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Area Development and Industrial Decentralization

by

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Area development has been of national concern for many years. A combination of (a) unequal natural and human resource endowments, (b) differential impacts of technological change, (c) secular trends in factor and product prices, and (d) institutional (social, economic, cultural, and political) barriers to resource mobility have resulted in wide differences in the rates and levels of economic development among areas.[1] It is more apparent today than ever before that many of our country's less favored areas are responding sluggishly, if at all, to the forces which are causing our current rate of national economic growth.

Economic Development Legislation

Attempts by the Federal Government to influence local, or area, economic development have also been with us for a long time. There is a long history of Federal support for internal local improvement of which the Act establishing the Tennessee Valley Authority is perhaps the most comprehensive.[2] The report to President Eisenhower leading to the establishment of the Rural Development Program in 1955[3] and the Area Redevelopment Act of 1961,[4] are unique, however, in focusing directly on the problem of lagging local economic development as it is reflected in terms of low-incomes and high levels of un- and underemployment.

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[1]For further discussion see D. G. Sisler, "Regional Differences in the Impact of Urban-Industrial Development on Farm and Nonfarm Income", Journal of Farm Economics, Vol. 41, December 1960, pp. 1100-1113.

[2]See Gordon R. Clapp, The TVA, an Approach to the Development of a Region, University of Chicago Press, Chicago 1955, for a discussion of the scope and content of the TVA program. The TVA Act and Amendments is reprinted on pp. 160-190.

[3]United States Department of Agriculture, "Developing Agriculture's Human Resources", USGPO, Washington, D. C., 1955.

[4]Public Law 87-27, 87th Congress, S.1, May 1, 1961, p. 1

Particularly noteworthy is the separation of the poverty problem in agriculture from the problem of farm price and income instability, and the identification of the importance of local urban-industrial development for the solution of the problems forced by farm families in low-income rural areas.

The Rural Development Program was an interagency effort with administrative coordination centered in the Federal Extension Service. Other agencies of the USDA, the Department of Labor, the Department of Commerce, the Department of Health, Education, and Welfare, Department of Interior also contributed. Although the Program's attack on low-income was visualized as comprehensive, it placed major emphasis on "grass-roots" leadership bolstered primarily by existing resources at the Federal level with some slight increases in personnel at the state level. The Program was tried initially on a "pilot county" basis in a limited number of states. Community, County and State Committees were organized. Projects were begun in education, industrialization, health, transportation, agriculture, and other fields. Despite imaginative efforts by many local development committees, accomplishments were limited by the low level of resources devoted to the program.[1]

In May, 1961, the Area Redevelopment Act was passed. The purpose of this Act is to "achieve lasting improvement" in urban areas characterized by substantial and persistent unemployment and rural areas characterized by substantial and persistent unemployment and underemployment by creating new employment opportunities through the expansion of new and existing facilities and resources in the area. To implement this aim the new law authorized $394 million in loans, grants, technical aid, and other benetifs over a four-year period. The $394 million authorized by the Act included a $200 million loan and grant fund for industrial and commercial projects including tourist facilities, to be divided equally between rural and urban areas. A $100 million loan fund and $75 million in grants are set aside for improvement of public facilities such as water and sewage systems and power lines. Four and

[1] V. W. Ruttan and J. K. McDermott, "How Effective is the Rural Development Program", Farm Policy Forum, Iowa State University Press, Summer 1958, pp. 25-31.

one-half million dollars are provided for grants in technical assistance, through federal, state, and private sources, to all communities for surveys of resources and program planning. Ten million dollars are authorized for subsistence grants to workers out of jobs and small farmers while they are training for a different job or improving their skills. There are $4.5 million in grants to finance retraining programs. Also, there is an increased opportunity under Federal Housing Act amendments to rehabilitate blighted industrial and commercial areas, and to obtain urban planning aid in cities, small towns, and counties. Primary program responsibility is placed on an Area Development Administration with the Department of Commerce

Passage of the Area Redevelopment Act complements but does not superceed the older Rural Development Program - now renamed the Rural Areas Development Program. The precise degree of administrative coordination between the two programs has not been completely clarified. It is clear, however, that passage of the Area Redevelopment Act places in the hands of many rural communities program tools that were not available to them under the Rural Development Program and that administrators of the Rural Areas Development Program are planning more vigorous prosecution of program objectives.

Regardless of the combinations of program activities pursued under the Area Redevelopment and Rural Areas Development Programs and the relative weights given to each activity, the success of these two programs will depend heavily on the rate of growth in the national economy and upon the balance of locational forces leading to the centralization or decentralization of economic activity in the economy.[1] In this paper particular attention will be given to the implications of the locational forces for the success of program efforts.

