

VIRGINIA MANUFACTURING:

A Profile of Growth

The story of Virginia manufacturing since the early 1950's is one of constant growth and diversification. Between 1958 and 1967, Virginia's manufacturing work force grew at an annual rate of 3.4%, compared with an annual average rate of 2% for the nation as a whole. Value-added in manufacturing in Virginia amounted to \$4.1 billion, a 92% increase over 1958. From 1958 to 1967, Virginia's manufacturing establishments increased their expenditures for plant and equipment by 145%, reaching a level of \$347 million in 1967. Nondurable goods industries accounted for 72% of the 1967 total. The chemical, food, and paper industries have consistently led Vir-

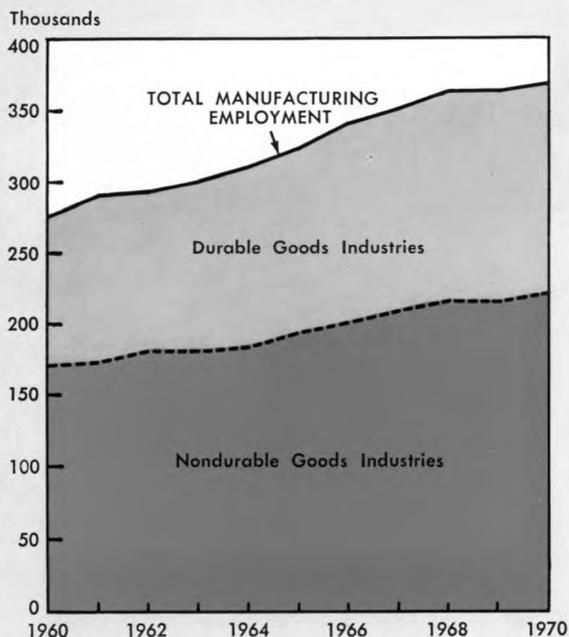
ginia manufacturers in expenditures for new plant and equipment.

MANUFACTURING EMPLOYMENT AND WAGES

Manufacturing employment in Virginia increased by 34.7% from 1960 to 1969. This was in line with the South Atlantic region's growth of 34%, and was substantially above the national gain of 20.1%. In 1970, manufacturing in Virginia employed 365,000 workers and provided jobs for 20% of the civilian labor force. The percentage of the nation's manufacturing workers employed in Virginia has grown slowly but steadily for two decades. In 1950, 1.5% of manufacturing employees in the United States were employed in Virginia. By 1958, 1.6% of the nation's manufacturing work force was located in Virginia, and by 1967 the comparable figure was 1.9%. In percentage terms this appears to be a very small increase, but the 20% growth in Virginia's share of the nation's manufacturing workers represents 66,000 new manufacturing jobs and an increase of \$350 million in the state's manufacturing payrolls. Among those manufacturers that have grown the fastest in terms of total employment are furniture, machinery, and transportation and electrical equipment industries.

Manufacturing wage rates in Virginia, as in the nation and the Southeast, have risen steadily since 1950. From 1950 to 1960, average rates climbed from \$1.18 per hour to \$1.77 per hour. By 1970, the average hourly earnings for manufacturing employees in Virginia had increased to \$2.73 per hour. Employees in durables industries benefited from these wage increases more than nondurable industry workers. Between 1960 and 1970, wage rates in Virginia were consistently 80% of national rates and were in line with rates in other southeastern states. During the 1960's, wage rates were slightly higher in Maryland and Florida than in Virginia, but the hourly earnings of production workers on manufacturing payrolls in Virginia were significantly above those of North Carolina, South Carolina, or Georgia workers during the 1960's, as shown in Chart 2.

Chart 1
MANUFACTURING EMPLOYMENT IN
VIRGINIA



Source: Commonwealth of Virginia, Division of Industrial Development, *Manufacturing in Virginia*.

