well as the recovery. Development strategies that promote expansions in existing plants include financing for new capital, technical and administra-

tive assistance, zoning and regulatory relief, and public infrastructure investment. These strategies are as likely to be as effective in recessionary periods as in growth periods. Strategies designed to attract relocating establishments include advertising at trade meetings and in trade magazines, making contacts with businesses likely to be relocating, and financial incentives. Since relocation plans continue throughout all phases of the business cycle these strategies also do not need to be reduced or augmented over the cycle.

This business-cycle-sensitive strategy can be applied to economies or to particular "target" industries. While the strategy is applicable to all local economies, or specific industries, it is especially appropriate for those that are fast growth. As indicated by the data analysis above, it is fast-growth economies and industries with their high proportion of young firms, that are particularly susceptible to high rates of business failures during the recession. As shown in Table 2 however, slow-growth industries exhibit a pattern similar to but less dramatic than fast-growth industries. For these slow-growth industries, failure rates also rise during the recession and fall during the expansion. Establishment birth rates show the reverse and expected pattern. Thus, the strategy proposed above also would be appropriate for, and would improve development planning in, slow-growth industries and economies as well as those that are fast-growth.

There are limited data requirements to implementing a cyclically adjusted development program. A locale must be able to determine whether rising business failure rates are a sign of secular or cyclical decline. Empirical research on local business cycles has shown that the magnitude and timing of a local cycle cannot be predicted by the national cycle. The local response to the national cycle is not consistent over time (Vernez et al, 1977; Dunn,

1982). Therefore the local cycle will have to be carefully monitored. Fortunately, the U.S. Bureau of Labor Statistics provides monthly employment totals for the states as well as for most of the metropolitan areas which are also available in considerable industry detail. Another source of data is the unemployment rate, which also is available monthly by state and for some labor market areas. These data are collected by the Census Bureau for the Bureau of Labor Statistics.

Stablilization of local employment

To this author's knowledge there are no local development policies that adjust strategies to phases of the business cycle. However, one side effect of the business-cycle-sensitive development strategy proposed here would be the stabilization of local employment over the business cycle. Several local stabilization policies that have been implemented widely either have been initiated by the federal government or are side effects of other federal, state, or local programs. Federal support for local stabilization programs has greatly diminished and recent evidence shows that persistently high interest rates and budgetary problems have reduced the stabilizing effects of local government expenditures.

The federal government set up a program to promote cyclical stability in local economies with the "Economic Stimulus Package of 1977." This legislation provided revenue-sharing assistance and earmarked grant monies for local public works or public service employment to state and local governments in times of recession. In both cases the funding amount was tied to the economic condition of the local economy. Empirical evidence indicated that such attempts to stabilize local economies, and ultimately the national economy, would be ineffective, and that may be one reason the program was never

extended. Gramlich (1979) estimated the response of state and local expenditures to the types of federal aid included in the Economic Stimulus Program. His estimates indicated that in the short run, federal subventions to states and localities did not result in either an increase in local or state expenditure or a reduction in taxes. Instead, local governments used the money to increase budget surpluses. Clearly it is the short-run response that is important for reducing local recessionary unemployment. Over the longer run, federal subventions did result in increased state and local expenditures or reduced taxes, which often meant state and local expenditure increases or tax cuts coincided with the recovery, possible creating inflationary pressure. The changes in local development policy proposed in this paper should not encounter similar problems, since the local development agency initiating the program would also be the implementing agency.

Other studies have found that current local government expenditure patterns have, until the recent recessions, mitigated cyclical employment declines and promoted economic recoveries in the process of meeting other goals. In prior recessions, tax receipts fell, but local government expenditures tended to rise or be stable throughout the downturn for any of several reasons: capital improvements were undertaken as interest rates fell and projects could be carried out at lower costs; budget surpluses acquired during the expansionary phase of the cycle were reduced; and/or government transfer payments, such as unemployment insurance and welfare, rose (Advisory Commission on Intergovernmental Relations 1978). This pattern was not characteristic of the 1973-80 cycle (Manson, 1983, 39-40) and for similar reasons did not stabilize local employment during the 79-83 cycle. Persistently high interest rates plus slow population growth have discouraged capital investments during the most recent downturns, and two recessions in rapid succession eliminated

the budgetary surpluses that locales usually acquired during economic recoveries and spent during downturns. The program proposed in this paper would promote two goals. While designed to promote another goal (in this case, long-run growth), it would have the side effect of stabilizing local economies at a time when other local stabilization programs have become weak and ineffective.

Summary

Results from an analysis of establishment behavior over the business cycle show that variations in local employment levels are explained by fluctuations in establishment births and establishment closings over the cycle. Employment contractions are explained by falling establishment birth rates and rising establishment failures, while employment recoveries are explained by the reverse process, rising establishment birth rates and falling establishing closing rates. Contrary to expectations, employment in continuing firms does not coincide with the cycle and in fact often behaves countercyclically. Establishment migrations also continues unabated throughout recessions.

It is clear from the experience of the 1970s and first half of the 1980s that the business cycle has not been eliminated by national policy makers. Swings in the business cycle are in fact frequent events. Local economic development programs could be made more effective in generating and maintaining jobs if they took the business cycle into account and reinforced market patterns over the cycle. During expansions in the national economy, when establishment birth rates are high, development strategies should be designed to encourage the incubation of new firms and the attraction of branches. When the economy slows and establishment birth rates drop, job generation and attraction strategies will have lower payoffs. The local economy will be

faced with rising establishment failure rates, and local development resources should be reallocated to the provision of short-term working-capital loans to aid small businesses threatened with failure. Not only would the strategy proposed here maximize local employment it would help stabilize local employment over the business cycle.

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