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[1]For further development of this point see V. W. Ruttan, "Dimensions of the Depressed Area Problem", Paper presented at the annual meeting of the Midwest Economic Association, Hotel Sevrin, Indianapolis, Indiana, April 13-15, 1961.

1.0 Location economics and local economic development

The factors or forces which determine the location of a particular firm, the level of production of a particular product, or the total level of economic activity in a community or region can be classified under five broad categories:[1] (1) Transportation rates on inputs and final products; (2) the geographic location of inputs and product markets; (3) supply schedules of production factors or inputs; (4) production functions or input-output ratios; (5) demand function for products. This is a more precise classification system than the "orientation" approach which attempts to analize the factors or forces affecting location in terms of whether the firm or industry is primary materials, market or labor oriented.[2]

To the extent that a community or region can, by its own volition or through program assistance, modify any of the elements classified under the five headings listed above it can exert an influence upon the location of firms and the total level of its economic activity. The effectiveness of program activity will depend, therefore, on the magnitude of the volitional forces or factors over which it can, either by itself or through program assistance, gain some degree of control relative to the autonomous forces which determine the overall environment within which local economic development takes place.[3]

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[1] The classification scheme is based on L. N. Moses, "Location and the Theory of Production", Quarterly Journal of Economics, Vol. 75, No. 2, May 1958, pp. 259-272. See also L. T. Wallace and V. W. Ruttan, "The Role of the Community as a Factor in Industrial Location", Papers and Proceedings of the Regional Science Association, Vol. 7, 1961 (forthcoming).

[2] The "orientation" approach is primarily based on Alfred Weber, Theory of the Location of Industries, (trans. C. J. Fredrich), University of Chicago Press, Chicago, 1929. For examples of use of the "orientation" approach see G. E. McLaughlin and S. H. Robock, Why Industry Moves South, National Planning Association, Washington, 1949; J. R. P. Friedman, "Locational Aspects of Economic Development", Land Economics, Vol Vol. 32, August 1956, pp. 213-227, and J. R. P. Friedman, The Spatial Structure of Economic Development in the Tennessee Valley, Research Paper #1 (Program of Education and Research in Planning), University of Chicago Press, March 1955; V. W. Ruttan, "The Potential in Rural Industrialization and Local Economic Development", in E. O. Heady, et.al. (eds.), Agricultural Adjustment Problems in a Growing Economy, Iowa State College Press, Ames, 1958, pp. 185-197.

[3] For an interesting discussion of autonomous and volitional forces in economic development, see J. K. McDermott, "A Framework for Rural Development", Journal of Farm Economics, Vol. 42, August 1960, pp. 567-575.

Example of community efforts to utilize or expand control over volitional factors in each of the five areas outlined above are not difficult to find. Factor supply functions for labor have been modified by the provision of vocational training facilities, job information services, and by formal and informal limitations on employee bargaining power. Factor supply functions for capital have been modified by community actions designed to overcome capital rationing imposed by commercial credit sources. Loans made by local development groups, low rent leases on buildings, or outright capital grants are examples. Community pressures have frequently been developed to exert an impact on the institutions which set transportation rates or to increase competition among carriers (the political pressures for waterway improvements for example). Efforts to develop local raw material supplies as an attraction to industrial location are widely attempted. Firm production functions have been modified by the creation of non-profit research and consulting organizations such as the Midwest Research Institute (Kansas City) with the purpose of stimulating the rate of technological progress in existing firms and/or attracting technologically progressive firms to the area. Efforts have been made to modify product demand curves by increasing local consumption of products produced by firms located in the community (Studebaker automobiles in South Bend, for example).

However, explicit recognition of the potential influence of volitional community action on industrial location, plus the fact that such efforts have been and are being made in other communities does not demonstrate their effectiveness for all communities or areas. When attention is focused on the communities role in the location process, it seems reasonable to divide each of the five sets of factors or forces suggested above into two categories. In one category there are the specific location factors which lie outside the control of the community or area and hence must, from the community's perspective, be treated as autonomous. On the other hand, there are some specific location factors which can be influenced by volitional community action. The number of factors subject to volitional community action will vary sharply. For small communities and areas it seems clear that the factor supply

curves can be affected more readily by community action than the other four elements of the location filing system or model outlined above. In general, however, the larger the community or geographic unit the larger the number of elements of the model which can be influenced by volitional community action and the smaller the number that will be determined by forces outside the community or area. Even for relatively large areas, however, the number of elements subject to volitional community action will be relatively small.