GEOGRAPHICAL DISTRIBUTION

Manufacturing employment in the state is widely distributed geographically, with all Virginia cities and counties sharing in the total. In 1969, more than one-third of the state's manufacturing employment was accounted for by five major metropolitan areas: Richmond, Norfolk-Portsmouth, Newport News-Hampton, Lynchburg, and Roanoke. The heaviest concentration in Piedmont and Western Virginia is in the cities of Danville, Martinsville, Lynchburg, and Roanoke. The major manufacturing centers in Eastern Virginia are the Hampton-Roads area and the Richmond-Petersburg-Hopewell triangle. The Shenandoah Valley has experienced considerable industrial development over the past 20 years and significant pockets of manufacturing employment extend from Winchester to Bristol. But Northern Virginia generally is dominated by agricultural, commercial and government activity and offers relatively little in the way of manufacturing job opportunities.

In recent years there has been a distinct tendency toward dispersal of manufacturing facilities over the

countryside, away from the larger urban centers. Since 1966, two-thirds of new manufacturing jobs have been located in nonmetropolitan areas. This has provided the state with a manufacturing base that does not rest solely in the urban centers.

THE INDUSTRIAL MIX

Durable Goods Since 1958, durable goods industries have become increasingly important to Virginia's economy. The fraction of manufacturing employment accounted for by durables industries rose from 36% in 1958 to 40% in 1967, with almost all durable lines increasing their respective shares. The value-added from the manufacture of durable goods nearly tripled between 1958 and 1967, rising from \$0.5 billion to \$1.5 billion. The 1967 figure represented 37% of the total value-added by manufacturing in the state in that year. Virginia has increased its share of United States employment in manufacturing by 44% since 1950. The number of Virginians employed in the manufacture of durable goods has more than doubled since 1950, which is

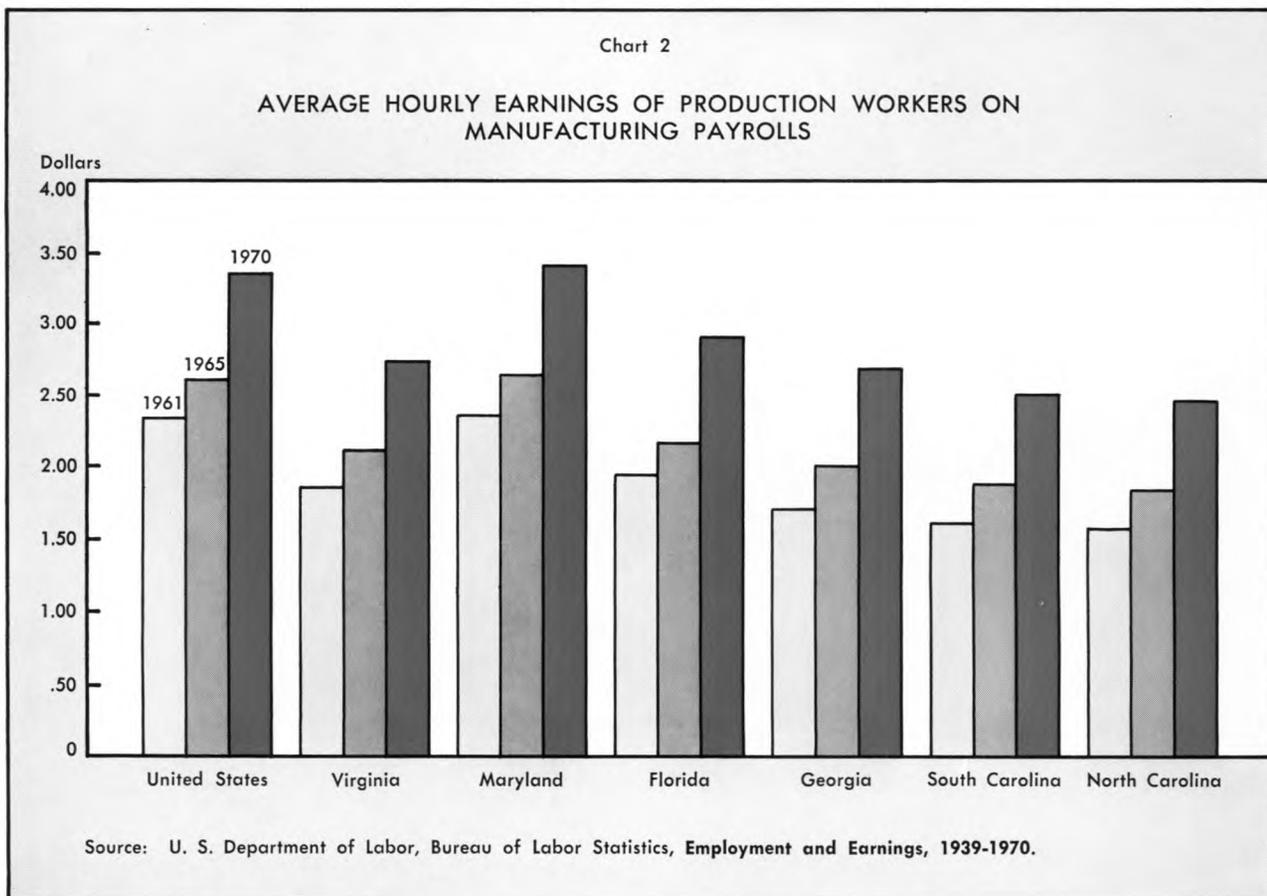


Table 1

MANUFACTURING EMPLOYMENT IN VIRGINIA¹

(thousands)

	1958		1963		1967	
	Number	% of Total	Number	% of Total	Number	% of Total
Total Manufacturing	251.9	100.0	302.1	100.0	339.8	100.0
Durable Goods	91.6	36.4	119.6	39.6	136.2	40.1
Lumber & Wood	22.3	8.9	20.9	6.9	19.2	5.7
Furniture & Fixtures	16.4	6.5	20.4	6.8	24.2	7.1
Stone, Clay & Glass	7.8	3.1	9.6	3.2	10.0	2.9
Primary Metal	4.8	1.9	5.4	1.8	6.6	1.9
Fabricated Metal	8.3	3.3	9.9	3.3	11.1	3.3
Machinery	3.8	1.5	5.8	1.9	8.8	2.6
Electrical Equipment	6.0	2.4	16.9	5.6	22.4	6.6
Transportation Equipment	17.0	6.7	25.4	8.4	27.9	8.2
Instruments	1.7	0.7	1.9	0.6	2.3	0.7
Misc. Manufacturing	3.5	1.4	3.4	1.1	3.7	1.1
Nondurable Goods	159.9	63.5	175.7	57.9	192.4	56.5
Food & Kindred Products	31.4	12.5	32.1	10.6	31.5	9.3
Tobacco Manufacturers	13.4	5.3	13.7	4.5	13.7	4.0
Textile Mill Products	34.9	13.9	36.0	11.9	38.4	11.3
Apparel & Related Products	21.5	8.6	26.6	8.8	30.4	8.9
Paper & Allied Products	11.0	4.4	12.1	4.0	13.2	3.9
Printing & Publishing	9.6	3.8	10.6	3.5	12.7	3.7
Chemicals & Allied Products	30.6	12.1	35.1	11.6	40.9	12.0
Leather & Leather Products	5.0	2.0	4.3	1.4	5.0	1.5
Other Nondurables ²	2.5	1.0	5.2	1.6	6.6	1.9

¹ Figures will not add to totals because of data that are not available.² Includes "Petroleum" and "Rubber."Source: U. S. Department of Commerce, Bureau of Census, *Census of Manufactures, 1958, 1963, 1967*.

better than twice the national increase.

Among the durable goods industries in the state, transportation equipment led the field in 1967, accounting for 8.2% of employment in the state's durable goods industries. The state's shipbuilding industry is of national significance. One-eighth of all shipyard workers in the United States are employed by the state's largest single manufacturing establishment, a shipbuilding and dry dock company. This is the only United States shipyard capable of building and providing the full range of services required by nuclear powered vessels.