2.0 Concentration of economic activity in Standard Metropolitan Areas

A review of the past several decades shows no strong tendency for the dispersion of industrial employment to the less industrialized regions of the nation (Table 1).[1] Only the Pacific and West South Central Regions have significantly increased their share of total industrial employment during the past ten years.

It also seems clear that the dispersion of industrial employment that has occurred in recent years has not been accompanied by an increase in the proportion of total manufacturing employment located outside of the SMA's. For the United States as a whole, the percentage of manufacturing employment located outside of the standard metropolitan counties declined from 28 percent in 1947 to 26 percent in 1958 (Table 2). There were, however, differences in the tendencies toward industrial dispersion and concentration among the several regions. In the East South Central Region the percentage of total manufacturing employment located outside of the SMA's increased in both 1947-54 and 1954-58. In the East North Central Region the percentage increased between 1947-54, but declined in 1954-58. For the entire period 1947-58, however, the percentage of total regional manufacturing employment in the SMA's remained unchanged or increased in every region except the East South Central Region.

The importance of small town and rural industrial employment in the Southeast can be traced to the heavy concentration of lumber and textiles in the regions' economy. With a relatively high percentage of total national employment in these two industries already located in the South it seems likely that a location pattern favoring the SMA's can be expected to emerge in the East South Central Region in the future.

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[1] This is in contrast to the longer run tendencies which apparently became dampened in recent decades. For an interesting historical treatment of employment and population, see Robert Gallman, "Trends in the Location of Population, Industry, and Employment", Paper presented at the National Agricultural Policy Conference, Rock Eagle Center, Rock Eagle, Georgia, September 12-15, 1961.

Table 1 Total Manufacturing Employment of the United States, Distributed by Geographic Region: 1899-1954.

Year	Total U. S. manufacturing employment 1/ (millions)	Manufacturing employment of geographic regions, as percent of U. S. total								
		New England	Middle Atlantic	East No. Central	West No. Central	South Atlantic	East S. Central	West So. Central	Mountain	Pacific
1899	4.9	17.6	34.1	23.2	5.8	9.5	3.7	2.4	1.0	2.7
1939	9.5	11.8	28.9	28.3	5.2	11.6	4.3	3.5	0.9	5.5
1947	14.3	10.3	27.6	30.2	5.5	10.7	4.4	3.9	1.0	6.4
1950	14.5	9.8	27.0	29.9	5.6	11.1	4.4	4.1	1.1	7.0
1951	15.3	9.6	26.5	29.9	5.8	10.9	4.4	4.2	1.1	7.7
1952	15.7	9.4	26.5	29.4	6.0	11.0	4.4	4.2	1.1	8.0
1953	16.7	9.4	26.2	30.0	5.8	10.7	4.4	4.3	1.1	8.1
1954	15.7	9.1	26.3	28.5	6.0	11.1	4.6	4.6	1.2	8.6
1955	16.3	8.9	25.6	29.0	5.8	11.3	4.7	4.6	1.3	8.9
1956	16.7	8.9	25.8	28.4	5.8	11.3	4.7	4.7	1.3	9.1
1957	16.6	8.7	25.7	28.2	6.0	11.3	4.6	4.7	1.3	9.5
1958	15.5	8.8	24.5	26.4	6.1	11.9	5.0	5.0	1.5	9.9

1/ Includes employment, both production workers and nonproduction personnel, at operating manufacturing plants only; excludes employees of manufacturing firms at separately reported central administrative offices, sales offices, auxiliary units, and other non-manufacturing activities.

Source: Murrary D. Lessel, "Long Term Regional Trends in Manufacturing Growth: 1899-1955", U. S. Department of Commerce, Office of Area Development, Area Trend Series No. 2, Washington, February 1958, p. 8. and preliminary tabulations provided by the office of Area Development.

Table 2 The Location of Manufacturing Employment[a/] in the United States and Selected Sub-Regions, 1947, 1954 and 1958.