The electrical equipment industry, a relative newcomer in the state, grew rapidly in the 1960's. It provided 7% of total manufacturing jobs in the state in 1967, compared with only 2% in 1958. The value-added total for this industry in 1967 came to \$300 million, larger than that for any other durable goods line. Production of industrial controls equipment is especially significant in the state's electrical equipment industry. Four Virginia plants of a large

electrical company account for 10% of the nation's total employment in the manufacture of industrial controls equipment.

The furniture industry has long been a mainstay in the state's industrial base, although it has not shared in the recent rapid growth of other durables manufacturers. In 1967, 7.1% of the state's manufacturing workers were employed in this industry, making it the sixth leading source of manufacturing jobs. The value-added contribution of furniture and fixtures manufacturing in 1967 was \$232 million, not much changed from its level in 1958. The state's industry concentrates heavily in the production of non-upholstered household furniture and office furniture. Virginia is the second leading producer of non-upholstered household furniture in the nation. This category plus the group of office furniture manufacturers accounted for 95% of employment in furniture manufacturing in the state in 1969.

During the past 20 years the relative importance of the lumber industry in Virginia has decreased. Even

Table II

VALUE ADDED BY MANUFACTURING IN VIRGINIA¹

(millions)

	1958		1963		1967	
	Dollar	% of Total	Dollar	% of Total	Dollar	% of Total
Total Manufacturing	2,122.7	100.0	3,046.3	100.0	4,067.7	100.0
Durable Goods	499.6	23.4	1,083.9	35.5	1,483.6	36.4
Lumber & Wood	77.2	3.6	105.1	3.5	141.4	3.5
Furniture & Fixtures	104.7	4.9	173.8	5.7	232.4	5.7
Stone, Clay & Glass	75.8	3.6	107.5	3.5	128.0	3.1
Primary Metal	49.0	2.3	61.7	2.0	93.3	2.3
Fabricated Metal	57.6	2.7	100.6	3.3	130.8	3.2
Machinery	28.6	1.3	58.9	1.9	110.9	2.7
Electrical Equipment	69.8	3.3	180.7	5.9	299.9	7.4
Transportation Equipment	na	na	263.3	8.6	290.6	7.1
Instruments	8.8	0.4	na	na	21.6	0.5
Misc. Manufacturing	28.1	1.3	32.3	1.1	34.7	0.9
Nondurable Goods	1,474.5	69.5	1,935.5	63.4	2,540.5	62.6
Food & Kindred Products	241.0	11.4	326.5	10.7	392.7	9.7
Tobacco Manufacturers	265.3	12.5	308.0	10.1	421.8	10.4
Textile Mill Products	208.3	9.8	260.6	8.6	328.3	8.1
Apparel & Related Products	75.4	3.6	107.7	3.5	157.9	3.9
Paper & Allied Products	131.0	6.2	171.7	5.6	230.7	5.7
Printing & Publishing	66.2	3.1	91.3	3.0	139.4	3.4
Chemicals & Allied Products	452.5	21.3	609.3	20.0	762.0	18.7
Leather & Leather Products	19.2	0.9	19.7	0.6	28.1	0.7
Other Nondurables ²	15.6	0.7	40.7	1.3	79.6	2.0

¹ Figures will not add to totals because of data that are not available.² Includes "Petroleum" and "Rubber."Source: U. S. Department of Commerce, Bureau of Census, *Census of Manufactures*, 1958, 1963, 1967.

so, in 1967 the lumber industry was the state's eighth leading employer in the manufacturing field. A number of new products that came on the market in the mid-1960's helped to stabilize the lumber industry nationally as well as statewide. The impact of these developments was greater at the state level, as might be expected, since the lumber industry is twice as important to the state's economy as it is nationally.

Nondurable Goods As in the nation, the fraction of total manufacturing employment accounted for by nondurable lines has been on a gradually declining trend in Virginia for some years. Nevertheless, nondurables lines combine to account for the majority of manufacturing jobs in the state as well as for the largest share of value-added by manufacturing. The nondurables sector has experienced considerable growth in recent years, but at rates below the rapid expansion in the durables sector. As a result, the state's industrial base has approached a close balance between durables and nondurables. In 1967, the non-

durables sector accounted for 57% of manufacturing employment and 63% of value-added in the state. The comparable fractions for 1958 were 64% of employment and 70% of value-added. From 1958 to 1967, all categories of nondurable manufacturers increased their employment rolls; however, most nondurable lines accounted for a gradually diminishing fraction of total manufacturing employment.

Based on 1967 employment data, the top three nondurable goods industries in the state were chemicals, textiles, and food processing. Tobacco, which is a major industry in Virginia, supplied only 4% of the manufacturing jobs in the state in that year; but the industry ranked second in its contribution to value-added by manufacturing. The disparity between the industry's rank as a source of jobs and its rank in value-added results from its heavy concentration in cigarette production, a relatively capital-intensive operation.

The chemical industry is Virginia's leading source

Table III

INVESTMENT IN MANUFACTURING IN VIRGINIA¹

(millions)

	1958		1963		1967	
	Dollar	% of Total	Dollar	% of Total	Dollar	% of Total
Total Manufacturing	141.6	100.0	231.8	100.0	347.0	100.0
Durable Goods	25.1	17.8	59.4	25.5	95.5	27.6
Lumber & Wood	7.5	5.3	11.8	5.1	12.4	3.6
Furniture & Fixtures	3.5	2.5	7.6	3.3	9.1	2.6
Stone, Clay & Glass	4.2	3.0	10.2	4.4	16.5	4.8
Primary Metal	1.8	1.3	4.5	1.9	6.3	1.9
Fabricated Metal	3.0	2.1	7.7	3.3	13.7	3.9
Machinery	1.7	1.2	4.0	1.7	8.2	2.4
Electrical Equipment	1.2	0.8	5.9	2.5	13.0	3.7
Transportation Equipment	na	na	6.8	2.9	13.5	3.9
Instruments	1.1	0.8	na	na	0.6	0.2
Misc. Manufacturing	1.1	0.8	0.9	0.4	2.2	0.6
Nondurable Goods	108.7	76.6	170.6	73.5	250.0	64.0
Food & Kindred Products	14.2	10.0	17.4	7.5	24.4	7.0
Tobacco Manufacturers	6.8	4.8	14.3	6.2	17.9	5.2
Textile Mill Products	7.0	4.9	16.3	7.0	25.6	7.4
Apparel & Related Products	1.1	0.8	2.9	1.3	9.2	2.7
Paper & Allied Products	32.2	22.7	27.7	11.9	28.6	8.2
Printing & Publishing	3.3	2.3	5.6	2.4	7.8	2.2
Chemicals & Allied Products	41.4	29.2	83.1	35.8	103.3	21.8
Leather & Leather Products	0.2	0.1	0.3	0.1	0.5	0.1
Other Nondurables ²	2.5	1.8	3.0	1.3	32.7	9.4

¹ Figures will not add to totals because of data that are not available.² Includes "Petroleum" and "Rubber."Source: U. S. Department of Commerce, Bureau of Census, *Census of Manufactures, 1958, 1963, 1967*.