	Metropolitan areas 1/						Non-metropolitan areas		Area Total	
	Large 2/		Medium 3/		Total					
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
United States										
1947	8,305	58	1,952	13	10,257	72	4,027	28	14,284	100
1954	8,902	57	2,468	15	11,371	73	4,259	27	15,630	100
1958	9,114	56	2,720	17	11,834	74	4,190	26	16,025	100
Change										
47-54	597	44	516	38	1,113	83	231	17	1,345	100
54-58	211	53	251	63	462	117	- 68	-17	394	100
47-58	809	46	767	44	1,576	91	163	9	1,740	100
Northeast 4/										
1947	4,172	73	313	5	4,485	79	1,206	21	5,692	100
1954	4,299	73	493	8	4,793	82	1,035	18	5,829	100
1958	4,461	76	447	8	4,909	84	959	16	5,869	100
Change										
47-54	127	92	180	132	307	225	- 171	-125	136	100
54-58	162	404	- 46	-115	116	289	- 76	-189	40	100
47-58	289	163	134	76	424	239	- 247	-140	176	100
East North Central										
1947	2,875	66	455	11	3,331	77	992	23	4,322	100
1954	2,917	65	476	11	3,394	76	1,065	24	4,459	100
1958	2,776	65	509	12	3,285	77	970	23	4,255	100
Change										
47-54	41	30	21	16	62	46	74	54	137	100
54-58	- 140	68	32	-16	- 108	53	- 95	47	- 204	100
47-58	- 99	148	53	-80	- 45	-68	- 21	32	- 67	100
West North Central										
1947	362	46	189	24	551	70	234	30	786	100
1954	408	43	259	28	668	71	271	29	939	100
1958	425	44	251	26	677	70	286	30	963	100
Change										
47-54	46	30	70	46	116	76	36	24	152	100
54-58	16	68	- 7	- 31	9	38	15	62	24	100
47-58	62	35	626	35	125	71	51	29	177	100

Table continued on next page.

	Metropolitan areas 1/						Non-metropolitan areas		Area Total	
	Large 2/		Medium 3/		Total					
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
South Atlantic										
1947	49	3	405	33	454	37	789	63	1,242	100
1954	78	5	463	32	541	38	890	62	1,432	100
1958	83	5	550	35	634	41	919	59	1,554	100
Change										
47-54	29	15	57	30	87	46	102	54	189	100
54-58	5	4	87	72	92	76	29	24	121	100
47-58	34	11	144	47	179	58	131	42	311	100
East South Central										
1947	119	18	193	31	313	49	322	51	635	100
1954	128	17	204	29	332	47	381	53	714	100
1958	142	18	214	27	357	46	426	54	783	100
Change										
47-54	8	11	10	13	19	25	59	75	79	100
54-58	14	21	9	14	24	35	44	65	68	100
47-58	23	15	20	14	43	30	104	70	148	100
West South Central										
1947	103	18	213	39	316	58	233	43	550	100
1954	131	18	303	43	434	61	278	39	713	100
1958	138	17	364	46	503	63	295	37	798	100
Change										
47-54	27	16	90	55	117	72	45	28	162	100
54-58	7	9	61	72	68	81	16	19	85	100
47-58	35	14	151	61	186	75	61	25	247	100
Mountain States										
1947			67	48	67	48	73	52	140	100
1954			97	52	97	52	90	48	187	100
1958			135	57	135	57	100	43	235	100
Change										
47-54			29	63	29	63	17	37	47	100
54-58			38	79	38	79	9	21	48	100
47-58			67	72	67	72	27	29	95	100
Pacific States										
1947	622	68	114	13	737	81	176	19	913	100
1954	939	69	170	13	1,110	82	244	18	1,354	100
1958	1,085	69	247	16	1,332	85	233	15	1,565	100
Change										
47-54	317	72	55	13	373	85	67	15	440	100
54-58	145	69	76	36	221	105	- 11	- 5	210	100
47-58	463	71	132	20	595	91	56	9	651	100

Footnotes to Table 2

a/ Employment in 000's of workers.
1/ A standard metropolitan area is a county or a group of contiguous counties which contains at least one central city of 50,000 inhabitants or more. Contiguous counties are included in a standard metropolitan area if they are essentially metropolitan in character and are sufficiantly integrated with the central city. All data in this table are based on 1947 area definitions.
2/ Metropolitan areas with over 40,000 industrial employees. These include metropolitan areas roughly equivalent to Peoria, Illinois, Columbus, Ohio and Flint, Michigan and larger.
3/ Metropolitan areas with less than 40,000 industrial employees.
4/ Defined to include Maryland and Delaware.
Source: 1948 and 1954 - U. S. Bureau of the Census, United States Census of Manufactures: 1954, Volume III, Area Statistics, USGPO, Washington, D. C., 1957.
1958 - U. S. Bureau of the Census, United States Census of Manufactures: 1958, Preliminary State Reports, Series MC(P), S1-S51, Washington, 1960.

One is forced to conclude, therefore, that to the extent that industrial decentralization is occurring in the American economy, it is a very special kind of decentralization. By and large, it does not represent a shift away from the major industrial centers. Rather it represents a lag in the rate of growth of the major industrial centers in the Northeast and East North Central Regions relative to the growth of major industrial centers in the less industrialized regions of the Nation.[1]

Expansion of manufacturing is not the only route to increased employment. In many areas the non-manufacturing industries offer substantial economic opportunities. Differences in population growth between the SMA's and non-SMA's, however, reinforce the general conclusions reached in our analysis of concentration in manufacturing. Even though total population is less concentrated in SMA's than manufacturing the rate of concentration was, if anything, even more rapid during the 1950's.

Both large and medium SMA's have experienced relatively greater population increases than the non-SMA's (Table 3). In each region the large SMA's increased their share of the regions' population between 1950-1960. All the medium SMA's also increased their share with the exception of the Middle Atlantic Region. All the non-SMA's experienced a decline in their share of regional population. In the East South Central Region there was actually a loss of population outside of the SMA's.

It is interesting to note that the more heavily industrialized regions (Northeast, Middle Atlantic, East North Central, and Pacific) have undergone the least proportional change in SMA and non-SMA population share. The more agricultural regions have undergone the greatest increase in the concentration of population in SMA's.

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[1] This conclusion appears to be in conflict with a good deal of literature on industrial decentralization. See for example, Benjamin Chinitz and Raymond Vernon, "Changing Forces in Industrial Location", Harvard Business Review, Vol. 38, (January-February 1960), pp. 126-136. It is more nearly in line with the emphasis in William J. Byron, "Needed: Local Leadership in Depressed Areas", Harvard Business Review, Vol. 38, (July-August 1960), p. 120.

Table 3. The Location of Population[a] in the United States and Selected Sub-Regions, 1950 and 1960.[1]

	Metropolitan Areas[2]						Non-metropolitan areas		Regional Total	
	Large[3]		Medium[4]		Total					
	Number	%	Number	%	Number	%	Number	%	Number	%
United States										
1950	65,917	44	20,228	13	86,145	57	64,532	43	150,677	100
1960	81,171	45	27,118	15	108,289	61	70,175	39	178,464	100
Change 1950-1960	15,254	55	6,890	25	22,144	80	5,643	20	27,787	100
Northeast										
1950	6,868	74	521	6	7,389	79	1,906	20	9,294	100
1960	7,773	74	585	6	8,358	80	2,152	20	10,509	100
Change 1950-1960[5]	905	74	64	5	969	80	246	20	1,215	100
Middle Atlantic										
1950	23,386	78	1,505	5	24,891	83	5,273	17	30,164	100
1960	26,960	79	1,505	4	28,466	83	5,703	17	34,168	100
Change 1950-1960	3,575	89	0	0	3,575	89	430	11	4,005	100
East North Central										
1950	16,270	54	2,637	9	18,907	62	11,493	38	30,399	100
1960	19,981	55	3,264	9	23,245	64	12,980	36	36,225	100
Change 1950-1960	3,711	64	627	11	4,338	74	1,488	26	5,826	100
West North Central										
1950	3,446	24	1,777	13	5,223	37	8,838	63	14,061	100
1960	4,319	28	2,122	14	6,441	42	8,931	58	15,394	100
Change 1950-1960	873	65	345	26	1,218	91	115	9	1,333	100
South Atlantic										
1950	2,398	11	6,196	29	8,594	41	12,588	59	21,182	100
1960	3,048	12	8,765	34	11,812	45	14,159	55	25,972	100
Change 1950-1960	650	14	2,568	54	3,218	67	1,571	33	4,789	100

Table 3. (Cont.)

	Metropolitan Areas[2]						Non-metropolitan areas		Regional Total	
	Large[3]		Medium		Total					
	Number	%	Number	%	Number	%	Number	%	Number	%
East South Central										
1950	1,915	17	1,456	13	3,371	29	8,106	71	11,477	100
1960	2,318	19	1,766	15	4,084	34	7,966	66	12,050	100
Change 1950-1960	404	70	310	54	713	124	-140	-24	573	100
West South Central										
1950	2,468	17	3,075	21	5,543	38	8,995	62	14,538	100
1960	3,602	21	4,137	24	7,738	46	9,213	54	16,951	100
Change 1950-1960	1,134	47	1,062	44	2,195	91	218	9	2,414	100
Mountain										
1950	564	11	1,067	21	1,631	32	3,444	68	5,075	100
1960	855	15	1,804	26	2,659	39	4,196	61	6,855	100
Change 1950-1960	291	16	737	41	1,028	58	752	42	1,780	100
Pacific										
1950	8,603	59	1,994	14	10,597	73	3,889	27	14,487	100
1960	12,316	61	3,171	16	15,487	76	4,852	24	20,339	100
Change 1950-1960	3,713	63	1,177	20	4,889	84	963	16	5,853	100

[a]Population is in 000's.