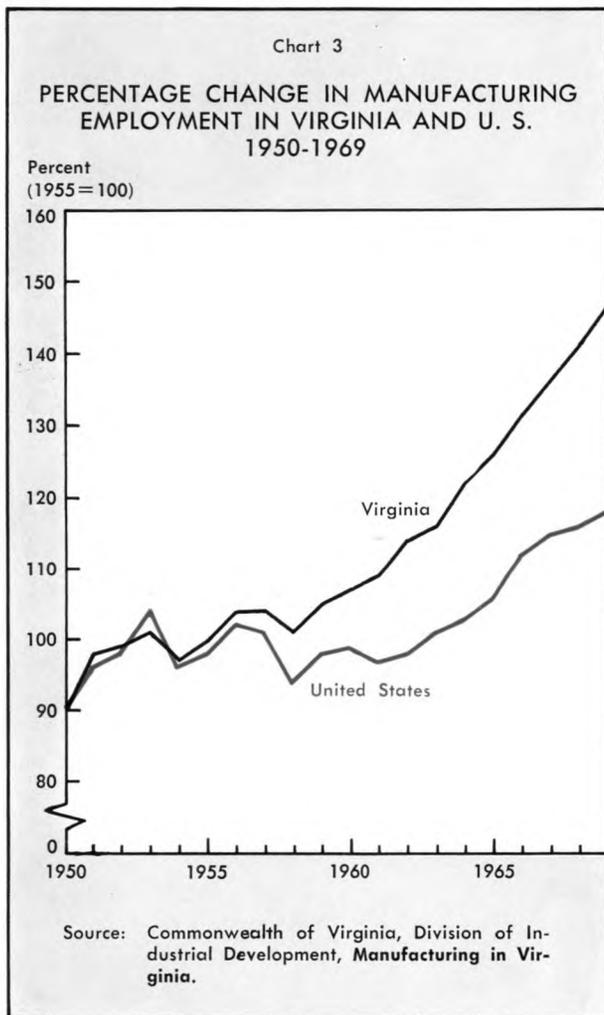
of manufacturing jobs. Much of the state's chemical capacity has long been geared to the production of man-made textile fibers and, through much of the 1950's, to the production of rayon. With the decline in the use of that product in the 1950's, the state's chemical industry experienced a decline parallel to the rest of the nation's. But with the emergence of new synthetic fibers in the 1960's, the state's producers took on a new vitality. In 1967, for example, Virginia provided over 12% of the nation's new jobs in the chemical field. In 1969, 4.5% of total United States chemical employment and 3.6% of the total value-added by manufacture of chemical products originated in Virginia.

The textile industry has always been an important element in the state's industrial base and, until 1965, was the largest source of manufacturing employment. While the industry has declined in relative importance in the state's diversifying economy, it remains the second largest source of manufacturing jobs. Especially in the southern portions of the state,

it is clearly a dynamic and important factor in the industrial prospects for the future.

In 1967, Virginia ranked sixth in the United States in textile manufacturing employment, with 4.4% of the national total. Based on value-added by the manufacture of textile products, Virginia accounted for 4.3% of the United States total.

An examination of the structure of Virginia's textile industry shows that more than one-half of the manufacturing activities are directed toward the production of broad woven fabrics. This branch of the industry requires rather highly skilled workers who command wages that are above the average for the industry. Thus, the wage scale in Virginia's textile industry is higher than in many of the industry's sub-classifications. The individual Virginia textile mill generally employs a relatively large labor force, with employment per mill averaging 404 persons. Six establishments, however, employ over 1,000 workers, and employment in one of Virginia's mills exceeds 10,000.



The third largest source of manufacturing employment in the state is the food processing industry. Like the textile industry, food processing has declined in relative importance in recent years, with much of the relative decline attributable to more rapid growth in other lines. In 1967, more than 32,000 persons, representing slightly over 9% of manufacturing employees in Virginia, worked in the food industry. Value-added by manufacturing in this industry in 1967 totaled \$393 million, or 2% below the level in 1958. The composition of the industry has changed substantially in recent years and only the sharp increase in poultry processing has allowed the food industry to maintain its position as the third largest employer among the nondurable goods industries.

CONCLUSION

Virginia's manufacturing growth has been geographically well-dispersed and widely-diversified since the mid-1950's. Around 1955, the state's manufacturing industry began to grow faster than the national average. New industries were attracted to Virginia, and those manufacturers already located in the state expanded their plants and diversified their production. This process of expansion and diversification has resulted in the rapid growth of Virginia's manufacturing sector and the constant broadening of the industrial base of the state.

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