[1]Source: U. S. Census of Manufactures: 1954, U. S. Bureau of the Census, U. S. Government Printing Office, Washington, D. C., 1957, and U. S. Census of Population: 1960, Number of Inhabitants, U. S. Bureau of the Census, USGPO, Washington, D. C., 1961.

[2]A standard metropolitan area is a county or a group of contiguous counties which contains at least one central city of 50,000 inhabitants or more. Contiguous counties are included in a standard metropolitan area if they are essentially metropolitan in character and are sufficiently integrated with the central city. All data in this table are based on 1947 area definitions.

[3]Metropolitan areas with over 40,000 industrial employees. These include metropolitan areas roughly equivalent to Peoria Illinois, Columbus, Ohio, and Flint, Michigan, and larger.

[4]Metropolitan areas with less than 40,000 industrial employees.

[5]Percent change is of the region.

Our examination of the data on geographic concentration of both manufacturing and total economic activity (as reflected in population concentration) indicates that the Area Redevelopment program and the newly renamed Rural Areas Development program will not be able to depend on reinforcement from a strong autonomous movement toward industrial decentralization to attain the goals of increased employment and income levels in rural areas. Success will be achieved only to the degree that the program can supplement local efforts to organize volitional forces which can effectively modify current industrial location tendencies.

3.0 Decentralization in Specific Industries and Areas.

It seems likely that the greatest possibilities for success in reshaping the general tendency toward the centralization of economic activity in SMA's might be achieved by focusing program efforts on (1) those industries which have some particular advantage when located outside of the SMA's, (2) those areas which have particular locational advantages in spite of a current lack of industrial development, and (3) those firms whose locations can be influenced most readily by local location incentives.

3.1 The Rural Industries.

In an effort to identify those industries which have some particular advantage when located outside of the SMA's the four-digit Standard Industrial Classification (SIC) industries were ranked according to their degree of employment concentration in the SMA's.[1/] Industries that are concentrated most heavily outside the SMA's fall into several categories:[2/]

1. Agricultural processing plants - particularly dairy products, poultry, and frozen fruit and vegetable processing plants.

2. Woods and Stone Products plants - particularly logging camps, sawmills, plywood plants, cooperage and box factories; unupholstered furniture; pulp and paper mills; clay products, lime, gypsum, and cut stone products.

3. Textile, Clothing and Leather Products plants - particularly yarn, thread, and cotton mills; rugs, shirts, and gloves manufacture.

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1 For some of the limitations to this approach see Stefan H. Robock, "Rural Industries and Agricultural Development", Journal of Farm Economics, Vol. 34, # 3, August 1952, pp. 346-360.

2 These summaries were derived from work sheets made up from data taken from (1) U. S. Department of Commerce, Office of Business Economics, "Survey of Current Business", September 1961, p. 13-17, and (2) Federal Reserve Bulletins, Fall 1961.

4. Chemicals, Petroleum, and Plastics plants - particularly hard and soft wood distillation plants, turpentive plants, carbon black, cottonseed and animal oils; salt, coke, and fireworks manufacture.

5. Primary metals plants - particularly zinc and aluminum reduction plants.

6. Fabricated Metals, Machinery, and Equipment plants - particularly domestic laundry equipment, electrical engine equipment, and aircraft propellers.

The plants above can be described as having one or more of the following characteristics: (a) they process a raw material that is highly perishable, bulky, and easily reduced to a higher value per unit of product weight; (b) they are located close to the extraction source of the raw material they use; (c) they require a large amount of acreage for storage and/or create objectionable wastes are created as by-products of the production process; (d) they have a low per-worker capital investment and utilize a lower-cost relatively unskilled labor force; (e) the employment per plant is typically under 500 employees.

Among these manufacturing industries commonly found outside of the SMA's, only eight major industrial classifications have sustained an annual rate of growth of 10% or more from 1948 to 1960. They are inorganic chemicals, plastics, synthetic fibers, frozen foods, certain alcoholic beverages, aluminum ingots, skirts, blankets, and carpets.[1]

When employment in industries which have a relatively high percent (over 50 percent) employment outside SMA's is analyzed, one sees the comparative advantage of larger population centers. Only 6.7 percent of the industrial employment in industries favoring non-SMA areas is situated in cities with populations of 2.5-9.5 thousand.

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1 Using a 1957 base equal to 100, the Federal Reserve Bank presents an Index of Industrial Production which classifies the growth of industries by market groupings.

3.2 Areas with particular location advantages - the southern Indiana example.

Even though the preceeding data show a general trend of industrial employment concentration, some areas of low industrial concentration do possess location characteristics which appear to encourage future industrial expansion. Our recent study of southern Indiana[1] indicated that in this area community size was not directly related to ability to attract either new firms or new manufacturing jobs. If the percent of population of southern Indiana communities is used to indicate the expected share of new industry and manufacturing employment, we find: Communities under 5,000 population gained more plants and manufacturing jobs than their expected share, and communities with population 10,000 and over gained less (Table 4). This implies that during 1955-1958, rural communities in southern Indiana were less limited in their industrial development than urban centers. However, these smaller communities were located in the more heavily populated counties, and the counties were located within the area's mainstreams of commerce and trade.

Rural communities seemed to have a comparative advantage in attracting industry when the plants they attempted to attract: (1) employed up to 50 workers, (2) did not require a highly skilled labor force, (3) were drawn to local source of raw material, (4) did not require another local industry to service them, (5) there were similar industries close by, (6) had access to adequate rail and road transport, and (7) had management which liked a rural atmosphere.

The southern Indiana experience may be more typical of areas on the periphery of the major industrial belts than in other areas of the nation since the share of industrial employment in the nation's SMA's continued to expand between 1954 and 1958.[2]

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1 L. T. Wallace, "Factors Affecting Industrial Location in Southern Indiana, 1955-58", Research Bulletin 724, Agricultural Experiment Station, Purdue University, August 1961.

2 Recent work done by George Hack, research assistant of the Missouri Resources and Development Commission indicate the same trend for industries and rural communities.

Table 4. 1950 Southern Indiana Community Population Related to the Number of New Plants (1955-1958) and their Employment.

	Community Population			
	0-4,999	5,000-9,999	10,000+	Total
No. So. Ind. Communities	127	11	8	146
Population	144,833	72,735	307,424	524,992
% of So. Ind. Populations	27.6	13.9	58.9	100.0
No. Communities Attracting New Plants	23	8	8	39
Total No. of New Plants	23	20	39	82
% of Total	28.0	24.4	47.6	100.0
New Plant's Employment[1]	1,755	1,075	1,718	4,548
% of New Employment	38.6	23.6	37.8	100.0

1 The new employment was taken from 58 plants, not 82. Of the 82 plants, 10 declined to be interviewed, and 14 were too new to have more than skeleton crews. When the 14 plants not yet in full operation expand to their anticipated job needs, the results will have favored communities under 10,000 in approximately a 2:1 ratio.

3.3 The effectiveness of the location incentives

The results of the southern Indiana study also shed some light on the effectiveness of location incentives such as these which can now be offered on a broader scale under the Area Redevelopment Act, in modifying plant location decisions.

Discussion of the location process with firm personnel indicated that the location decision typically occurs as a three stage process. The first step involves determination of a major geographic region--the Ohio Valley or the South Atlantic region for example. The second step involves a comparison of specific areas within the general region--southern Indiana or western Kentucky, for example. The final step involves the selection of specific sites within the area.

All 72 interviewed firms indicated that information concerning the supply and/or the demand for products in southern Indiana was evaluated relative to other potential areas during the process of arriving at a location decision. Thirty-four firms evaluated specific sites in other areas or regions. Thirty-one firms evaluated more than one site in southern Indiana. Forty of the 72 firms interviewed selected their sites with no reference to specific community action; 21 firms received location incentives from communities which they regarded as important; (11 firms selected sites on the basis of personal factors, or the peripheral reason could not be identified); and of these 21 firms, 6 reported that volitional community incentives dealing with economic location factors were crucial in selecting their sites (Table 5). These 6 firms accounted for 17.2 percent (783 workers) of the manufacturing jobs created by the new plants.

Of the 21 firms which received location incentives, 12 had not considered other specific sites. The 6 firms whose final location decisions were based primarily on local location incentives indicated that, except for the specific location incentive offered, other economic and non-economic factors were approximately equal for the two or more communities which they evaluated. In no case were the location incentives effective at the first or second stage of the lo-

cation process attained above. Volitional community action was effective only at the third stage of the location process.

Table 5. Location Incentives Supplied by Southern Indiana Communities, 1955-1958

Firm	Number of employees	Industry Group	Principal incentives offered	Industry committment
1	268	Fabricated metals, machinery and equipment	Helped finance site and building	Long term repayment
2	225	Fabricated metals, machinery and equipment	Helped finance move	Long term repayment
3	132	Fabricated metals, machinery and equipment	Helped sell stock, finance railroad spur, build and finance plant	Long term repayment
4	103	Agricultural processing	Free site, plant financing	None
5	40	Chemicals, petroleum, and plastics	Free site and plant	None
6	15	Fabricated metals, machinery and equipment	Reduced taxes, low rent, available facilities	None

4.0 Evaluation of ARA and RAD and its Objectives of Increasing Industrial Employment in Depressed Areas

The foregoing analysis indicates that the design of an effective local area development program must take into account the autonomous constraints laid down by the tendency for centralization and decentralization of industrial activity. On the one hand the ARA and RAD program risk the danger of failure if they ignore the tendency for greater centralization of industrial activity within most SMA's. On the other hand failure to achieve a substantial industrial dispersion is likely to leave residuals of unemployed or under-employed workers in the smaller labor market areas and in the RAD counties.

The limitations imposed by these external constraints mean that particular effort must be given to the analysis of industrial development potential and the formulation of realistic program goals in each RAD area. This can be done by determining those industries whose site and input requirements are most adaptable to the locality, and selecting the best method to contact and attract prospective firms in those industries. To make effective use of limited funds, the ARA and RAD programs must establish criteria that (1) identify regions most in need of development aid, and (2) point out the sub-areas within regions which are especially critical and which have the most development potential. The ARA fosters this type of analysis through the formation of RAD counties, whose committees prepare overall Economic Development Plans.

A framework for effective industrialization and regional development should be developed simultaneously with the identification of potential areas of policy application. This framework should involve consideration of the following: (a) in any region there are a limited number of development variables capable of local control; (b) there are relatively more development variables of autonomous nature than there are of a volitional nature; and (c) the longer the time period involved in the development program the more variables (either endogenous or exogenous) there are which may be controlled locally. Although, the act does

not specifically recognize this division, it does provide local communities with an autonomous instrument through which they can make their volitional efforts to improve local economic growth more effective.

The Area Redevelopment Act is a development policy designed to affect the rates of economic growth in the more slowly developing regions, and specifically sets out procedures that attempt to narrow the development gap between the richly and poorly endowed areas. However, attainment of the Act's objectives are meeting some strong obstacles. Decentralization of industry outside the urban-industrial and population concentrations is not generally occurring at a fast enough rate to close the present development gap. Also, the industries that do locate in rural areas do not comprise a major share of our economy's "growth" industries. The results of our Indiana study showed that unless the local area had unique input sources, sites situated closer to market outlets were preferred. Specific community volitional forces were capable of attracting firms in some industries to local sites, but even so these sites were not far removed from existing economic channels. Thus, unless the decentralized plant was able to attain some advantage over like plants in the area or region, a program of continued subsidy would be necessary to maintain the plant in the comparatively disadvantageous location.

Provision for technical assistance, improved education and training facilities, improved job information services, and the various loans and grants included in the Act help to circumvent some of these obstacles. However, it seems clear that unless (1) the federal government is willing to subsidize the decentralization of industry to comparatively disadvantaged areas, or (2) volitional community efforts can be stimulated to create a local comparative economic advantage for industrial firms, urban-industrial development in low-income areas will not be sufficient to substantially increase employment and thus fall short of the goals described in the Act. A major implication of this conclusion is

that migration must continue to play a major role in the solution of the depressed areas problem. This conclusion gives particular relevance to the retraining provisions of the Act.

The Area Redevelopment Act provides for comprehensive treatment in many areas of economic development. It provides funds to carry out specific programs in each of the above areas. However, there is a danger that the funds may be too limited to do the job, and also that they may not be continued long enough to complete their task. A major strength and at the same time a weakness of the Act is that it relies to a large extent on local initiative of interested citizens to promote and implement volitional activities designed to improve local economic conditions. To the degree that groups and individuals are unable to recognize and understand their local problem situations and take advantage of the various provisions instituted under the law, the Act will be unsuccessful.

In summary, the task confronting the Area Redevelopment Act is a big one, an old one, and persistent one. Previous attempts to solve the low income problem have been attempted but none on as comprehensive a scale or with the resources now available through the Act. The success of the Act cannot be measured in a short-run situation, but over a longer period of time which permits the analysis of autonoumous and volitional locational forces and the effectiveness of their relative influences on economic growth in disadvantaged areas. The Act is now faced with serious obstacles in the form of autonomous economic growth concentration tendencies. Ultimate success of the Act will be measured in how effective it is in creating volitional control over these autonomous forces in areas of our economy where the human need is the greatest.